CHAPTER II

REVIEW OF LITERATURE
A review of the vast number of studies related to productivity is neither feasible nor necessary. It would perhaps be appropriate to consider the literature that is directly relevant to the study on hand. Therefore, the psychological abstracts were scanned through with a view to pick the relevant studies in the published literature, and examine them to provide what may be termed as background knowledge of relevant literature on the subject of the investigation. It was decided to briefly review some of these studies that were considered relevant to the dependent and independent variables of the investigation.

**Historical aspects of the study of productivity**

Industrial psychology had its origins in U.S.A in the first decade of the 20th century. Beginning with the problems in advertising and selling, psychology expanded into researches centering on personnel selection, training and vocational guidance. Hugo Munsterberg with his research into industrial accidents and his book "Psychology and Industrial Efficiency" published in 1913 put Psychology into the study of the worker. By 1925 industrial social psychology entered the picture with investigations and theories of motivation, communication and group behaviour.
No history of Industrial Psychology is complete without the story of the "Hawthorne studies". In 1927, the Hawthorne plant of the Western Electric Company began a study with an attempt to determine the relationship between changes in plant illumination, intensity and production. The series of experiments comprising the Hawthorne studies started by varying factors such as lighting, temperature, hours of sleep, and the like in order to see their effect on the workers' output. There were studies to determine the effect of rest periods, a shorter work week, and wage incentives on productivity. Studies began to show the importance of social organizations and their effect on production.

More specifically, the Hawthorne Plant of the Western Electric company conducted studies with a question, "What is the effect of illumination on productivity?" Experimental evidence showed that the production of the workers varied without direct relation to the amount of illumination. Other factors like introduction of work breaks, shortening of work day and week were included in experimental manipulations. A series of experimental periods were run to determine the effect of these variables on productivity. As expected, the introduction of work breaks and shortened work periods
had a positive effect on productivity

The dominant emphasis during the early years that continued through the 1930s and 1940s, was on personnel selection and placement. During the 1940s and 1950s there was considerable interest in the human relations aspects of personnel management. This increased emphasis on human relations in industry led to greater attention on it and training of supervisory and management personnel and management development programs. Interest in the social aspects of human work logically led to the crystallization of organizational psychology. In this discipline the dominant focus was on human motivation, and efforts were made to understand the effects of organizational setting on motivation, job satisfaction and productivity (McCarmick and Illgen 1984).

The term productivity was originally used only to rate workers with respect to their skills. Those who produce more in a day by working faster or harder were said to have a higher productivity. Subsequently, attempts were made to improve the hourly outputs by studying and refining the techniques adopted by different workers. A system of measurement was then devised to evaluate workers performance.
Factors related to productivity

Age and productivity  When adults have made a vocational selection, they must adjust to the work itself, to the hours of work day or work week, to their co-workers and supervisors, to the environment in which the work is done, and to the restrictions the work imposes on their personal lives. For many young adults, especially those who have had little or no work experience, this is often the most difficult of all vocational adjustments.

Early adulthood is a period of adjustment to new patterns of life and new social expectations. As young adults change their role from that of dependent to that of independent adult, they establish new patterns of living, and make new commitments. Young adults reach the peak of their strength between the ages of twenty and thirty and maximum speed of response comes between twenty and twenty-five years. Mental abilities needed for learning and for adjusting to new situations reach their peak during the late twenties. Workers who find their jobs ego involving derive great personal satisfaction from them.

Adults usually reach the peak of their achievements between the ages of thirty and thirty-nine years.
Hence productivity is greater during this period, especially for older people. Most older people move more slowly and are less well coordinated in movements than younger people. These changes in motor abilities are due partly to physical causes and partly to psychological causes. Speed of action slows down with advancing age. In general, those of higher intellectual levels experience relatively less decrease in mental efficiency than those of lower levels. Older workers are superior in quality of work than younger workers (Hurlock 1982).

The work environment existing in private sector undertakings is dominated by motivation factors, whereas the public sector undertakings are dominated by hygiene factors. Achievement motivation of workers increase productivity. Older workers are more achievement oriented than younger workers (Edwins and Mellinger 1982).

There is a high turnover among younger than older people. The older employee often has much investment in job situation, whereas the younger person is still exploring the job field and learning more about himself through job trial and error (Gilmer 1971).

Kleemeier (1954) reviewed data on age changes in psycho-motor functions which affect ability to produce. In all the studies reviewed great individual difference
in ability was the rule at all ages - young as well as old. There is no reason to believe that it is otherwise with ability to produce on the great majority of jobs held by people approaching retirement age. Changes with age were analysed for reaction time, muscular strength, vision, hearing, psychomotor tasks, job performance and accidents.

Malhotra, Ramaswamy and San Gupta (1966) carried out studies on 879 healthy soldiers, ages 18-45 years to assess the effect of age on physical work capacity. It was found that all the physical functions tested started to show deterioration after 30 years of age and the process was progressive thereafter.

Eitner (1973) investigated the responses of older workers to signals, not only in terms of their relationships to vocations, but also to specific criteria from their biological and social dimensions. Subjects were fifty two, 16-66 years old, males and females employed in jobs dealing with long distance information reporting. Variations in choices made, and reaction times were found to be neither age nor sex related.

Lewandowski, Koburs, Flood, and Hoyer (1988) investigated the effects of age on perpetual, cognitive,
and sonar task performance of 60 men divided into four groups, i.e., young experienced sonar men aged 21-25 years, older experienced sonar men 30-50 years, young controls aged 21-25 years, and older controls aged 35-50 years. Older subjects performed as well or better than the other subjects. This maintenance of domain specific skill came in conjunction with an age related decline on a speeded visual discrimination task. Results support research that shows maintenance of expert skills most likely connected to experience and automaticity.

