Work Climate and Gender — Why Are Women Scientists So Satisfied at Work

Sunil K Dhawan

Scientist, National Institute of Science Technology and Development Studies,
Dr K S Krishnan Marg, Pusa Campus, New Delhi 110012, India

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The paper examines the implications of gender on work climate. The data from three research laboratories in India suggests that women scientists are considerably more satisfied in their work than the male counterpart. The author argues that it is not that women’s jobs are attractive than men’s, but the higher satisfaction with work environment reflects their lower expectations which themselves are likely to result from the poorer position in the labour market that women have held.

Introduction

One of the most consistent findings in empirical research is a large and significant difference between men and women’s perceptions on various aspects of job such as motivation, job satisfaction, and work climate. There is also extensive evidence that women’s job scores are worse than men’s in terms of job content, next promotion opportunities and sexual harassment. Even so, and despite their higher levels of reported stress in their life, women consistently report higher motivation scores and perceive better work climate than men do. Women’s higher motivation has been reported in recent works by Blanchflower and Oswald, Blanchflower et al., Meng, and Wootzcz and Theeuwes. They used data from British, American, Canadian, and the Netherlands. Currie found the same relationship in 1989 data covering eleven countries.

This paper considers the implications of this gender work climate differential using data from three research laboratories in India. It argues that the difference in response represent a real difference in utility from working, but that, objectively, female scientists’ jobs are worse than men’s. The resolution of this paradox may lie in the importance of expectations in well being; those who expect less from working will be more satisfied with any given job. This finding warns against the direct translation from objective characteristics to subjective well being. In this case, rather than indicating that women’s jobs are more attractive than men’s, women’s higher satisfaction with work environment (climate) reflects their lower expectations, which themselves result from the poorer position in the labour market that women have held in the past. One expects that as the difference between men’s and women’s jobs is eroded (particularly for the scientific community), so will be the gender difference in expectations and in work environment.

Literature Review

Recent years have seen an increase in economists’ interest in the empirical analysis of subjective well being variables. One such variable is satisfaction with the work climate, in its various forms. Following Clark and Oswald, this can be thought of as a type of sub-utility function, $u$, representing utility from working in an overall utility function, $v = v(u, z)$, where $z$ is utility from other areas of life. This utility from working is usually considered to be of the form

$$u = u(y, h, i, j),$$

where $y$ is income, $h$ is hours of work, and $i$ and $j$ are set of individual and job specific characteristics, respectively. The empirical analysis of work climate responses by groups has turned up several common correlation: e.g. women, the lower-educated and the young or old report significantly higher levels of satisfaction with work climate than do men the highly educated and the middle-aged, respectively.

The analysis of this correlation is useful for several reasons. According to Argyle, satisfaction with work climate is, one of the three most important predictors of overall well being (the other two are marriage and family satisfaction), and the distribution of well being is one of the primary concerns of social science. Secondly, satisfaction with work climate is to be correlated, in the expected direction, with work behaviour. Akerlof et al., McEvoy and Cascio, and Freeman find that...
work climate predicts future quits, while Clegg and Mangione and Quinn have shown that satisfaction with work climate responses are negatively correlated with absenteeism and work productivity, respectively. The understanding of this subjective well being thus provides an additional route towards the understanding of certain important labour market behaviours. Thirdly, work climate may be as close as we are likely to come to a proxy measure of utility at work, upon which lot of microeconomics is based. Work climate data may then enable us to specify more closely the likely structure of the ubiquitous utility function.

All of the above studies rely on satisfaction data being comparable across individuals; does one person use the same scale of answers to work climate questions (which in our case are based on five point scale) similarly like another? The answer is undoubtedly no, but there does seem to be signal mixed in with the noise. If answers were purely idiosyncratic, then none of the correlation between labour market behaviour and work climate scores mentioned above would have been found. In addition, it is not clear why whole groups, such as women or older workers, should systematically understand the work climate scale so differently. Lastly, psychologists and sociologists have been using such data for many years and have repeatedly validated them. Their view, which is also the focus of this paper, is that there is useful information contained in cross-section answers to questions on well being.

