Chapter V

Results and Discussion

The present investigation was conducted to study the effect of feedback on self-confidence. In order to test various hypotheses formulated in Chapter III, three separate experiments were performed. The results obtained from these experiments have been discussed in this chapter.

First experiment was administered to study the sex-differences in self-confidence level without providing any feedback. A two group before-after design was employed in this experiment. The subjects were asked to develop unusual uses of three common objects, one by one. Self-confidence measures on a scale were taken before and after the accomplishment of every task.

For determining whether the self-confidence of women was significantly lower than men's self-confidence, t for uncorrelated means was employed between mean self-confidence scores obtained after performing the tasks,
Fig. 2: Showing the mean level of self-confidence of men and women in no feedback group.

- Task I
- Task II
- Task III

<table>
<thead>
<tr>
<th>Task</th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Task I</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task II</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Task III</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mean level of Self-Confidence.
without receiving any feedback. It is evident from the results in Table I and Fig. 2 that mean level of self-confidence of women was 65.83 after performing task I. This value was certainly lower than the mean self-confidence of men, that is, 85.00. This difference in self-confidence of men and women was found to be statistically significant at .01 level by employing t-test.

Table I showing mean level of self-confidence of men and women after performing various tasks without receiving any feedback and significance of differences between these means.

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Treatment</th>
<th>Mean level of self-confidence</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>I</td>
<td>No feedback</td>
<td>85.00</td>
<td>65.83</td>
</tr>
<tr>
<td>II</td>
<td></td>
<td>83.33</td>
<td>66.67</td>
</tr>
<tr>
<td>III</td>
<td></td>
<td>84.17</td>
<td>51.67</td>
</tr>
</tbody>
</table>

* P < .01

Similarly mean self-confidence of women was 66.67
any task t.e. without any feedback (data compiled on the basis of all the three) showing the mean level of self-confidence of men and women before performing tasks.

Fig. 3

<table>
<thead>
<tr>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Mean level of self-confidence
and that of men was 83.33 after performing the second task. The obtained value of $t = 3.13$ was significant at .01 level. Exactly same level of significance was observed between mean differences obtained on the third task. Thus the mean self-confidence of women was lower than that of men in all the three tasks and women show a self-confidence level that is significantly lower than men's self-confidence in no feedback condition.

Besides using the data obtained after performing the task without receiving feedback, it was possible to use another set of data to confirm no feedback findings. The level of self-confidence before performing any task could be another index to compare the self-confidence level of men and women, since it was a measure before giving any feedback. The total data in all the three experiments was compiled to form two different sets of men and women. The data included the before measures of self-confidence (no feedback) in task I only.

The results in table-2 and fig. 3 indicate that the mean self-confidence level of women ($= 54.44$) was lower than that of men ($= 66.38$).
Table 2: Showing the mean before measures of self-confidence of men and women in no feedback condition (data compiled on the basis of all the three experiments) and significance of differences between these means.

<table>
<thead>
<tr>
<th>Group</th>
<th>Treatment</th>
<th>Mean before measures of self-confidence</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men (n=36)</td>
<td>No feedback condition</td>
<td>66.38</td>
<td>3.00*</td>
</tr>
<tr>
<td>Women (n-36)</td>
<td></td>
<td>54.44</td>
<td></td>
</tr>
</tbody>
</table>

* p < .01

To determine whether this difference is true or it is a matter of chance, t for uncorrelated means was used. It was observed that the difference in self-confidence of men and women was significant. Hence, it is confirmed that women express a confidence level that is lower than that of men.

Findings that women give low estimates of their abilities in no feedback condition appear in numerous studies. Female college students at novel dexterity tasks (Rychalk and Eacker, 1969), girls in seventh and ninth grade in their English classes (Battle, 1966) and girls in fifth grade at a novel marble-dropping
game (Montanelli and Hill, 1969) anticipated doing less well than their male pairs.

Similarly, Crandall (1969) asked expectancy estimates from elementary school children for their future performance at a series of novel intellectual tasks. In each case females had a lower pre-task expectancies than did males.

Therefore, sex-difference in self-confidence has been found in all of these studies which have employed a wide variety of methodologies and achievement tasks. Lenny (1977) reported a highly authoritative appraisal of literature showing that this sex-difference in self-confidence appears regardless of the nature of specific achievement setting. Maccoby and Jacklin (1974) reported that although legal support for women's careers have increased in the last decade, women are more likely than men to express lower level of self-confidence. Clearly, social pressures such as discrimination are still impediments to women's achievement efforts and expectancies.