Salthouse and Mitchell (1990) designed a questionnaire to assess experience with activities presumed to require spatial visualization abilities and psychometric tests and administered to 383 adults ranging from 20 to 83 years of age. Although research participants varied considerably in the amount of self reported experience, statistical control of experience resulted in relatively modest attenuations of the relations between age and spatial visualization performance. These findings seem inconsistent with a strong disuse interpretation of cognitive aging phenomena and suggest that at least some age related differences in functioning are independent of the amount of experience with relevant activities.
Long and Klein (1990) findings indicate that a strong age performance effect occurs on spatial and more complex integrative tests, with peak performance occurring between 25-35 years of age and a decline thereafter. A lack of significant decline was noted on sensory, motor and language tasks. The pattern of results indicate that tasks more sensitive to brain damage showed the greater decline with age.

Avolio, Waldman and Mc Daniel (1990) examined the relative explanatory powers of age and total years of experience in an occupation for predicting supervisory ratings of work performance. The subjects were aged 18-74 years. Results indicate that experience was a better predictor of performance than age. Age and experience exhibited nonlinear relationships with performance.

Albert, Worfe and Laflache (1990) administered three tests of abstraction to subjects aged 30 to 79 years. Performance on all the three tasks showed significant differences with age.

In 1986 Mertens and Collins examined the potential interactions of age, sleep deprivation and simulated attitude. 30 healthy men (aged 30-39 and 60-69 years)
participated. Sleep deprived subjects performed lower in general, the greatest decrement in performance occurred at high altitude. The performance of older subjects was lower and more affected by increases in work load compared to younger subjects, but the detrimental effects of sleep deprivation or the combination of sleep deprivation and altitude did not interact with age.

Bourne's (1982) findings indicate that as people grow older, intrinsic work satisfaction becomes more important than extrinsic rewards such as money and promotion. Older workers can perform as well as their younger counterparts, but external and psychological conditions associated with aging, such as negative cultural expectations, lower self-esteem and high anxiety sometimes affect job performance and motivation.

The rate of high production does not tend to fall off in middle age for persons working in creative fields. Production of workers of highest quality maximizes earlier in life than does the output of works of "lesser merit." Attainment of religious, social and political leadership occurs much later in life than outstanding output in creative fields (Lehman 1953).
Horner, Philippe and Vernon (1986) using a cross sequential design found a curvilinear relation between aging and research productivity. Productivity typically began at a low rate in the subjects in their 20's, increased to a peak around the age of 40 years, then decreased in the later years. Substantial individual differences were also observed. Those who began as high publishers remained more productive than the low or medium groups at each age level examined. Even at ages 55-64 years they were more productive than the medium or low publishers.

Diamond (1986) studied whether a scientist's output generally declines with advancing age. Data consisted of age, salary, annual citations (flow of human capital) and quantity of current output measured both in number of articles and in number of pages. Analysis indicated that salaries peaked from the early to mid 60's whereas annual citations appeared to peak from age 39-89 years. The quantity and quality of current research output appeared to decline continuously with age.

Sparrow, and Davis (1988) derived two measures of performance from production record data, one relating to the quality of servicing and the other to the speed with
which services were completed. The relation between age and job performance took the form of an inverted 'U'. For the speed of servicing measures, the main effects of age, tenure, training level and job complexity were significant and there were no significant interactions. It is concluded that recent training may moderate adverse effects of age on job performance.

Examination of the studies cited here indicate that workers with positive job attitudes showed higher productivity than those with negative attitudes. Young, inexperienced employees engaged in repetitive tasks produce more when stimulated with music. There is a high turnover among younger people as they are exploring the job field. In all the studies reviewed, individual differences in ability was the rule at all ages. Findings indicate a peak performance between 25-35 years of age and a decline thereafter. It was found in some studies that experience was a better predictor of performance than age. The performance of older workers was lower and more affected by increases in workload compared to younger workers.

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**Work involvement**

Involvement of individuals with work in general refers to the normative belief regarding how important work should be in their lives. It is the value people attach to work. Psychologists clearly consider work involvement as a psychological state of the worker. Work involvement represents a general belief about work roles in general as opposed to other roles in life. A person who shows a high degree of work involvement is expected to show a high degree of job involvement. Quality of work is influenced by the degree of involvement the individual experiences. But age is an important factor which influences work involvement (Kanungo 1982).

Hanlon (1986) investigated the relationship between age and commitment to work and the job constructs measured were job involvement, work role involvement, non-economic orientation toward work and work effort. Findings show that age has little independent effect on work commitment, job satisfaction and occupational prestige.

Loscocco and Kalleberg (1988) examined age differences in work commitment and work values as well as their
work and non-work determinants in the US and in Japan. Data from managers and workers (21-61 years) show that older men were more committed to work than younger men in both Japan and the US.

Korman, Wittig Berman and Laug (1981) presented a theoretical framework that proposes that expectancy disconfirmation, contradictory role demands, sense of external control, loss of affiliative satisfactions and developmental life changes are significant factors in the personal and social alienation among professionals and managers.

Self estrangement in work had no significant correlation with any form of alienation in society. Subjects who viewed work as expressive showed a significant correlation between work alienation and alienation in society. Results show that the relationship between work alienation and alienation in society is moderated by the magnitude of work alienation (Wahba, 1980).

In a study conducted by Shepard and Panko (1974) with 305 blue collar production workers, power discrepancy was measured by the difference between the amount of job related power subjects felt they were able to exercise on their present jobs and the amount of power they felt they
should be able to exercise. It was found that power deficit increased with the degree of functional specialization at work and that power deficit was the most common experience regardless of the extent of functional specialization. Instrumental work orientation and isolation from organizational goals were the most pronounced among subjects with deficit power. Subjects with surplus job-related power were on par with those with a balance between perceived and desired power in terms of consummatory work orientation and commitment to organizational goals. Among subjects with less job-related power than they felt, they should have, instrumental work orientation and isolation from organizing goals were higher for less affluent, younger and less educated subjects.