The final explanation rests upon a different specification of earlier equation. It has long been suggested in the social sciences that satisfaction or well being may be partly determined by relative rather than absolute arguments. Income, e.g., may be evaluated relative to some comparison level y⁰, so that:

\[ n = n (y, y^0, h, t, f) \]

Although this is a simple idea, it is difficult to test empirically because of uncertainty about what y⁰ represents. The economists of Leiden University, who investigated such comparison effects in the Welfare Function of Income (the amount of money that individuals assign to verbal labels such as 'excellent', 'good', 'adequate', etc.), typically assumed that y⁰ was the average income of people with the same age, education and sex as the respondent. Clark and Oswald expanded this idea by using a standard wage equation, based on a range of individual and job characteristics, to predict a 'going rate' for each individual in their current job.

From sociological point of view, we find that functionalists', Parsons and Parsons and Bales found adequate to explain the sexual division of labour based on male (instrumental) breadwinner roles and female (expressive) homemaker roles, which had characterized middle-class nuclear families of the late 19th and early 20th centuries. In the ensuing decade, several other researchers observed that: (i) Women were frequently omitted or under-represented as subjects, (ii) The topics studied were often more central to men's than women's lives, (iii) Women's experiences were sometimes distorted by the models or methods used, and (iv) Men's experiences were usually taken as the norm.

In a cross-national study for UNESCO, Duverger demonstrated nearly invariable role in women's occupational stratification: the higher, the fewer. Feminist theorists like De Beauvoir, Millett, and Rowbotham also pointed to an almost universal pattern of patriarchy or male dominance throughout human societies. Even the anthropologists like Rosaldo and Lamphere, after extensive comparative work had to conclude: "Everywhere we find that women are excluded from certain crucial economic or political activities, that their roles as wives and mothers are associated with fewer powers and prerogatives than are the roles of men. It seems fair to say then that all contemporary societies are, to some extent, male-dominated, and although the degree and expression of female subordination varies up to great extent, sexual asymmetry is presently a universal fact of human social life."

Before we take-up the results of the main study, it will be appropriate to examine how work climate has been defined by different authors and what exactly we wish to include in our analysis. Some theorists have argued in favour of splitting organization climate into individual-focused and organization-focused separately. They defined climate in terms of organizational attributes, "psychological climate", and individual attributes, "psychological climate", and individual attributes. Hellriegel and Schlemm, by contrast, treated climate as a more unitary phenomenon, defining it as ".....a set of attributes which can be perceived about a particular organization and/or its subsystems, and that may be induced from the way that organization and/or its subsystems deal with the environment". However, one thing common to both the definitions is that climate must be divided into two parts: First, related to the members or groups, and secondly related...
to overall organizational system. Schneider and Snyder\(^9\) have defined climate as "a global (multidimensional) impression of what the organization is". However, as it is defined, climate refers to a systematic phenomenon that pervades an organization and its parts. In addition, climate is a perceived phenomenon, knowledge of which is usually gained by administering and scoring a questionnaire. Here, we must mention that we, in our study have also used a questionnaire to measure work climate.

When we look at some of the important researches relating to work/organization climate, we find that it has been conceptualized mainly in three ways: (i) As an independent variable, (ii) As intervening variable, and (iii) As a dependent variable. As an independent variable, one researcher found that in terms of interpersonal relations, group cohesion, task involvement, etc., climate was significantly contributing to job satisfaction/dissatisfaction\(^9\). It was also found to be contributing to performance of the organization. That is to say, if members perceive the work climate to be supportive, then there are greater probabilities that they will feel satisfied with their jobs. Similarly, if the work environment is healthier, performance is likely to be better.