If women work alone, their ability estimates are likely to be no lower than men's expectancies. However, when the women are aware that their performances are to
be compared with others, they tend to show a lower level of self-confidence (Lenny, 1977). Hence women's self-confidence depends upon social comparison. In the present investigation also, subjects were informed that their performance would be compared with those who had already participated in this study. So an anticipated social comparison might be the possible reason for lower self-confidence among women.

Besides this, sex-difference in self-confidence also depends upon the availability of the clear information on individual's abilities at a specific task. When such informational feedback is absent, women seem to have lower opinion of their abilities and often do underestimate relative to men (Crandall, 1969). Therefore, it can be concluded that women express a self-confidence level lower than that of men when no feedback is given to them.

The investigator was also interested in studying the effects of two forms of feedback i.e. positive and negative feedback. The second hypothesis predicted that the self-confidence of Ss would increase as a result of positive feedback.

A single group before after-design was used to study the effect of positive feedback. Self-confidence level
Fig. 4. Showing before and after measures of the self-confidence of the group given positive feedback.

Mean level of Self-confidence

Before

Task I

After

Before

Task II

After

Before

Task III

After
of twenty four (12 males and 12 females) subjects was measured before and after giving positive feedback to them. Table 3 shows that the self-confidence among the group increased from a mean level of 57.08 to 73.33 after giving positive feedback in task I.

Table 3 : Showing the mean self-confidence scores of subjects before and after positive feedback and significance of difference between these means.

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Treatment</th>
<th>Mean self-confidence Before</th>
<th>After</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Positive Feedback</td>
<td>57.08</td>
<td>73.33</td>
<td>6.43*</td>
</tr>
<tr>
<td>II</td>
<td></td>
<td>57.5</td>
<td>74.79</td>
<td>8.86*</td>
</tr>
<tr>
<td>III</td>
<td></td>
<td>60.4</td>
<td>78.75</td>
<td>7.81*</td>
</tr>
</tbody>
</table>

p < .01*

A similar effect for the rest of the two tasks was also observed (Fig.4). This increase in self-confidence was found to be statistically significant for all the three tasks (Table 3). Thus the hypothesis has proved.

Van Oudehoven et al. (1982) pointed out that
FIG. 5. Showing before and after measures of the self-confidence (mean value) of the group given negative feedback.
positive feedback led to achievement improvement when he took 139 third graders who completed self-evaluations and four parallel versions of a spelling test before and after feedback. Similarly in Vallerand's (1983) investigations, results indicated that subjects receiving positive feedback in experimental condition displayed higher level of internal motivation irrespective of amount of feedback presented. According to McCarty (1986) both women and men responded to positive feedback by increasing their performance expectancies when he conducted a study on 114 men and 62 women subjects. Skinner (1953), and Wiard (1972) also found that positive feedback is needed for raising workers' motivation. Just possible that this increased motivation brings a change in the expectancy level. However, this is certain now that the positive feedback causes the subjects to raise their estimates of expected and actual performance.

Since experimenter was also interested to investigate if the negative feedback exerts a different influence upon self-confidence, the next hypothesis was related to the effect of negative feedback on the self-confidence of Ss. It was predicted, in this hypothesis, that there would be a decrement in the level of self-confidence of the Ss given negative feedback. The results (Table 4, Fig.5) show that the mean self-confidence level of the subjects was 63.96 which decreased to 47.29 as a result of negative feedback
Table 4: Showing the mean self-confidence scores of the Ss before and after negative feedback and the significance of difference between means.

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Treatment</th>
<th>Mean self-confidence level</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Before</td>
<td>After</td>
</tr>
<tr>
<td>I</td>
<td>Negative</td>
<td>63.96</td>
<td>47.29</td>
</tr>
<tr>
<td></td>
<td>Feedback</td>
<td></td>
<td></td>
</tr>
<tr>
<td>II</td>
<td></td>
<td>59.17</td>
<td>46.67</td>
</tr>
<tr>
<td>III</td>
<td></td>
<td>47.92</td>
<td>32.92</td>
</tr>
</tbody>
</table>

*p < .05

In task II and III it decreased from 59.17 to 46.67 and from 47.92 to 32.92 respectively. The obtained decrement was found to be significant (p < .05) upon t-test in all the three tasks thus confirming the hypothesis, that predicted a decrement in the self-confidence level of Ss.