Seeman (1972) predicted that two forms of alienation (the sense of powerlessness and engagement in intrinsically unrewarding work) would operate independently. High work alienation being an index of "need" for information and powerlessness an index of low "expectancy" concerning its likely utility, workers whose prior alienation had been determined were provided with a controlled occasion for seeking information about improved work opportunities. The evidence indicates that
a) the two forms of alienation related to search behaviour in different ways, b) the effort to show an interaction effect for the two alienations was modestly successful, c) both seeking information about work and being low in powerlessness correlated as expected with high scores on objective political knowledge.

Susman (1972) argues that the worker does in fact make a measurable contribution to the automated production process and that the quality of his contribution is influenced by the degree of alienation he experiences. Predisposing factors to alienation are described as powerlessness, meaninglessness and normlessness.

Pestonjee and Singh (1981) studied the levels of productivity as associated with morale, participation and alienation. Results indicate that high producing workers had higher morale than low producing workers. High producing employees felt more participation in decision-making and involvement in their work, however they were also found to be more alienated than their lower producing counterparts.

Sharma (1978) concluded that much of the tension and strife that pervade the industrial relations scene today can be explained by the alienation of the Indian
industrial worker. Workers' attitude and orientation toward the company and the job are associated with 1) preference for industrial work, 2) personnel policies, and 3) work technology, 4) union involvement. Sociocultural background has no effect.

Pestonjee and Singh's (1978) findings support the hypothesis that there will be a positive and significant correlation between dogmatism scores and alienation scores. The correlation coefficient is positive and statistically significant.

Female employees tended to be more alienated than males. There was no significant relationship between alienation scores and such factors as length of service. Age was negatively related to work-alienation. All job satisfaction factors (except pay) showed a positive relationship to work alienation (Naik, 1978).

150 industrial workers completed measures of alienation and ego strength, and their level of performance was assessed on the basis of production records. The performance of high ego strength subjects was significantly better than the low ego strength subjects, and less alienated subjects showed performance superior to more alienated subjects. Data indicated that performance
is not affected by ego strength and alienation, but rather the level of performance itself affects ego strength and alienation (Singh and Shrivastava, 1982)

To sum up older men were more committed to work than younger men. Some studies reveal that age has little independent effect on work involvement. High producing employees felt more participation in decision-making and involvement in their work. Female employees tended to be more alienated than males. There was no significant relationship between alienation and length of service. Job satisfaction factors showed a positive relationship to work alienation. The performance of high ego-strength workers was significantly better than the low ego-strength workers.

Organizational climate

Organizational climate refers to those external and internal environmental conditions in which an organization exists and grows, and in which people of the organization work for the achievement of the goals. Like any living organism, an industrial organization also requires a climate for its birth, survival as well as healthy growth. It has been observed that the external and internal factors have more dominating and deeper influence on organizational climate. The management of the organization feels that it
can not do much to improve things as far as external factors are concerned. Nevertheless, the management must be fully aware of the external factors that influence the organizational climate and the way they influence it.

The idea of organizational climate appears to refer to an attribute, or set of attributes of the work environment. The idea of perceived organizational climate seems ambiguous, one cannot be sure whether it implies an attribute of the organization or of the perceiving individual. If it refers to the organization, then measures of perceived organizational climate should be evaluated in terms of the accuracy of perceptions. If it refers to the individual, then perceived organizational climate may simply be a different name for job satisfaction or employee attitudes (Guion, 1973).

Gavin and Howe (1975) distinguish psychological climate from organizational climate and presents a model to depict how psychological climate affects and is affected by other variables in organizational settings. Findings indicate that psychological climate seems to be affected by the organizational setting and by the employees echelon in the organization. Further psychological climate had considerable co-variation with satisfaction and motivational variables.
Barth (1971) investigated the conditions which affect the interchange and utilization of information and work output. Factors related to the social-psychological state of the intergroup climate, and the perceived quality of the more global organizational climate are suggested to be among the more important variables.

Schneider (1972) hypothesizes that organizational climate may extend beyond formal organizational boundaries and have influence on potential organizational employees. The climate of life-insurance agencies was assessed with an 80 item - 6 factor questionnaire. Agency managers, assistant managers, and agents from 228 agencies responded. Utilizing some measures, climate preferences and expectations of 1125 newly contracted agents from 168 agencies were obtained. Correlations across agencies indicate that a) new agent expectations have low significant correlations with the climate of the particular life insurance agency they join, and b) new agent preferences are not significantly related to this climate.

Kozlowski and Doherty (1989) developed a framework integrating interactionist based climate theory and the vertical dyad linkage theory of leadership. Subordinates
with high quality supervisor relations had more positive climate perceptions, exhibited greater consensus on climate and had perceptions more similar to those of their supervisors than did subordinates with low quality relations.

Kumara and Koichi (1989) tested the hypotheses that supportive supervision and co-workers social support positively affected the employee satisfaction with the work climate and that the correspondence of such supervision and social support on employee satisfaction with the job climate was highly valuable in the case of low job awareness (i.e., level of acceptance and perceived pleasantness of job). In addition to the significant main effects of supportive supervision and co-worker social support, a significant interaction effect between supportive supervision and job awareness was obtained. This interaction suggests that supportive supervision was very important in increasing job satisfaction when workers had low level of job awareness.

A study conducted by Johnston (1976) found that two different perceptions of climate existed among 39 first (more than 3 years) and second generation (6 months to 2 years) employees of a single office. This study was designed to examine differences in perceived quality of
the relationship between the individual and the organization as a function of length of employment. Findings tend to support the hypothesis that early joiners of an organization establish and maintain positive relationships to the organization than later employees. Second generation subjects were more positive in their perceptions than first generation subjects in commitment. Second generation subjects were more negative in areas like organizational climate, systems, incentives and quality of product.