Climate as an intervening variable is usually found when human relations training or leadership have been used as the independent variable\(^9\). In one study, a president's leadership style in a business game was varied and three climates were introduced: authoritarian, friendly, and achieving. The achieving condition produced the highest performance level, but the democratic-friendly conditions resulted in greater satisfaction, the authoritarian climate produced low satisfaction and low innovation and productivity\(^9\). Nagappan and Gupta\(^9\), in their study of about 600 research units in India measured their work climate in terms of four dimensions: (i) Job satisfaction, (ii) moral, (iii) autonomy, and (iv) involvement. Other researchers looked at climate as dependent, or measurable end-result variable. Hellriegel and Slocum\(^9\) reviewed many studies that illustrated this point of view. One aggregate finding is that one's perception of climate varies according to the position held. Sensitivity-training programmes can also be responsible for changes in climate. Such programmes allow persons to try new behaviour and see themselves as others see them.

One of the major thrusts in recent organizational behaviour literature has been the contingency approach, not only for leadership, but also for climate. Thus, climate and performance and their relationship to each other are probably affected by certain other variables—technology, process development, or structure of the organization. There are no clear contingency factors relating to climate in a universal way.

With this background of work climate, we now focus on the main study viz. work climate and gender. Subsequent sections deal with methodology, analysis, results and observations, and concluding remarks.

**Focus**

Our effort in this study is purely analytical and exploratory. We have not developed any hypothesis regarding the comparison between male and female scientists on work climate factors. Our focus is on the following comparisons with gender:

- Degree of satisfaction of the scientists with various aspects of organization such as communication flow, decision-making practices, and goal clarity;
- Relationship of the background information of the respondents with the organizational related variables;
- Examination of the motivational conditions and its related factors;
- Degree of satisfaction of the scientists with various factors of group processes such as coordination, information sharing, confidence, and trust;
- Relationship of the background information of the respondents with the factors of group processes; and
- Examination of the overall satisfaction with the group and the factors contributing to this satisfaction.

**Methodology**

The study was part of a research program of our institute, "Scientific Culture and Laboratory Functioning: Case of an R&D Organization". The R&D organization under consideration was the Council of Scientific and Industrial Research (CSIR) which includes forty research laboratories working on different disciplines of science and technology (S&T).

A pilot study was conducted in a research laboratory of CSIR using a questionnaire. The data obtained from the pilot were analyzed to check the reliability and other types of results that may emerge from the study. Thirty scientists had participated in this phase. Based on the results of the pilot study, a modified form of the questionnaire was developed and used in the main study. Three research laboratories belonging to different Coordination Councils of CSIR were selected for the main
study. The sample of scientists was chosen using systematic random sampling with every third scientist from the standard random list. The questionnaire was distributed to the scientists in small groups and the objectives, scope, outcome of the study and the questionnaire itself were explained to them. Two days were given to the participants and from the third day onwards each scientist was contacted personally. In these meetings the emphasis was to collect reliable information and considerable time was spent in explaining them how to fill the questionnaire.

The first part of the questionnaire was related to the work climate of the research laboratory. There were nineteen questions relating to six factors: (i) Human resource priority, (ii) Communication flow, (iii) Decision-making practices, (iv) Technological readiness, (v) Senior scientists' influence, (vi) Junior scientists' influence, (vii) Goal clarity, and (viii) Motivational conditions. Each question was on 5-point scale with 1 indicating satisfaction with the item to little extent and 5 indicating satisfaction to large extent. The respondents were asked to put 'P' against the number that they considered reflecting the existing or the present situation. The second part of the questionnaire was on work group processes containing nine questions related to six factors: (i) Coordination, (ii) Making group decisions, (iii) Knowledge of the job, (iv) Information sharing, (v) Motivated to achieve objectives, and (vi) Group adaptability. Here, also each question was on a similar 5-point scale and the respondents were asked to put 'P' against the number that they considered reflecting the existing or present situation.