So, the data from the negative feedback condition clearly indicates that unfavourable results depressed the self-confidence scores of the subjects no matter whether they were men or women.

Similar results were obtained by Hafner (1973)
when he conducted an experiment of verbal conditioning. Results indicated that negative reinforcer produced a decrease in the rate of responding.

Jacobs (1977) provided either positive or negative feedback to 96 undergraduate students. Positive feedback produced facilitating effects while the effects of negative feedback were deteriorating. The declining effects of negative feedback was also supported by the conclusions of the studies conducted by Schaible and Jacobs (1975), and Castro et al. (1983). Hence the hypothesis that the level of self-confidence would decrease as a result of negative feedback has been confirmed.

Jacobs (1973) has referred the negative feedback to be less desirable, since, negative feedback produced poorer results. The low desirability of negative feedback is also evident from near omnipresence of punishment in organizational settings (Luthans and Kreithner, 1975).

The last hypothesis of the present investigation predicted that the effect of both positive and negative feedback on self-confidence level of men and women would not differ significantly. For testing this hypothesis data was extracted from the results obtained after performing experiment II and experiment III.
Fig. 6 Showing mean increment in the self-confidence level of men and women as a result of positive feedback.

Mean level of Self-confidence

0 5 10 15 20 25 30

Task I

Task II

Task III

Women

Men

Women

Men

Women

Men
Experiment II was related to the effect of positive feedback on the self-confidence. A mixed gender group including 24 subjects, half of which were men and half were women, was used. Since the last hypothesis predicted about the sex-differences in the effect of positive feedback, these scores were divided into two sets of scores: one for men and the other for women. The difference between before and after scores of these two sets gave the mean increment in self-confidence level as a result of the feedback in men and women. The mean increment in self-confidence level of men was 19.16 and that of women was 15.00 (Table 5, Fig. 6) for task I.

Table 5: Showing the mean increment in the self-confidence level of men and women in positive feedback condition and significance of difference between means.

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Treatment</th>
<th>Mean increment in self-confidence level.</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>I</td>
<td></td>
<td>19.16</td>
<td>15.00</td>
</tr>
<tr>
<td>II</td>
<td>Positive Feedback</td>
<td>14.17</td>
<td>21.25</td>
</tr>
<tr>
<td>III</td>
<td></td>
<td>10.00</td>
<td>26.66</td>
</tr>
</tbody>
</table>

*p > .05    **p < .01
It seems from these results that the level of self-confidence has increased more in men than in women as a result of the feedback. But this difference was found to be insignificant when tested upon t-test thus not confirming the hypothesis. There are evidences indicating no sex-difference in the effect of positive feedback on self-confidence. Feather and Simon (1971) presented information to the subjects on anagram test and found on difference in the confidence level of men and women. The results on first task are similar to these results.

The further analysis of these results, shows a picture that is entirely different from the hypothesised effect of positive feedback on men and women. For task II and III (Table 5) women showed a higher degree of mean increment in the level of self-confidence than in men as a result of positive feedback. This difference was found to be insignificant for task II, and significant on task III, by employing t for uncorrelated means. Thus the positive feedback seems to be much more useful for women than for men on task III.

Lippa and Beauvais (1983) have shown that the low self-esteemed subjects are more influenced by positive feedback and women tend to show a lower self-esteem (Ickes and Layden, 1978). It could be inferred
on the basis of above two references that the low self-esteem in women is responsible in the women for showing a higher level of effect of positive feedback.

In fact, the lower initial estimates of the women for self-confidence are also the reason for such observed differences. The appendix B shows that the women had a self-confidence level much lower to that of the men before performing any tasks i.e. before task I. It has also been demonstrated even in the present investigation that before getting any feedback the women had shown a significantly lower level of self-confidence than men (Table 2). Now the repeated positive feedback must have led the women to realise that they can do as good as others, as their ratings of the self-confidence went on increasing on each task, and finally equalled to the ratings of men on the self-confidence level. Since the final ratings of women after the last task equalled the ratings by men, and initial levels of self-confidence in women were lower, the mean difference in the before and after measure of the women was more than in men. However, concluding the discussion of this hypothesis, it would be said that the findings show a more positive effect of repeatedly given positive feedback on women's self-confidence levels than men's self-confidence level.

To test the effect of negative feedback on the
Fig. 7. Showing mean decrement in self-confidence level of men and women as a result of negative feedback.