An organization development was aimed at improving the performance of unmotivated, problem sailors on a Navy ship. Target groups were 12 low performers (LPS). An attempt was made to provide a supportive organizational environment that would reinforce any positive behaviour changes among the LPS. LPS showed significant improvements in both performance and number of disciplinary actions when compared to controls (Crawford, Thomas, Fink, 1980)

Pritchard and Karasick (1973) studied the effects of organizational climate on job performance and satisfaction as well as the effects of interactions between climate and individual needs on performance and satisfaction. It was found that climate was influenced by
both the overall organization and by sub units within the organization. Climate was fairly strongly related to sub unit performance and to individual job satisfaction. There was some limited evidence for climate and individual needs interacting to influence performance and satisfaction.

McCarrey and Edwards (1973) interviewed seventy-two biological scientists in four Canadian Government labs regarding the nature of scientific accomplishment and the characteristics of effective organizational climates. On the basis of these interviews, data were gathered on nine performance measures (productivity, creativity, professional recognition and quality of published work) and 198 climate variables. It was found that organizational climate as perceived by role incumbents, and role performance are related.

Lawler, Hall and Oldham (1974) examined the view that organizational structure and process are related to organizational climate which in turn is related to organization performance and employee job satisfaction. Questionnaires were completed by the directors of 117 research and development organizations and by 291 scientists in a sub sample of 21 of these organizations. Analysis of data shows that several organizational process variables were
significantly related to the climate of the organization as perceived by scientists. Perceived climate in turn was significantly related to measures of organizational performance and to job satisfaction.

Baldwin (1987) examined three purported differences between the public and private sectors that are relevant to personnel management: goal clarity, leadership, turnover, and job security, and the impact of these differences on employee motivation. Findings indicate that these differences do exist, but are not as substantial as the literature indicates. The public sector experienced less goal clarity, greater leadership turnover, and greater job security.

Organizations must change and adopt to changes in order to survive, grow, and develop. To do so requires full utilization of creative human potential. Most of the present-day top executives in the US, however, are uncomfortable with the humanistic approaches recommended by organization theorists, despite the demonstrable benefits of such approaches. The model of the American worker is evident in constant disruptions of production, high turnover, low quality performance, and sabotage of company products - organizations have been designed in such a way
that conformity, and defensiveness are created at all levels while individual potential for competence, responsibility, constructive intent, and productivity are ignored. Creative leadership and a creative environment are the two major prerequisites to a creative organization (Hitt, 1975).

Randsapp (1987) offered twenty four guidelines for creating an organizational culture. Suggestions included creation of an interactive climate in which employees can stimulate ideas in each other, promote responsible individuality and maturity and allow creative people to take part in decision-making and long-term planning.

Some Indian studies

Singh & Das (1978) examined the impact of organizational climate on the level of commitment to work based on data collected from 200 male respondents from three organizations with similar production processes and products. It was concluded that organizational culture (defined as combination of such variables as leadership style, communication pattern, control systems, organizational goal setting and delegation of authority and responsibility) does influence the level of commitment to work. The level of commitment can be raised considerably.
more positive, more open, supportive by designing a better organizational culture

Ganesan (1979) studied the relations among occupational interests of 42 assistant professors (aged 25-45 years with 2-5 years of service in a college) to their perceptions of organizational climate, family climate, and self-concept using F. Fiedler's group atmosphere scale. The 't' ratios showed that the groups with positive and negative occupational interests toward teaching differed significantly in their perceptions of organizational climate, family climate, and self-concept. Those with consonance of occupational interest and present occupation had favourable perceptions. Those with dissonance between occupational interest and present occupation had unfavourable perceptions.

Subha & Ananta Raman (1981) administered a scale measuring organizational characteristics and a need satisfaction questionnaire to 75 professional managers. A deficiency was found in the fulfilment of subjects' needs. Security and social needs were perceived to be fulfilled more than needs of self esteem, autonomy, and self actualization. Findings also show that when needs were unfulfilled, the perceptions of the organizational climate were negative.
Kandan (1985) administered a profile of organizational characteristics and a need satisfaction questionnaire to 40 bank officers. Results indicated that the banking organizational climate was consultative and participative. There was a significant negative correlation between the need for esteem and the organizational climate, thus indicating that the perception of organizational climate becomes negative when the needs are deprived.

238 American and 247 Indian employees (aged 26-54 years) completed a 90 item job satisfaction and organizational climate questionnaire. Regression analysis showed that leadership style, tenure, communication, pay and security and participation in decision-making were significant components of job satisfaction for American subjects, whereas recognition and advancement, innovation and change, absence of intra departmental conflict, age and absence of inter departmental conflict were significant correlates of job satisfaction in Indian subjects (Krishnan & Krishnan 1984).

Sinha & Kumar (1985) studied the inter-relationship among leadership styles, interpersonal need structure and organizational climate in 19 middle level executives (aged 31-50 years). Subjects were administered questionnaires.
measuring each of these variables. Dimensions of interpersonal need structure like "expressed control" and "wanted control" were found to be positively related and "expressed affection" and "wanted affection" were negatively related with task orientation. Expression affection and wanted affection were positively related, and wanted control was negatively related with people orientation. Task oriented subjects used autocratic modes and people oriented subjects used participative modes of decision-making.

Kumari & Dwivedi (1988) investigated the effect of organizational climate on attitude toward change among 180 middle level managers from four private textile industries and 198 middle level managers from five Indian Government textile industries. Results show that the organizational climate was a significant predictor of acceptance of change.

