CHAPTER-VII

SUMMARY

The present investigation was undertaken to study the effect of personality, fear of success and induced motivation upon problem solving efficiency of university and working women. A 2x2x2x2 factorial design was employed. There were two groups of personality, i.e., neurotics and stables, two fear of success groups, i.e., high fear of success and low fear of success, two motivational groups, i.e., induced motivation in the form of ego-oriented instructions and task oriented instructions, and two groups of women, i.e., university women and working women. Hence, there were sixteen conditions. In each cell fifteen subjects were used, thereby yielding a total sample of two hundred and forty subjects. Five insightful problems and one problem of set was used to gauge the effect of personality, fear of success and induced motivation upon problem solving behaviour of university and working women.

Objectives:

The present investigation aims to understand the psychodynamic factors in women's under-achievement in spite of their intelligence. In the study undertaken currently only women samples have been taken because sex-differences
in problem solving are well known (Kapila and Malhotra, 1986)—hence the focus is on women's performance only. The present endeavour has been primarily designed to see the role of temperamental factors (especially neuroticism), cultural factor (fear of success) and environmental factor (induced motivation) to see whether these multiplicatively and interactively hold the key to success in women. The present study aims at studying the differences in extreme groups of neuroticism and fear of success under induced motivation in University and Working women.

In line with these objectives the following hypotheses for the main effects and interactions were framed on the basis of the related review of literature:

- Stables/low anxiety women may perform better than neurotics/high anxiety women on variety of problem solving tasks.
- Low fear of success women may perform better than high fear of success women on variety of problem solving tasks.
- Women receiving induced motivation in the form of ego-oriented instructions and verbal persuasion may perform better than the women receiving task oriented instructions.
- Fear of success coupled with high neuroticism scores may hinder the performance of women irrespective of the working status.
- Induced motivation coupled with neuroticism may hinder the performance of women in a problem solving situation.

- Women with low fear of success may perform better than the women with high fear of success under induced motivation.

- Induced motivation in the form of ego-involving instructions may have debilitating effect when administered to women with high neuroticism score and high fear of success.

**Tools Used:**

Standard Progressive Matrices (SPM, Raven, 1960), Eysenck Personality Inventory (EPI, Eysenck and Eysenck, 1964), Fear of Success Scale (FOSS, Zuckerman and Allison, 1976) and six problem solving tasks, including horse trading problem (Maier and Solem, 1952), train problem (Adapted from Maier and Janzen, 1969), gold chain problem (Adapted from Maier and Casselman, 1970), Bhatia Squares (Bhatia, 1955), prisoner's problem (Maier and Janzen, 1969) and anagrams (Adapted from Dominowski, 1966) were used in the present study.

**Selection of Sample:**

**Preliminary Sample:** The initial sample for the present study consisted of 750 university women and 750 working women. The standard Progressive Matrices (SPM;
Raven, 1960) was administered to get their scores on intelligence. The subjects were tested in groups. The subjects scoring between 55th to 95th percentile were selected for further testing. In this way 500 university women and 500 working women were finally selected for the administration of Eysenck Personality Inventory and Fear of Success Scale.

The selected subjects on the basis of intelligence were administered Eysenck's Personality Inventory (Eysenck and Eysenck, 1964). Three types of scores were obtained on EPI, namely neuroticism, extraversion and lie scores. The subjects scoring more than 12 and less than 8 on neuroticism dimension and at the same time scoring between 8 to 12 on E/I dimension were termed as neurotics and stables, respectively. This criterion used for selection of sample on EPI is in line with the norms of university population (Kumar, 1975; Rishi and Kumar, 1986; Kumari, 1988; Tanwar, 1989).

The selected subjects on the basis of EPI were administered fear of success Scale. The scoring was done with the help of the scoring key. They subjects scoring above 'mean + \frac{1}{2} SD' were classified as high fear of success group and subjects scoring below 'mean - \frac{1}{2} SD' were classified as
low fear of success group. The mean and SD for the total sample was 108.43 and 25.00 respectively. Thus the subjects scoring above 121 were classified as high fear of success group and subjects scoring below 96 were classified as low fear of success group.