In all, 208 scientists from the three R&D laboratories had participated in this part of the study. There were 154 male scientists and 54 female scientists. In this paper, we have presented comparison of these two groups of scientists.

Analysis

For the first part of the questionnaire, i.e., questions relating to organizational climate, means and standard deviations were calculated for both male and female scientists for the eight factors. The idea was to understand the degree of satisfaction with the organization-related factors. Comparisons of the two groups were made using 't-test'. Pearson correlation coefficients were then calculated (gender-wise) to examine the extent of relationship between the background information of the respondents and organization related factors. Comparison of the correlation was made between male and female scientists. Finally, for this part of the questionnaire, cluster analysis was used to determine those organizational factors that form a cluster with motivational conditions. This analysis was then compared gender-wise. The aim of this comparison was to find out significant factors and forces that need to be tackled along with motivation so as to get optimum level of satisfaction.

For the second part of the questionnaire, i.e., questions related to group processes, means and standard deviations were calculated for male and female scientists and comparison was made using 't-test'. Pearson correlation coefficients were calculated to determine the extent of relationship between the background information of the respondents and the eight factors of group processes (gender-wise). Finally, step-wise regression was carried out for male and female respondents separately to find key factors that contribute significantly to the overall satisfaction with the work group.

Results and Observation

As stated earlier, our sample consisted of 208 scientists from the three research laboratories, which participated in the study. Out of these 208 scientists, 154 were male scientists and 54 were female scientists.

Table 1 presents the background information of the respondents (gender-wise). We find that the average age of the male scientists is 47.5 y compared to 42.3 y for the female scientists. Looking at these figures along with the standard deviations, we find that the male respondents are in the age group of 42 to 52 y and the female respondents are in the age group of 36 to 48 y. Total service of the male scientists (average) are 18.7 y, 18.7 y, and 7.1 y.

<table>
<thead>
<tr>
<th>Table 1 — Background information of the respondents</th>
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</thead>
<tbody>
<tr>
<td><strong>Background data</strong></td>
</tr>
<tr>
<td>Age (y)</td>
</tr>
<tr>
<td>SD</td>
</tr>
<tr>
<td>Total Service (y)</td>
</tr>
<tr>
<td>SD</td>
</tr>
<tr>
<td>Service in the Lab. (y)</td>
</tr>
<tr>
<td>SD</td>
</tr>
</tbody>
</table>
whereas for the female scientists, this average is 14.1 y.
Lastly, in the background data, service in the laboratory is reported to be 17.8 y for the males and 13.9 y for the females.

Although we find some difference in the background information in terms of age, total service and service in the laboratory between male and female scientists, but the number of years are so high that we can say that we are dealing with two almost homogeneous groups. Further, we can also say that the two groups have sufficient number of years of experience in their respective laboratories and are mature enough to provide relevant data on the climate in which they and their laboratories are functioning. In fact, many scientists, both males and females, have started their career in the laboratory itself. This was indicated during our informal discussions with them.

Thus, we can say that we are dealing with two groups of scientists (gender-wise) who are highly experienced and have seen the working of the laboratory for several years. They have also experienced the changes that might have occurred in the laboratory during their stay and seen up and downs in the polices and working of the laboratory. We can say with some justification that the response obtained from these groups (comparative) will have some value. At the same time, we should also compare these averages along with the standard deviations. It is true that majority of these scientists are well aware of the functioning of the laboratories but at the same time there are a few younger generation scientists also in the sample. This contribution of young and old scientists has helped us in the correlation analysis as well as in the regression analysis.

We now move to the actual results obtained while analyzing the data. Table 2 presents the mean scores and the standard deviations of the respondents for the eight factors of work climate. The comparative responses, presented in the last column of Table 2 are shown by the "t" value. Firstly, let us examine how the two groups have perceived their climate in which they are working. The male scientists showed dissatisfaction with four factors of work climate. These are: (i) Human resources primacy, (ii) Communication flow, (iii) Decision-making practices, and (iv) Junior scientists' influence. For the remaining four factors the satisfaction level is just average. The female scientists are dissatisfied with three factors; namely: (i) Decision making practices, (ii) Technological readiness, and (iii) Goal clarity. At the same time, they showed satisfaction to a great extent for two factors: (i) Motivational conditions and (ii) Senior scientists' influence. For the remaining three factors, i.e., human resource primacy, communication flow, and junior scientists' influence, the satisfaction is average.