Kumar (1978) administered a personal orientation inventory and an organizational climate questionnaire to twenty three Indian managers to examine the relationship between organizational climate and level of self-actualization. Results suggest negative relationships between organizational climate and some self-actualization factors on the variables that arouse need achievement and positive
correlations between those that arouse need affiliation

Ganesan & Rajendran (1981) administered the Orientation Inventory and the organizational climate questionnaire to 24 University Lecturers (25-50 years old). Correlations revealed significant relations between personality orientation and organizational climate dimensions of conformity, reward, warmth and support.

Sinha (1973) discussed the public and private sectors of the Indian economy which have produced completely different climates of management. It is reported that the private sector evolving from family-type organization combined with bureaucracy has produced task-oriented, exacting and personalized management. In contrast, the public sector which grew from an extension of governmental structure incorporating current political forces as well as participant management has resulted in a friendly, relaxed, yet unproductive bureaucracy. The suggested alternative was participant management which would reflect an integrated melange of task-and-people orientation.

Nakatani (1986) argued that problems in the Indian industrial culture include social divisiveness, outside leadership of unions, and a work ethic in need of drastic reorientation of equal importance is the creation of
productive climate for work in which participation and direct involvement are possible. It is noted that relaxation of quality consciousness ultimately does little to reduce costs, but instead creates a lax climate that results in stagnation.

Komar Raju (1981) collected data from seventy employees of a medium sized, public sector organization. Contingency coefficients and chi-square values revealed that the perception of organizational climate did not influence productivity. Whether the perception of climate was positive or negative, its effect on productivity was non-significant. The relationship between perception of organizational climate and job tenure was also non-significant.

Narayanan & Venkata Chalam (1982) hypothesized that 1) the perceptions of climate by workers and employers and the perceptions of workers of different levels of productivity would differ and 2) such differences would be mediated through the vulnerability of the items of climate described emotionally. Results from an ANOVA of the responses of thirty 25-35 years old male workers and employers (15 high and 15 low in productivity) of hosiery units and correlations between responses of subjects on
R. Likert's (1967) organizational climate scale support the hypotheses.

Literature so far reviewed on organizational climate reveals that climate was influenced by both the overall organization and by subunits within the organization. Climate was strongly related to subunit performance and to individual job satisfaction. Leadership style, tenure, communication, pay and security, and participation in decision-making were significant components of job satisfaction for American subjects, whereas recognition and advancement, innovation and change, absence of intradepartmental conflict were significant correlates of job satisfaction and productivity in Indian subjects.

Early joiners of an organization establish and maintain a positive relationship to the organization than do later joining employees. Second generation subjects were more positive in their perceptions than first generation subjects in commitment. Organizational culture influences the level of commitment to work. It appears that the level of commitment can be raised by designing a better organizational culture.

Subordinates with high quality supervisor relations had more positive climate perceptions. The public sector undertakings experienced less goal clarity, greater...
leadership turnover, greater job security and unproductive bureaucracy, whereas the private sector evolved from a family type of organization combined with bureaucracy has produced task-oriented management.

Organizational climate can be improved by creating an interactive climate in which employees can stimulate ideas in each other, by greater cooperation and by allowing creative people to take part in decision-making.

Achievement Motivation

Achievement motivation can be defined as the striving to increase one's own capability in all activities in which a standard of excellence is thought to apply and where the execution of such activities can therefore, either succeed or fail.

Need for achievement is positively correlated with individual modernity. A study conducted by Kuo-shu, Lianq, Wang-Huei, and Yang (1973) reveals that first-borns scored significantly higher in need achievement than the youngest. Need for achievement was found to be positively correlated with individual modernity.

Concentration and persistence in the pursuit of achievement goals increase with age, clearly from four and half years on, and failures are tolerated better and
more frequent attempts are made to overcome them (Heckhausen, 1962, 1965) They did not find any sex difference between the age of two and six Striving for achievement related recognition and fear of failure were noted from the age of six

Crandall and Rabson (1960) found a sex difference in math. After entering school, girls continued to prefer to work with solved tasks, while boys attempted to master the ones which they had failed According to social learning theory (Rotter, 1954) achievement motivation is a product of social learning and that achievement behaviour originates entirely in reinforcement by social sanctions

The family as a small group structure may also contain influences which further hinder the development of strong achievement motivation Birth order of siblings, size of the family, and intactness of the home have been shown to be important American first born children are highly motivated, especially girls (Sampson, 1962) In other cultures, such as India and Japan, it is rather the younger, and the youngest children who are more highly motivated (McClelland, 1961)

The influence of family size on the achievement motivation of boys varies with the social class (Rosen, 1961) Broken homes, or weak ties between parents, hinder
the development of high achievement motivation. Achievement motivated behaviour in children is positively correlated with the levels of parents' education, especially that of the fathers (Kagan and Moss, 1962).

McClelland (1961) has demonstrated that the more individualistic and more activist the religious ethos of an environment, the more strongly achievement motivation is fostered. Normally adulthood is a time of achievement. Adults usually reach the peak of their achievements between the ages of 30 and 39 years. It is important to realize that the age at which adults reach their peaks depends on the area in which they attain distinction. Those who are involved in science, music and philosophy usually reach their peak during the thirties or early forties. According to Erikson middle age is a crisis age in which either "generativity" the tendency to produce, or "stagnation" - the tendency to stand still, will dominate. If middle aged people have a strong desire to succeed, they will reach their peak at this time. Normally men reach their peak between 40 and 50 years (Hurlock, 1982).

Age differences in Achievement Motivation

The increasing preponderance of older persons in American society has prompted psychologists to consider developmental processes from a life span perspective, while theory and research related to achievement motivation are
inherently associated with earlier stages of development, the study of achievement related motives and patterns in the later years is necessary for a more complete understanding of their place in human development. The study of older persons may eventuate in a redefinition of achievement motivation. Specifically considered is the possibility that more extrinsic, competitive patterns of achievement give way with age to more intrinsic, task oriented patterns and that, with an aging population, this shift may be reflected in the culture as a whole (Maehr and Kleiberg, 1981).