**Final Sample:**

Finally 120 university women and 120 working women were selected on the basis of their scores on Eysenck's Personality Inventory and Fear of Success Scale. Four groups were formed for university women and four groups were for working women, i.e., neurotics with high fear of success, neurotics with low fear of success, stables with high fear of success and stables with low fear of success. The t-ratios calculated for different groups indicated that the respective groups did not differ significantly from each other depicting homogeneity of the different groups on SPM scores. For the condition of high motivation, subjects in half of the sample were told that the task involves a test of their ability and they have to perform as best as they can. They were encouraged if stuck at any place in between. For the condition of low motivation, the other half of the subjects were instructed only for the task that had to be performed.
The subjects were administered six problem solving tasks. The rest pause of two minutes was given after every problem. The problems were always administered in the increasing order of difficulty as found earlier in the pilot survey. Pilot survey revealed that horse trading problem, gold chain problem and train problem are of almost equal level of difficulty followed by Bhatia squares, anagrams and prisoner's problem. But anagrams were always presented in the last because they represent the problem of set, whereas, all other problems are insightful. The first three problems, i.e., horse trading problem, gold chain problem and train problem were assessed in terms of right and wrong answer. Bhatia squares and prisoner's problem were assessed in terms of number of trials taken and time taken to solve these problems and for anagrams indices of performance was number of correct anagrams solved. On the basis of almost equal level of difficulty of horse trading problem, gold chain problem and train problem and also on the basis of the same trend of the results of chi-square test on these three problems, the right scores of these problems were combined for the purpose of further analysis.

Means were calculated for the various conditions, i.e., for two groups of personality, two groups of fear of
success, two motivational groups and two groups of women for combined right scores of first three problems, trials and time taken on Bhatia squares and prisoners' problem and number of correct responses on anagrams (see Table V).

To find the significance of difference between the said means, analysis of variance of the order of 2x2x2x2 (Edwards, 1968) was employed separately for the combined scores of horse trading, gold chain and train problem, trials and time taken on Bhatia squares, trials and time taken on prisoner's problem and number of correct responses on anagrams. In all six ANOVAs were performed (see ANOVA Tables VI, VIII, IX, XIII, XIV and XVIII).

RESULTS AND DISCUSSION

In the present investigation, on the variable of personality, it has been found that stables perform better than neurotics on all the six problem solving tasks. The F-ratios on all the six ANOVA's are significant (see Tables VI, VIII, IX, XIII, XIV and XVIII). The means (see Table V) reveal that on all the problems stables are better than neurotics.

The present results on the variable of personality have been rationalized in terms of a hypothesis that stables would perform better than neurotics, because neurotics/high
anxiety subjects devote cognitive capacity to worry about performance and thus have a less capacity to devote to the task (Wine, 1971; Weiner, 1972; Mandler, 1975; Sarason, 1975 and Humphrey and Revelle, 1984). High anxiety/neuroticism may also reduce working memory's capacity and reduction in working memory's capacity would inevitably have detrimental effects on performance of cognitive tasks (Hamilton et al., 1977; Mayer, 1977; Eysenck, 1981; Eysenck, 1983; Zatz and Chasin, 1985 and Darke, 1988). Neuroticism/high anxiety may also lead to task irrelevant processing (Ganzer, 1968; Morris and Lieber, 1970; Eysenck, 1982 and Zarantonello et al., 1984). High anxiety/neuroticism may also produce data and resource limitations in human information processing capacity (Wine, 1971; Sarason, 1975; Hamilton, 1983 and Ferguson, 1987). In line with these assumptions many investigators have reported that stables perform better than neurotics on variety of tasks (Nijhawan and Cheema, 1971; Krishna and Verma, 1972; Mohsin, 1972; Passi and Singh, 1972; Stinke, 1973; Gakhar and Luthra, 1974; Kumar, 1975; Ravinder, 1977; Sarason, 1978, 1984; Paul, 1980; Carver et al., 1983; Rishi and Kumar, 1986; Sharma and Gupta, 1988 and Sharma and Sud, 1989).