Now we compare the two groups as per the gender responses. We have used t-test for this purpose. The values of the calculated and significant "t" are given in the last column of Table 2. All the "t"-values are negative which indicates that overall female scientists are more satisfied compared to male scientists. Looking at the calculated "t"-values, we find that for the factor motivational conditions, the difference between the male scientists and the female scientists is maximum. One can
conclude from this value that female scientists are comparatively more motivated towards work than the male scientists. In fact, the average score suggests that male scientists are satisfied with motivational conditions only to some extent, whereas the female scientists are satisfied to a great extent. Next highest t-value is for the factor senior scientist influence. The female scientists feel that their senior colleagues have greater say in what goes on in the organization, whereas the male scientists do not feel it in the same way. The female scientists also feel that some of the junior scientists have influence in the laboratory functioning, whereas the male scientists are highly dissatisfied and feel that juniors should have some influence in the functioning of the organization.

Next factor where the gender difference is significant is human resource primacy, which reflects the degree of satisfaction with the working conditions. For this factor also we find that the female scientists are more happy compared to their males counterpart. And finally the table indicates that females are satisfied with the communication flow compared to male scientists. Overall, Table 2 signifies that there exists considerable difference between the male and female scientists of our sample on the eight factors of work climate. However the statistically significant difference is found on five factors. The female scientist has perceived their work climate as better and healthy, whereas the male scientist is comparatively less satisfied.

Table 3 presents the significant correlation among background information of the respondents and the eight factors of work climate (gender-wise). Only the significant correlations with direction (in the brackets) are presented. While looking at Table 2 one can easily find the differences in the correlation between male and female scientists. What we find from Table 3 is as follows.

(i) With increase in age, total service and service in the laboratory, females’ satisfaction and knowledge about communication flow increases. This factor does not appear in Table 3 for male scientists. For male, the factor, which appears for all the three demographic data, is goal clarity. The sign of the correlation is positive indicating that with increase in age and other demographic data, as reported in Table 1, clarity about the goals of the organization (in general) and goals of individuals become clearer to the male scientists.

(ii) We find significant correlation for both male and female scientists for the factor decision making practice. However the sign of correlation is positive for male scientist and negative for female scientists. Thus the difference between the two groups clear with increase is total service and service in the laboratory the male scientists feel that the way decisions are taken in the laboratory are satisfactory and concerned staff is consulted before these decisions are finalized. However the female respondents think other way round. They feel that with increase in total service and service in the laboratory the decisions making practice becomes more level oriented and senior scientists are the only ones who are consulted.

(iii) The finding cited in (ii) can also be checked by looking at the correlation for the factor senior scientist’s influence with the total service and service in the laboratory of the respondents (gender-wise). This correlation is positive for female scientist and negative for male scientists. Influence in the organization, in a way highlights the degree of participation in the decision making. However the directions/sign of correlation is in reverse order. The female scientists feel that with increase in the total service and service in the laboratory the degree of

