CHAPTER 4
DESIGN AND METHODOLOGY

The purpose of the present study was to compare the organizational climates, attitude towards work and life, and efficiency in a traditional Indian organization and the one being managed with TPM system.

This chapter gives an outline of the design and methodology used to test various hypotheses formulated in the previous chapter. The present study was designed in the following manner.

Design

Since the Japanese Collaboration Company (MUL) employees and Indian work culture employees (LPS) and these are the self-defined groups with different nature of work and status, they were taken as two independent groups in this study. Thus, a two randomized group design was adopted, to conduct the investigation. The measures were taken on Organisational Climate Inventory (OCI) and Quality of Working Life (QWL) and absenteeism.

<table>
<thead>
<tr>
<th>Group I</th>
<th>Group II</th>
</tr>
</thead>
<tbody>
<tr>
<td>LPS (N 250)</td>
<td>MUL (N 250)</td>
</tr>
</tbody>
</table>
Sample

Two types of organisations were selected, First industry from which sample was drawn was Laxmi Precision Screws (LPS), Rohtak. This is an Indian Limited organization and Second was Maruti Udyog Limited (MUL) which is being managed with Japanese collaboration, located in Gurgaon district. Thus, both are located in Haryana state. Maximum attempts were made to match the organisations. In terms of ownership both the companies were the limited companies. Although it seems ideal to match the product also, yet it was not really required here as the emphasis was not on the measurement of production as dependent variable. However, the market of the products of both the companies is spread all over the country. Both the companies are large manufacturing units including various levels of formal hierarchy i.e. managers, supervisors and workers in various branches of the company.

A sample of 500 subjects was drawn from both the above mentioned organizations i.e. LPS and MUL purely on random basis. All workers in both the organizations were selected from three different levels in the hierarchy of various groups i.e. top, middle and lower line. These were as follows:

<table>
<thead>
<tr>
<th>1st Level</th>
<th>IIInd Level</th>
<th>IIIrd Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>Managers</td>
<td>Supervisors</td>
<td>Workers</td>
</tr>
<tr>
<td>(Top Level)</td>
<td>(Middle Level)</td>
<td>(Lower Level)</td>
</tr>
<tr>
<td>(n = 100)</td>
<td>(n = 50)</td>
<td>(n = 100)</td>
</tr>
</tbody>
</table>
Tools Used

The following tools were used in the present study.

1 Organizational Climate Inventory (OCI).
2 Work and Life Attitude Survey to measure the Quality of Working Life (QWL).

Organizational Climate Inventory

OCI form B published in 1976 was developed by Chattopadhyay and Aggrawal. They had earlier developed form A with 20 dimensions. Since their basic purpose was to deal with hospital personnel, it was felt that 20 dimensions and 116 items are just too long a scale. Therefore, the judges were asked to judge whether item under consideration should be included in an instrument designed to measure organizational climate in an Indian organisation. By factor loading, form B was finally prepared. It includes eleven short scales which measure performance standards, communication flow, reward system, responsibility, conflict resolution, organizational structure, motivational level, decision making process, support system, warmth and identity problems. These scales are easily completed by unsophisticated respondents which are known to be psychometrically acceptable and normative data is also available for them. Each scale has a different list of items. The total no of items are 70.
Chottopadhyay and Aggarwal (1976) have tried to understand the concept of organizational climate by examining various available models of organizational climate. They have given an elaborate model which takes into consideration the social system as reflected in the economic relations, class relations, culture, political system, technological level and so on. They have visualized on organization as an outcome of societal system. An organization has a structure; it reflects class relations, it has roles; ownership is defined in definite terms. It also has specific goals and there are varying sizes of organizations. The various elements of organization contribute to the psychological environment in an organisation. Organizational climate is determined also by member characteristics i.e. their age, sex and length of association with the organization. Apart from these there are several other organizational variables which influence organizational climate. Organizational climate, thus, is an outcome of an interplay between a number of variables of the social system, the organization and the individual members. The instructions and items on each scale have been shown in Annexure A.

Work and Life Attitude Survey:

A Hindi adaptation of work and life attitude survey scale developed by Warr, Cook, and Wall (1979) was used. The survey is a
robust instrument in the field of quality of working life. It includes seven short scales which measure work involvement, intrinsic job motivation, higher order need strength, perceived intrinsic job characteristics, job satisfaction, life satisfaction, and self rated anxiety. These scales are easily completed by unsophisticated respondents, which are known to be psychometrically acceptable and normative data is also available for them.