The results on the variable of fear of success show that low fear of success group is performing significantly
better than high fear of success group on prisoner's problem solving task for both trials and time taken (see Tables XIII and XIV for F-ratios and for means see Table V). The trend on the other problems is also same, but the F-ratios failed to reach the desirable level of significance, with the exception of trials taken to solve Bhatia squares (For F-ratios see Tables VI, VIII, IX and XVIII and for means see Table V). On the variable of fear of success these results are in accordance with the hypothesis framed earlier where it was hypothesized that low fear of success group may perform better than high fear of success group (Page-97). The present results are in line with the contentions of Horner (1968) who suggested that presence of motive to avoid success in women interferes with their performance, because women expect negative consequences such as social rejection and/or feeling of being unfeminine as a result of succeeding. Zuckerman and Allison (1976) also found that high fear of success was detrimental for performance for both males and females. Sherman (1983) found that girls played dumb in response to heterosexual social situation. Gravenkenkemper and Paludi (1983) suggested that fear of success interferes with performance when this motive is aroused i.e., in achievement oriented situations and when achievement of success requires masculine qualities. Ohri and
Malhotra (1988) also found that low fear of success women performed better than high fear of success women on horse trading problem, gold chain problem and train problem solving tasks.

In the present investigation the interactive effect of personality x fear of success was found significant for trials and time taken on prisoner's problem (see ANOVA Tables XIII and XIV). This two way interaction (see Table XV and Figures Xa, b, c and d) indicates that stable group with low fear of success gave the best performance on trials and time taken, whereas, neurotics with high fear of success and low fear success are showing the poorest performance. Therefore, high fear of success debilitated the performance of stables, but produced almost no effect upon the already poor performance of neurotics. The trend of interactions for trials and time taken in similar.

The results indicate that high fear of success group is performing poorer both at neurotic and stability ends, but at neurotic end the differences between high fear of success and low fear of success are not significant. Therefore, in the absence of general anxiety i.e. low neuroticism the high fear of success was able to evoke success anxiety among women irrespective of their working status. In neurotics, who are already anxious about task
outcomes, the success anxiety may have also served the same purpose as general anxiety and hence may be meaningless for them and therefore, may not produce any more decrement in their performance further.

The results on the variable of induced motivation indicated that women receiving ego-oriented instructions performed better than women receiving task-oriented instructions on horse trading, gold chain and train problems (scores combined), (See ANOVA Table VI and means Table V) and time taken on Bhatia squares and prisoner's problem solving tasks (See ANOVA Table IX and X and means Table V).

These results were in accordance with the hypothesis framed earlier (see P.98) and were in line with some of the researches carried out in this area. Angelini (1966) found that college women showed increase in n-aeh. under achievement oriented instructions. Kumar (1975) found that ego-involving instructions facilitate the performance of subjects on variety of problem solving tasks. Kumar (1963) found that ego-involving instructions can help to bring the performance of women at par with men. Sandelands and Glynn (1988) found that subjects in high involvement conditions, produced by instructing the subjects that the task is an indicator of ability, attempted more anagrams than subjects in low involvement condition, produced by
giving only task instruction. These results could be explained on the basis of contentions of Brown (1961) who suggested that, verbal instructions are stimuli, which like electric shock and noise may have motivational consequences. Sherif and Sherif (1967) suggested that threat of failure (caused by ego-oriented instructions) give rise to 'ego-tension' and therefore, anxiety germinates. This anxiety serves as a motivating state. Ego-involving instructions may also enhance the 'effectence' of people which according to Connell (1988) is a need which impels the organism toward competence and is satisfied by the feeling of efficacy. Wageman (1987) suggested that it should be possible to effect intrinsic motivation with external communications which make people feel competent. Wayne (1988) suggested that other things being equal the performance of low arousal subjects can be enhanced by increasing their arousal levels through application of appropriate motivation in the form of instructions.