Christian (1979) administered TAT and socio-economic status scale to 500 females aged 17-28 years. Results indicate that subjects need for achievement was high and was unaffected by age, socio-economic status, rural/urban background, fear of failure, hope of success or concern.

Erdwins, Tyer and Mellinger (1982) compared the achievement and affiliation needs of twenty unmarried female university students (aged 18-22 years), twenty married women (aged 40-55 years) also attending the university, and twenty full-time home-makers (aged 40-55 years). Older subjects expressed greater achievement motivation than younger subjects with the home-makers' achievement needs.
characterized by conformity and co-operation and mature students expressing greater independence and self-reliance. In addition mid-life subjects achieved significantly higher levels than did younger subjects. Affiliation needs were significantly greater for home-makers than for younger subjects.

Indian studies

Sinha and Chaubey (1972) selected a total 117 males from three age groups (10-15, 20-30 and 45+ years) from two highly developed and two underdeveloped villages of the Allahabad district of India. Subjects completed the N.P Chaubey Achievement motive scale for rural people which consists of eleven paired statements measuring individual achievement and failure orientations. Subjects from highly developed villages revealed relatively higher mean achievement motive scores than those from underdeveloped villages. While not statistically significant, the younger subjects from highly developed villages had lower mean scores than the older subjects, a disturbing trend suggesting a slowing in the face of development. In contrast, the younger generation of the backward villages revealed stronger motivation to achieve success than their elders. Results support the validity of the assumption...
that a sustained rate of economic development is accompanied by high achievement motive.

A study conducted by Pandey and Tewary (1979) on "Achievement values of Entrepreneurs" revealed that subjects selected by the committee showed significantly higher achievement values (V Ach) and more internality. Subjects above 35 years in age were lower in value achievement combined with less internality than those who were below 35.

From the foregoing literature, it is concluded that extrinsic, competitive patterns of achievement give way to more intrinsic task-oriented patterns with age. Subjects' achievement was unaffected by age, socio-economic status, rural/urban background and fear of failure. Older subjects express greater achievement motivation than younger subjects. Subjects from highly developed villages revealed relatively higher mean achievement motive scores than those from underdeveloped villages. The younger subjects from highly developed villages had lower mean scores than the older subjects. In contrast the younger generation of the backward villages revealed stronger motivation to achieve success than their elders.

Hines (1973) used a non-projective measure of achievement motivation to investigate the relationships among need for achievement, labour turnover and occupations in New Zealand.
Questionnaire results from 315 entrepreneurs, engineers, accountants and middle managers revealed low turnover among high n Ach self-employed subjects. High turnover subjects displayed significantly higher achievement motivation levels than low turnover subjects. Among engineers, accountants and middle managers, those with high n Ach had high labour mobility rates.

Steers (1975) studied the effect of employee need for achievement (n Ach) on the job performance—job attitude relationship among first level supervisors. Subjects were 133 females with mean age 42 years employed in a large public utility. Before need strength variations were considered, overall performance was found to be somewhat related to job satisfaction, but not to job involvement. Subjects were split into high and low n Ach groups. Performance was significantly related to both satisfaction and involvement for high n Ach subjects but not for low n Ach subjects.

Durand (1975) conducted a two year follow up study of entrepreneurial behaviour of 29 black businessmen. As predicted, high achievement needs were associated with performance when the effects of power needs in combination with achievement motivates were studied. High performing subjects were those with high achievement and lower
Achievement motivation is also described as "entrepreneurial" behaviour by which a person seeks to attain high standards of excellence. The person with a high achievement motivation is generally restless, self-confident, seeks out situations that he can control, is sensitive to the feedbacks to his behaviour, and is socially mobile upward. Increasing one's achievement motivation is usually indirectly accomplished by implanting a striving for excellence, such as emphasizing the importance of self-motivation and self-reward (Alschuler and Thompson, 1969).

Group motivation both to achieve success and to avoid failure is an important aspect of on-the-job performance. Group goals and performance can be increased by developing a sense of unity, increasing responsibility for the outcome and avoiding repeated failures. Individuals low in motivation to succeed become more highly motivated when placed in situations fostering group motivation for success (Zander, 1974).

The influence of class origin on a man's occupational status is mediated by intelligence, achievement motivation, values and educational opportunities. Since entry into prestigeful occupations generally requires higher
education, which is more available in the middle class, it was assumed that high intelligence would more strongly influence the occupational mobility of middle class boys than achievement motivation. Although ambitions may be closely associated with mental ability in the working class, because of deficits in family support and training, it was assumed that the mobility of working class youths would be more strongly influenced by desire to achieve than by level of intelligence, partly as a result of their lower educational opportunities. Drive for achievement was more predictive of occupational than of educational status among men of working class origins, while the reverse pattern was found among men of middle class background (Elder, 1968).

Morris and Fargher (1974) administered TAT and Wallach's geometric patterns test to sixty men who controlled small businesses. It was found that achievement motivation and creativity measures were related to the growth rate of subjects companies. High scores on either variable were associated with business success, low scores on both variables were associated with static or declining business performance.

Adams and Stone (1977) examined the relationship between two explanatory variables - level of need for achievement and degree of achievement opportunity on the
job and type of leisure activities people choose. It was hypothesized that people whose need for achievement is not satisfied on the job will be more likely to engage in high achievement oriented leisure activities than will those whose need for achievement is satisfied on the job. A significant relationship between need deprivation indicators and type of leisure activities supports the hypothesis that people who are unable to satisfy their achievement needs on the job are likely to do so in their leisure time activities.

Stress reactions resulting from economic pressures to perform are at macro and micro levels achievement motivation often assumed to occur as a result of high motivation, high performance, promotes entrepreneurship, which in turn is a key to the standard and concurrent frustration. However, there appears to be a nation's economic growth. There are no consistent relationships between ulcers, hypertension, wine consumption, and achievement motivation (Singh, 1977).