<table>
<thead>
<tr>
<th>Factors</th>
<th>Age</th>
<th>Total Service</th>
<th>Service in lab</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Human resources primacy</td>
<td></td>
<td>Fi (+)</td>
<td>Fi (+)</td>
</tr>
<tr>
<td>2 Communication flow</td>
<td>Fi (+)</td>
<td>Fi (+)</td>
<td>Fi (+)</td>
</tr>
<tr>
<td>3 Motivational conditions</td>
<td>Fi (+)</td>
<td>Fi (+)</td>
<td>Fi (+)</td>
</tr>
<tr>
<td>4 Decision-making practices</td>
<td>M(-)</td>
<td>Fi (-), M(-)</td>
<td>Fi (-)</td>
</tr>
<tr>
<td>5 Technological readiness</td>
<td>M(+).</td>
<td>M (+)</td>
<td>M (+)</td>
</tr>
<tr>
<td>6 Jr Scientists influence</td>
<td>M(-)</td>
<td>M (-)</td>
<td>M (-)</td>
</tr>
<tr>
<td>7 Sr Scientists influences</td>
<td>M(-), Fi (+)</td>
<td>M(-), Fi (+)</td>
<td>M(-), Fi (+)</td>
</tr>
<tr>
<td>8 Goal clarity</td>
<td>M(+)</td>
<td>M (+)</td>
<td>M (+)</td>
</tr>
</tbody>
</table>

Note: "M" stands for male respondents and "F" stands for females. Sign in the brackets shows significant correlations with directions.
participation of senior scientists in organizational functioning also goes up, whereas the male scientists feel that this influence goes down. The male scientists also think that the junior scientist's influence in organizational functioning also goes down with increase in total service and service in the laboratory. In fact the picture that emerged one can tentatively conclude that female scientists perceive a bureaucratic set-up, whereas the male scientists perceive it to be an autocratic structure.

(iv) We have seen in Table 2 that females are highly motivated than the male scientists and the difference between the two groups is statistically significant at 1 per cent level. In Table 3 also, we find that as the time goes the increase in total service and service in the laboratory the motivation level of female scientists also goes up. The situation is not true for the male respondents. Thus, we can conclude that females are more satisfied and highly motivated towards work compared to male scientists.

Figure 1 presents the result of cluster analysis for motivation and its related factors (males and females separately). We find three factors important for the motivation of male scientists. These are: (i) Communication flow, (ii) Decision-making practices, and (iii) Technological readiness. On the other hand, we have four factors which form cluster with motivation for the female scientists. These are: (i) Human resource primacy, (ii) Junior scientists’ influence, (iii) Communication flow, and (iv) Senior scientists’ influence. Thus, except for the factor communication flow, we find different factors while comparing male versus female scientists. Therefore, if this organization wishes to develop policy (ies) to motivate its employees then they must take into consideration the difference that exists between male perceptions and the female perceptions. This is an important aspect because in majority of studies, general policy guidelines are prepared for the organization as a whole without realizing the gender differences. Ignoring this vital component in policy may result in the failure of the entire action plan? In fact, in Table 2, we have seen that there exists quite a difference between perception on motivational conditions by male and female scientists. This figure further explains the factors that are responsible for this difference.

We can say that female scientists have high motivation level towards their job compared to male scientists because they are satisfied with the working environment.

<p>| Table 4 — Responses of the factors of the group processes |
|---------------------------------|-----------------|-----------------|--------|</p>
<table>
<thead>
<tr>
<th>Factors</th>
<th>Male (N1=154)</th>
<th>Female (N2=54)</th>
<th>t-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Co ordination</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>3.33</td>
<td>3.75</td>
<td>-3.59*</td>
</tr>
<tr>
<td>SD</td>
<td>0.82</td>
<td>0.71</td>
<td></td>
</tr>
<tr>
<td>2 Making group decisions</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>3.52</td>
<td>3.85</td>
<td>n.s.</td>
</tr>
<tr>
<td>SD</td>
<td>0.71</td>
<td>0.68</td>
<td></td>
</tr>
<tr>
<td>3 Knowledge of job</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>3.39</td>
<td>3.32</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>0.85</td>
<td>0.95</td>
<td>n.s.</td>
</tr>
<tr>
<td>4 Information sharing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>3.25</td>
<td>3.78</td>
<td>-3.29*</td>
</tr>
<tr>
<td>SD</td>
<td>0.89</td>
<td>0.62</td>
<td></td>
</tr>
<tr>
<td>5 Motivated to achieve objectives</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>3.14</td>
<td>3.92</td>
<td>-7.76*</td>
</tr>
<tr>
<td>SD</td>
<td>0.85</td>
<td>0.54</td>
<td></td>
</tr>
<tr>
<td>6 Group adaptability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>3.45</td>
<td>3.54</td>
<td>n.s.</td>
</tr>
<tr>
<td>SD</td>
<td>0.71</td>
<td>0.75</td>
<td></td>
</tr>
<tr>
<td>7 Confidence and trust</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>3.09</td>
<td>3.75</td>
<td>-5.85*</td>
</tr>
<tr>
<td>SD</td>
<td>0.93</td>
<td>0.62</td>
<td></td>
</tr>
<tr>
<td>8 Overall satisfaction</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>3.43</td>
<td>4.01</td>
<td>-4.97*</td>
</tr>
<tr>
<td>SD</td>
<td>0.88</td>
<td>0.48</td>
<td></td>
</tr>
</tbody>
</table>