The survey has one terminological feature. The meaning of words 'work' and 'job' have been taken differently. Work covers the jobs more generally but job refers to tasks undertaken in a particular setting.

Each scale has a different list of items. These items were drawn from literature and through discussions. A pilot study was also carried out to assist with initial decisions about items and procedure by the authors. For each scale a separate set of instructions is given. This reduces the association between scales and encourages internal homogenity. The scales are presented in such a sequence, so as to keep continuity in the whole survey.

The sequence of scales and main instructions given for each scale have been shown in Annexure B along with the items on each scale. There is no definite time limit but the average time taken to complete the whole survey is about 30 minutes.
Procedure

First of all the quality of working life scale was adopted in Hindi. The schedule is an extremely useful test for organizational, managerial and industrial research. But 70 per cent of population in India is not educated. Specifically the majority of people working in various industries, i.e. the labour class and the class IV employees in various other sectors are illiterate. Therefore, such a survey looses its implication due to the language hazards in country like ours. It is always better to use the Indian standardized tools for research purposes. Keeping in mind the better implication of a Hindi Version, an adaptation of work and life attitude survey in Hindi was done. First of all it was, translated in Hindi. After Hindi translation by the authors, it was judged by 5 experts in Hindi. Now it was circulated amongst 5 senior psychologists and 5 lecturers dealing in Organizational Psychology in the Management Department of various universities, as judge for their comments regarding ambiguity of language and any other lack of clarity and understanding. Now a sample of 100 subjects was given both the versions at an interval of two months. The correlation value of the two was .78. High correlation indicates towards accuracy of translation and a high validity.
A randomly selected sample of 100 subjects was used to measure the test-retest reliability of the Hindi version. The subjects belonged to various organisations at Rohtak including teaching and non-teaching staff of M.D.U., PGIMS, State Bank of India and various industrial organisations at Rohtak. The test-retest at a gap of two months resulted in a correlation value of .82.

Now a prior permission to conduct this study was taken from the General Managers of both the industries. The sample was randomly selected from the total population of employees in three levels i.e. Managerial Level called Top Level, Supervisors---Middle Level and Workers---Lower level, with the help of employees of time offices, Labour Welfare Officers and Personnel Managers of both the companies. For conducting study on lower levels of employees, permission was also taken from the department incharge's and their co-operation was also sought.

Then each worker of the sample was approached separately and a rapport was established with him. The purpose of the study was explained in brief and a few personal questions (name and age) and general questions related to educational qualification, marital status, family background etc. were asked for general information and for properly establishing rapport. The workers were assured about the anonymity of their responses. After that, the general instructions related to questionnaire were given as mentioned in Annexures A
and B. In this way all the 500 respondents were given both the questionnaires. Absenteeism data was collected from time offices, registers of both the companies.

**Absenteeism Data**

Absenteeism data was taken from the previous two years attendance records of the workers. These records were available from time offices of the two companies. It was restricted up to two years due to the limitations as many workers had joined their respective company only two years back. Otherwise also the OC is an ever-changing kind of dimension in any organisation. The rate of absenteeism before the period of two years or that dates back year not too long, may not bear any relevance to serve the purpose of the present study.

The total absenteeism was the sum of true absences (absence without information), casual leaves, sick leaves, leave with pay, leave without pay or in other words total number of days the worker had remained away from the work situation. Although it was intended to have separate records of all types of leaves, i.e. casual leave, medical leave, station leave, annual vacations, leave with pay, leave without pay, but as the data were not available separately on these issues especially for LPS workers, only total absenteeism was considered for present study.
The data collected revealed that working days of employees in both the companies were different and it would have been difficult to use any parametric test. So the raw absenteeism data were first converted into percentages and those percentages were further equated to angles, in degrees with the help of table L (Guilford, 1989).

Procedure of Scoring

Organizational Climate Inventory:

The answers were recorded on 5 Point scale for all the 11 (eleven) components. The scoring was done with the help of scoring key provided (Annexure A).

Quality of Working Life

The answers were recorded on 7 point scale for all the 7 components. The option number 1 was scored as one, option number 2 was scored 2 and so on. Thus, the option number 7 was given a score of seven. Each question of each component was scored in the same way. The scores were then added to compute a total score on each component and a global score on QWL. Higher the score better would be the QWL. The scores on both the scales were now tabulated groupwise (Appendices A and B, Master Charts) and analysed as discussed in Chapter 5.