From the aforementioned literature it is evident that high turnover subjects displayed significantly higher achievement motivation levels than low turnover subjects. In a study conducted by "Kukla" also it is said that subjects high in resultant achievement motivation performed better than those low in resultant achievement motivation. Performance was significantly related to both satisfaction and involvement for high n Ach subjects but not for low n Ach subjects.
According to Durand, high performance subjects were those with high achievement and lowered power needs. Increasing one's achievement motivation is usually accomplished by implanting a striving for excellence. Group goals and performance can be increased by developing a sense of unity, increasing responsibility for the outcome, and avoiding repeated failures.

**Adjustment**

Adults who are handicapped by poor health may not achieve their full potential. As a result, they constantly suffer from frustrations. Middle age is characterized by a general decline in physical fitness and some deterioration is common. Common health problems in middle age include the tendency to fatigue easily, ringing in the ears, muscular pains, constipation, and loss of appetite. Many adults as they approach middle age find that their strength and endurance are not what they formerly were. As a result, they gradually shift to interests that require less strength and endurance.

Many young adults find hazards in their adjustment to the social groups with which they are now identified. Middle age often brings with it a renewed interest in social life. Much of the social life of middle age centers
around gathering of members of the same sex. These activities reach their peak in the late forties and early fifties and then begin to decline as the individual age range of the approaches the sixties.

However, the pattern of social activities in middle age is greatly influenced by the social class status of the individual. Social adjustments at every age are determined by at least two factors. First, how adequately people play the social roles that are expected of them, and second, how much personal satisfaction they derive from playing these roles. One of the important developmental tasks of middle age is achieving civic and social responsibility. How successfully middle-aged people master this task will affect not only their social and personal adjustments but also their occupational adjustments and happiness on the job.

Young adults are emotionally stable and calm in their early or mid thirties. When emotional tension persists into the thirties, it is generally expressed in worries. There is some evidence that emotional stress is more common during the early part of middle age than it is during the later part. By mid-fifties, most individuals are fairly well adjusted to middle age and are no longer upset by it.
Adjustment is a never ending process rather than something static. The potentialities and capabilities of the organism determine the limit of its adaptability. The individual has to make a three-fold adjustment to himself (self-adjustment), to his situation (passive adjustment) and to adjust the situation to himself (active adjustment). All the three aspects of adjustment are present whenever a person is adjusting himself socially (Khan, 1938).

Adjustment becomes progressively poorer with age, inadequate income, limited education, and diminishing social contact (Beckman, William, Fisher, 1958).

Peck (1960) studied a sample of 120 subjects aged 40-65 to determine whether certain psychological characteristics are related to increasing age. The psychological characteristics were positively related to overall adjustment, but age per se did not affect direction or extent or relationship.

Richmond (1951) rated a group of 345 adult male workers on a five-point scale for social adjustment and for degree of skill acquired in their respective trades. It is concluded that an individual's adjustment to a new work experience, and his ability to become a successful industrial employee, were closely associated with the
degree of skill and work ability which the individual possess.

Will the emotional disturbances of operators have more effect during a change-over than when things are stereotyped? A number of assembly line situations, involving small numbers of workers were studied by Schachter, Festinger, Willerman and Hyman (1961). It was found that emotional disturbance has little effect on stereotyped activity, but does have a disrupting effect on non-stereotyped activity.

Work having a central role in human life, it is not surprising that vocational development is easily viewed as the implementation of a self-concept. The individual aspires to a certain role and consequently "role playing is a means of self-realization, just as it is a means of self-exploration." The role expectations of the job may not be the same as the role aspirations of the individual. In such a case, the individual must adapt himself to the requirements of the situation, adapt the situational requirements to his needs, or leave the scene." Those who are expected to play conflicting roles tend to be anxious and less effective.

Cleaton (1935) in his study on "Occupational adjustment in Allegheny county" pointed out that the greatest
service in educational and vocational guidance could be rendered in the following ways 1) by assisting organizations which offer courses for adults in the classification and placement of students in courses suited to individual interests and abilities, 2) by assisting the adults in the selection of suitable vocations, 3) by advising these persons on training programs, and 4) by advising the institution and the individual on problems of emotional adjustment.

Muller (1967) attempted to determine whether adjustment to working conditions would result in conflicts. A quantitative and a qualitative 21 day behaviour analysis showed that 1 out of 7 subjects did not succeed in adjusting to the new environment. Interestingly, for subjects whose attitudes toward the new environment were neutral at the beginning, they became positive during the course of the adjustment process. Complications are regarded as the result of the unfamiliar learning situation rather than personality structure and past environment.

Anantaraman (1979) administered tests such as the life satisfaction index to 172 males (aged 55-89). Results indicate that adjustment was positively related to education, occupation, income, and social class but negatively to age.
Anantaraman (1979) in his study on "Activity vs disengagement for successful aging in old age" revealed that the greater number of activities subjects engaged in, the better adjustment they had in old age.

Literature so far reviewed reveals that adjustment becomes poorer with age. Adjustment problems increase both in number and severity with advancing age. Smaller families produced better adjusted adults. Good adjustment is positively related to being born first in a family of two. Emotional disturbance has little effect on stereotyped activity. The role expectations of the job may not be the same as the role aspirations of the individual. In such a case, the individual must adapt himself to the requirements of the situation.

Other Factors

Public and Private Sector Units

Public sector undertakings refer to factories where the investment is by the government or where the organizations are created by the State as independent autonomous corporations under government aegis. Private sector undertakings refer to organizations where the investment is by private parties, individual or groups. The service conditions, organizational climate etc. are generally different in the two types of organizations.
The organizational climate is different in each of the two aforementioned sectors of service. The private sector provides challenging work, due recognition for good work done, opportunity for growth and learning, freedom to act and congenial working conditions whereas the public sector/departmental undertakings offer high job security, moderate chances of promotion/advancement, moderate opportunities for growth and development, better organizational policies and administration, apart from providing adequate emoluments to its employees (Baligir 1992).