*p < 0.01, i.e. significant at 1 per cent level
that prevails in the laboratory, they are happy with the opportunities given to senior and junior scientists of their organization in influencing what goes on, and are also satisfied with the communication channel (s). On the other hand, male scientists are comparatively less satisfied or dissatisfied with the communication channels, decision-making practices, and technological readiness.

So far we have dealt with the perception of scientists regarding organization or laboratory as a unit of analysis. We now move to their perceptions on group within which they are carrying out their activities.

Table 4 presents the mean scores and standard derivations on eight factors of group processes giving figure for male and female scientists separately. Last column gives the t-values (comparing male with the female scientists). We should note that all the mean scores for the male as well for the female scientists are more than three (the mid-value). Therefore, we can say that our sample scientists, irrespective of gender, are satisfied, to some extent, with the group in which they are working. However the degree of satisfaction differs in relation to gender. This, we can check by looking at the significant t-values.

The maximum t-value is found for the factor 'motivated to achieve objectives' Female scientists are more happier than their male counterparts for this factor. As stated earlier, we find that within the group also the female scientists are more motivated towards work than the male scientists. Next highest t-value is for the factor 'Confidence and Trust' indicating that the female scientists have more confidence and trust in their colleagues working within their group compared to male scientists. Team spirit is a factor of mutual trust and this result indicates that females can and are working more as a team in the group. One should not think that it is not that female scientists are having good relations with other female scientists. Contrary to this the result shows that they are more adjustable to work in a team.

Coordination of work and information sharing among colleagues within the group is more for the female scientists compared to the male scientists. Information, in today’s world is power. Like in bureaucratic set-up, clerks are quite powerful, as they are the key to the information. However our results show that female scientists are not power prone and they share information with other colleagues more frequently than the male scientists. Finally, overall satisfaction with the group is high for both the groups but degree of satisfaction is higher in the female scientists.

Table 5 presents the correlation (significant) between eight factors of group processes and the background information of the respondents (gender-wise). The difference between males and females is quite obvious from Table 5. Only for the factor ‘knowledge of job’, we have comparable correlation for male and female scientists, whereas for other correlation we are finding different factors.

First, let us see the correlation related to male scientists. They feel that with increase in service in the laboratory the group decision making processes improve and an effort is made to consult those who are affected by these decisions. Secondly, with increase in total service and service in the laboratory the knowledge of job also goes up. This is true for female scientists also. This result is understandable because in an R&D set up, if a person is working sincerely within the group, his knowledge will definitely improved over a period of time. Next important correlation, which we found for male scientists, is with the factor ‘confidence and trust’ and total service and service in the laboratory. The sign of relationship is negative. This indicates that with in-
crease in total service and service in the laboratory the confidence and trust among colleagues goes down as perceived by male scientists. For the female scientists the correlation is significant with positive sign. Thus, as stated earlier the female scientists have considerable trust with their colleagues and as a result they can work as a team better compared to the male scientists. Finally, negative correlation is found between overall satisfaction with the group and the total service. Perhaps, as the male scientists grows older, and with lack of trust and confidence among colleagues, his satisfaction level goes down with increase in total service.