The interaction effect of personality x induced motivation was found significant for trials and time taken to solve Bhatia squares (see ANOVA Table VIII and IX). The results (see Table X and Figures VIIa, b, c and d)
indicate that ego-oriented instructions hinder the performance of neurotics and improve the performance of stables. This significant interaction may be explained by the fact that neurotics are already aroused and motivational instructions further lead to over arousal, hence a hinderance in performance. As according to Yerkes-Dodson Law (Yerkes and Dodson, 1908) only moderate level of arousal is optimal for successful performance. The debilitating effect of drive may also be due to the fact that drive may lead to stress which leads to impairment in performance (Lazarus et al., 1952). This stress may be magnified when coupled with certain personality types (Kumar, 1975). Therefore, drive coupled with neuroticism leads to stress and hence hinders performance.

The interaction between fear of success x induced motivation was found significant for trials taken to solve Bhatia squares (see ANOVA Table VII) and trials and time taken to solve prisoner's problem (see ANOVA Tables XIII and XIV). The interactions (see contingency Tables XI and XVI and Figures VIIIa, b, c and d) indicate that ego oriented instructions hinder the performance of high fear of success group and facilitate the performance of
low fear of success group. This interaction may be explained by the fact that ego-involving instructions should only enhance the interest of people in a task, when people care about doing well. Achievement oriented individuals show strong interest in diagnostic ability assessment (Trope, 1975) and become involved in activities where performance is evaluated (Harackiewicz and Manderlink, 1984). Those who are not achievement oriented (high fear of success individuals) avoid ability assessment when possible and are less likely to value competence (Heckhausen, 1968). This may happen in the case of high fear of success individuals, who according to Zuckerman and Allison (1976) have low motivation to achieve. Ohri and Malhotra (1988) also found that induced motivation in the form of ego-oriented instructions is debilitating for the performance of women at high fear of success level as at that level the ego-oriented instructions are perceived as a stress.

The interaction between personality x working status was found to be significant for time taken to solve Bhatia squares problem solving task (see ANOVA Table IX). The interaction indicates (see Contingency Table XII and Figures IXa and b) that stable university women perform better than stable working women, whereas at neurotic end there is no
difference between the performance of the groups of women. This interaction may be explained by the fact that university women are having higher stability scores than working women and stability helps to boost the performance. The poorer performance of working women may also be due to the anxiety associated with role overload, role conflict, in-security and other negative factors associated with the duality of the role played by them. Dual role expectations can increase inter-role conflict (Katz and Kahn, 1978), and work load (Hall and Hall, 1982). Rabalind and Grace (1985) also suggested that dual roles of working women lead to work-family conflict and employment acts as a catalyst for feelings of role overload, role conflict and hence for psychological distress and anxiety.

The interaction between induced motivation x working status was found to be significant for the combined scores of horse trading, gold chain and train problem. The interaction results (see Table VII and Figures VIa and b) show that ego-oriented instructions boost the performance of university women and produce no effect on the performance of working women. This interaction may be explained by the fact that university women are still living in an achievement oriented world where they are being trained to compete with others and thus telling them that the task is a test of
their ability which may enhance the value of task for them and hence their better performance. Whereas, for working women who are facing social realities the achievement oriented situations may not be seen as of great importance and therefore, ego-oriented instructions may not produce any effect on the performance of working women.

The three way interaction between personality x fear of success x induced motivation was found to be significant for time taken to solve prisoner's problem (see ANOVA Table XIV). The interaction (see Contingency Table XVII and Figure XVII) indicates that ego-oriented instructions improve the performance of stables at low fear of success and produce no significant effect upon the performance of stables at high fear of success level and also of neurotics both at low fear of success and high fear of success levels. This interaction may be explained by the fact that ego-oriented instructions help to enhance the performance of low arousal subjects (Wayne, 1988) only at low fear of success level, because low fear of success individuals (achievement oriented individuals) show strong interest in diagnostic ability assessment (Trope, 1975) and become involved in activities where performance is evaluated (Harackiewicz, 1984) whereas
ego-oriented instructions may have no meaning for high fear of success subjects and neurotics who are already having high arousal levels but has a significant meaning for stables and low fear of success subjects because neuroticism helps them to reach the optimal level of stimulation required for the task, because motivating instructions help them to acquire optimal level of stimulation required for the task.

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