Responsibility and achievement are perhaps valued high in the private sector in comparison to public sector undertaking. Job security is given sufficient weight in public sector compared to private sector organizations.

The work environment existing in the private sector is relatively dominated by motivation factors whereas that of the public sector undertakings is dominated by hygiene factors. Thus maintenance seekers (job security etc.) would prefer to serve in public sectors whereas motivation seekers would prefer to join the private sector (Baligir 1992).
According to Balk (1974) three factors were affecting productivity in the public sector: (a) motivation in this sector is markedly different from motivation in industry, (b) improvement will be evolutionary and exploratory, and (c) change will come chiefly from Government policy makers and employee associations rather than from technical experts.

Cooperation

Cooperation is defined as the mutual two-way assistance pattern in which two or more persons work together or coordinate their actions, so that the outcomes of each are enhanced.

Cooperation involves individuals or groups working together to attain shared goals when others adopt a conciliatory or cooperative strategy, we tend to match this pattern (Black & Highbee, 1973). When others offer high levels of cooperation, we sometimes respond with high levels of trust and coordination (Kuhlmam & Marshello, 1975).

Haley & Strickland (1986) suggested that depressed persons, who hold negative views about themselves and the world around them tend to react more strongly to betrayal (competition from others when they expect cooperation).
than persons who are not depressed

Most of the work is performed in group settings. Individuals rarely perform their jobs entirely alone. There is a strong belief that people working together can accomplish more than people working alone. By coordinating their efforts, groups of persons can often attain goals that none of them could hope to reach alone.

Working in groups offer certain advantages. It allows individuals to pool their knowledge and skills. It allows an efficient division of labor, so that specific persons perform those tasks for which they are best equipped (Baron & Byrne, 1988).

Tjosvold (1984) has argued that theory and research on goal interdependence aid understanding social interaction and productivity in organizations. In cooperation, persons perceive their goal attainment as positively related, in competition, persons perceive their goals as negatively linked. Research shows that it strengthens work relationships, morale, productivity, and integration of the group.

Tjosvold (1988) reported that practical procedures, co-operative goals and the skills to work together and managing conflicts are the bases for productive synergy. Members must believe that their goals are co-operative in nature.
Common tasks, shared rewards supportive attitudes, and the development of shared values and cooperative goals for organizational units.

Worschel & Norvell (1980) observed that intergroup attraction increased when the cooperative efforts succeeded, regardless of environmental conditions. The amount of agreement in opinions after the discussion in the cooperative groups was significantly higher than found that in the competitive groups (Mizuhara, 1952).

Mizuhara & Tamai (1952) observed that cohesiveness in cooperative groups increased significantly which in turn lead to higher productivity.

Tjosvold (1982) reported that (1) subordinates would complete complex tasks more effectively, find their leader more supportive and develop their group more when the leader structured cooperation rather than competition, and (2) completed simple tasks more effectively under conditions of competition.

Wood, Polek and Aiken (1985) reported that coordination among group members is difficult to attain. Individuals seem to distract one another and get in each other's way, with the overall result that groups actually produce less than equivalent numbers of individuals working alone.
larger the group, the easier it is for individual members to pass their responsibilities on to others.

Zaccaro (1984) pointed out that increasing individuals' commitment to good performance could eliminate diffusion of responsibility. While performance dropped as group size increased in the low task-attractiveness condition, it actually rose in the high task-attractiveness group. Output per member was higher in groups of four than in groups of two.

Harkins, Latane and Williams (1980), Harkins and Petty (1982) and Weiner, Latane and Pandey (1981) reported that in a co-operative group diffusion of responsibility is quite general, occurring in several different cultures, and under a wide range of work conditions. They suggested that diffusion of responsibility in cooperative groups can practically be stopped by making the output or effort of each participant readily identifiable (Williams, Harkins and Latane, 1981). Zaccaro (1984) reported that output can be increased by increasing group members' commitment to successful task performance.

To sum up, cooperation involves individuals or groups working together for a common goal. Cooperation allows individuals to pool their knowledge and skills. Output was higher in groups of four than in groups of two.
tasks, shared rewards, and supportive attitudes, development of cooperative goals. Intergroup attraction and cohesiveness increased significantly in cooperative groups - complex tasks were effectively completed by cooperative groups. Diffusion of responsibility in groups working for a common goal can be eliminated by increasing individual's commitment to good performance.

The foregoing brief review of relevant literature goes to suggest that there has been considerable research on factors related to individual productivity in the western countries and some studies in India. Most of the studies have shown that there are some age differences in the quality and quantity of individual work output. Briefly stated, the studies point to the reduction of quantum of work output though the quality remained the same or improved. This needs to be confirmed in the Indian setting.

Studies on work involvement and achievement motivation have shown that they are both relevant variables, which influence, the quality and quantity of work output. Similarly, personal adjustment of the worker has also been shown to affect his work output. Studies on organisational climate have been shown to either facilitate
or discourage performance, depending on its nature.

Other variables like cooperation also seem to affect performance.

India is a developing country with a huge population and most of them in rural areas and on the borderline of poverty. Industrialization is taking place at a fast pace. If a nation has to progress meaningfully, individual productivity has to be high. However, there is a paucity of Indian studies on the role of several of the aforementioned factors as related to individual work output. Also, there are not many studies which assess the combined effect of these variables.

The Indian scenario has so far been to encourage public and state investment side by side with private investment. Since public sector undertakings vary from those in the private sector undertakings with regard to several factors that are likely to affect individual performance, there is a need to compare the individual and combined effect of some of these factors in these two types of undertakings. Such information may be helpful in planning and executing interventions.