For the female scientists, information sharing is widely recognized. Even in the correlation table, we find positive relations with all the three background data of the females with the factor information sharing. Thus, with increase in age, total service and service in the laboratory the females become more open and share almost all kinds of works related information with their colleagues. Partly, this may be a result of high motivation level, which does not enter in their psyche as a hindering force. Motivation to achieve objectives is positively related to service in the laboratory. Hence, our earlier explanation that motivated female scientists share information freely, becomes true. For other significant correlation, we have already discussed earlier.

In the final analysis of group processes, we did the step-wise regression by taking overall satisfaction as dependent variable and other seven variables as independent variables. The regressions were performed for male scientists and female scientists separately. Table 6 presents the results of these regressions. Except for the factor confidence and trust that appeared in both the regressions (gender-wise) other factors are different. This indicates that different factor leads to overall satisfaction with the group for male and female scientists. For male scientists the first factor that entered the regression was confidence and trust. Making group decisions and group adaptability follows this. The three factors together explained 78 per cent of variation in the overall satisfaction. For female scientists the first factor that entered the regression was coordination, followed by information sharing and confidence and trust. These three factors together explained 70 per cent of the variation in the overall satisfaction with the group.

**Concluding Remarks**

An important aspect of any inquiry is the conceptual framework that organizes the questions and findings. Pioneers in the gender field, like us, found no ready paradigms that make sense out of women’s experience, as they know it. Sociologist Smith wrote: “Inquiry does not begin within the conceptual organization or relevances of the sociological discourse, but in actual experience—-.” Philosophers Harding and Hintikka went even further to claim that “women’s experience systematically differs from male experience upon which knowledge claims have been grounded”.

In our study, we thought that there should not exist much differences between the perceptions of male and female scientists. The reason being that both the groups are highly qualified, experienced, and doing challenging tasks. However the analysis does not support our initial thinking. Women scientists are highly motivated and have developed their attitudes toward job in such a way that they can adapt to any major changes that may occur in the organization. They are happy with decision making practices and also with the working environment.

At the organization level, the women scientists feel that their senior colleagues have sufficient influence in what goes on in the laboratory. They are happy about this procedure. It was also observed that this group of scientists feels that some juniors also have little to average influence in laboratory functioning. This may be due to committee system being adopted in many laboratories in which some young and junior scientists are included.

On the other hand, male scientists are comparatively unhappy over the work climate, which includes working...
conditions, communication flow, decision making practices, and junior scientists influence. There is a clear cut difference of opinion between male and female scientists except for the factors like goal clarity, technological readiness and decision making practices. One may recall scientist and mathematician Keller who have suggested that women are quite capable of scientific thought, but of a different kind that sees the inquirer as related to the subject of inquiry, not separate and emotionally uninvolved, Reinharz in a more general fashion, holds that the social scientist is most insightful when beginning from observations based on her own subjective experience.

The correlation coefficients provide a more detailed picture between the male and female scientists. Except for the factor, decision making practices, where there was some similarity between the two groups, in all other correlations, there is a clear cut demarcation. Here also we find that women scientists are highly motivated and with increase in their service in the laboratory the motivation level also goes up. Here we would like to mention that whenever some Action Plan to motivate people is thought of for the organization a total picture is considered. However our data and analysis show that we must analyse data gender-wise and the differences between the male employees and female employees should be incorporated. Our data indicates that for male scientists the most important factors are: confidence and trust, making group decisions, and group adaptability. For the female scientists, these factors are: coordination, information sharing and confidence and trust.

One should not go in for generalization on the basis of our data but the paper does provide a vital direction in the field of work climate and gender.

References

DHAwan: Work Climate & Gender