Mean level of self-confidence

Task I
Before
After

Task II
Before
After

Task III
Before
After

0 5 10 15 20
self-confidence of both men and women, data was pooled from the results of third experiment, exactly in a way similar to when it was extracted from the results of experiment II, to investigate the effect of positive feedback. From Table 6 and Fig.7, it is evident that mean decrease in self-confidence of both men and women as a result of negative feedback was 16.67 for first task and 12.5 for second task. As there was no difference in mean scores of men and women, no t-test was employed.

Table 6: Showing the mean decrement in the self-confidence level of men and women in negative feedback condition and significance of differences between means.

<table>
<thead>
<tr>
<th>Tasks</th>
<th>Treatment</th>
<th>Mean decrement in self-confidence level</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Men</td>
<td>Women</td>
</tr>
<tr>
<td>I</td>
<td>Negative Feedback</td>
<td>16.67</td>
<td>16.67</td>
</tr>
<tr>
<td>II</td>
<td></td>
<td>12.5</td>
<td>12.5</td>
</tr>
<tr>
<td>III</td>
<td></td>
<td>14.16</td>
<td>15.83</td>
</tr>
</tbody>
</table>

*p .05

Although, there was an observed difference in the mean decrement of self-confidence level of men and women...
on task III, no desirable level of significance was achieved. So no sex-difference in self-confidence were observed as a result of negative feedback.

There are numerous studies in literature showing that both the sexes lower their expectancies equally following negative information. For example, Rychalk and Eacker (1962) found no sex-difference in the amount of expectancy change among subjects who took tests of manuakl dexterity under the condition of either positive or negative reinforcement. Similarly no sex-differences in expectancy were found among eight-grade boys and girls (Crandall, 1969) and among fifth grade students who played a marble-dropping game while receiving either praise or criticism. McMahan's (1973) study also presented similar results. Thus, the last hypothesis has been partially confirmed here, showing that the positive feedback raises the level of self-confidence in women, (if given repeatedly) more than it raises the self-confidence level in men. But the effect of negative feedback does not differ significantly among men and women.

To sum up this work we may say that this study was mainly designed to determine the effect of feedback on self-confidence, of men and women. The results indicated that the women show a lower self-confidence than men in the absence of any feedback. The results
also show an effectiveness of positive feedback in raising and that of negative feedback in depressing the self-confidence of subjects. Thus the results supported first three hypotheses of the study. However, the fourth hypothesis was partially supported. Regarding the effect of positive feedback, no any consistent sex differences have been observed though the positive feedback influenced the women more than it influenced the women on the last task. Whereas no any difference in the direction and magnitude of the level of self-confidence of men and women have been found in the effect of negative feedback.

Implications of this study:

Feedback is considered to be necessary for learning and for motivation in performance oriented organizations (Ilgen, Fisher, and Taylor, 1979). The present study implies the usefulness of feedback in raising the self-confidence of men and women.

The evaluation of self-confidence is a critical ingredient in any employee's development. The present work shows that the positive feedback is an instrument that could be used to maintain a higher level of self-confidence, which in turn influences the morals and motivational levels of the employees. According to
Ickes and Leyden (1978) women need to be provided with the opportunities to foster some kind of confidence that men display. Since the women is also coming up in the industrial set up, it is a must to maintain their self-confidence in order to maintain the production records. The present work implies that the women also increase their level of self-confidence to be equal to the self-confidence levels of men as a results of positive feedback, even if it is very low initially.

Finally, it also emphasizes that the negative feedback has an effect on the self-confidence that is poor in its nature. Thus to maintain the motivation and morale of the employees, the negative feedback is highly undesirable.

Suggestions for further work:

(1) In the present study the independent effect of positive and negative feedback has been studied by controlling many other intervening variables. In the working set-ups there are certain interacting situational variables, such as level of feedback, time at which feedback is presented, the way it is presented, the source of feedback etc. These variables should be taken into account to know the interacting effects of these variables and feedback and to find out the specific
(2) Since this study used university students in a laboratory environment, generalizing the findings to less educated and more mature individuals in actual work settings should be done with caution. Rather, the concept should be extended to industrial situations or simultaneous set ups.

(3) The results of the present study have shown an inconsistency regarding the sex differences in the effect of positive feedback on various tasks. It has been concluded on the basis of this work that if the positive feedback is given repeatedly, it may enhance the self-confidence in women more than the self-confidence in men. Therefore, the effect of feedback on self-confidence should be investigated, by following the same design and varying the number of times the feedback is given.