CHAPTER Six

CONCLUSIONS AND SUGGESTIONS
6.1 **INTRODUCTION**

Within the scope of this investigation, the engineering industries are those industrial organizations manufacturing and supplying engineering products, either as finished or semi-finished components that include metal castings, machined parts, fabricated components, assemblies and sub-assemblies, etc., to the customers that are Original Equipment Manufacturers (OEMs) or the end-users.

For the purpose of collecting the primary data for fulfilling the objectives of the research, out of approximately 2,600 permanent employees of these industries in the study area, consisting of two MIDC Industrial Estates near Kolhapur City and Shivaji Udyamnagar Industrial Area with the City itself, a sample of 250 respondents, consisting of 40 Technical Managers, 40 Administrative Managers, 150 Production Workers and 20 Administrative Staff was taken up through the Purposive Quota Convenience Sampling Technique.

A pretested structured interview schedule was administered to these respondents to gather the primary data useful in analyzing the role of select Employee Involvement (EI) Schemes, namely, Intra-organizational Verbal/Non-verbal Communication, Departmental Meetings, Suggestion Box Scheme, Quality Circles, Representative Participation and Financial Participation in the implementation of the ISO-9000:2000 Quality Management System in the Engineering Industries in the study area.

The Employee Involvement (EI) Schemes were tested against the requirements (Clauses) of ISO-9000 (Year 2000 edition). Thus, the effectiveness of EI Schemes on Clause-4 (Quality Management System), Clause-5 (Management Responsibility, Clause-6 (Resource Management), Clause-7 (Product Realization) and Clause-8 (Measurement Analysis and Improvement) and conclusions were drawn based on the analysis of the collected empirical data.

6.2 **MAJOR CONCLUSIONS**

The following have emerged as the major conclusions of the present investigation:

6.2.1 **Human Resource Profiles of the Respondents**

(1) **Technical Managers**

The representative Technical Manager in the engineering industries in the study area is a 36-45 years old male, graduate, with Marathi as his mother tongue. He has work experience of more than 16 years and for the last 5-10 years, he is associated with
his present employing organization.

While half the technical managers belong to the age group of 36-45 years, about one fourth of them are in the senior age group of above 46 years and about one third of them belong to the younger age group of 26-35 years. Though majority of the Technical Managers have work experiences of more than 16 years, one fourth have slightly less experience of 11-15 years. Although majority of them have Marathi as their mother tongue, more than one third have other languages as mother tongue.

(2) Administrative Managers

The representative Administrative Manager in the engineering industries in the study area is a 36-45 year old male, graduate, with Marathi as his mother tongue. He has 16-20 years of work experience and for the last 5-10 years, he is working with his present employing organization.

While half of the Administrative Managers belong to the 36-45 years age group, more than one fourth of them are in the age groups of 26-35 years and above 46 years age groups. Also, one fourth of them have two college degrees or are postgraduates. Alike Technical Managers, more than one third Administrative Managers also have other than Marathi as their mother tongue.

(3) Production Workers

The representative Production Worker in the engineering industries in the study area is a 26-35 years old male, having education upto 12th standard and has Marathi as his mother tongue. He has work experience of 11-15 years and is associated with the present employing organization for the last 11-15 years.

While more than one third Production Workers are in the age group of 26-35 years, almost half of them are either in the age group of 18-25 years or 26-45 years. More than one third of them have education upto technical diploma, but one fourth of them have studied only upto the 10th standard. Though majority of them have Marathi as their mother tongue, more than half have other languages as their mother tongue, making the group of multilingual and representing various parts of India. With regards to the work experience, about one fourth are in the entry level group, having experience of 5-10 years. While majority of the workers are associated with the present employing organization for more than 10 years, one third of them are with the same organization for the last 5-10 years.

(4) Administrative Staff

The representative Administrative Staff in the engineering industries in the study area is a 36-45 years old male, graduate, with Marathi as his mother tongue. He has 16-20 years experience, which he has earned in the present organization only.

While majority of the Administrative Staff are in the age group of 36-45 years, half of them are in the initial age group of 18-35 years, one fourth have educational qualification upto 12th standard and have other than Marathi as mother tongue. Though majority of them have 16-20 years work experience, half of them have maximum 15
years experience and only one fourth are associated with the present organization for 5-10 years.

6.2.2 Overall Opinion of Respondents about the Role of Employee Involvement Schemes in the Implementation of ISO-9000:2000 Quality Management System

In all, the four categories of the respondents, namely, Technical Managers, Administrative Managers, Production Workers and Administrative Staff were interviewed for the investigation of the role of various Employee Involvement Schemes (EIs).

It is revealed that, collectively all the four categories have rated the role of EIs as being ‘good’. Respondent category-wise comparison show that though all the categories have rated EI schemes as being ‘good’, there are minor differences in ratings granted by them to various schemes, which is obvious. It is also observed that the Administrative Managers, which comprises the managers from the departments having support functions such as Marketing Accounts, HRD, etc., and are not engaged in the manufacturing activity directly, are more positive about the role of EIs in the implementation of ISO-9000:2000 Quality Management System. They are followed, in a descending order, by the Production Workers, Administrative Staff and lastly, Technical Managers.


Various requirements of the five Clauses of ISO-9000:2000 Quality Management System were tested for analyzing the role of six selected EI Schemes.

It is revealed that in the implementation of the various Clauses of ISO-9000:2000 Quality Management System, the role of the EI schemes is ‘good’.

It is also found that, though the role of EI schemes in implementing each Clause is ‘good’, there is a slight difference in the opinions about the effectiveness of EIs when the Clauses are considered separately. It is observed that the EIs are more effective for Clause-6 (Resource Management), followed, in a descending order, by Clause-8 (Measurement Analysis and Improvement), Clause-5 (Management Responsibility), Clause-4 (Quality Management System), and Clause-7 (Product Realization).

It may also be concluded that there is a gap of about 25 percentile points between the Perfect (100%) and the prevailing role of the EIs.

6.2.4 Scheme-wise Comparison of the Role of EI Schemes in the Implementation of ISO-9000:2000 Quality Management System

The study covered a total of six different EI schemes, namely, Intra-organizational Verbal/non-verbal Communication, Departmental Meetings, Suggestion Box, Quality Circle, Representative Participation, and Financial Participation.

It is found that the Verbal/non-verbal Communication and Departmental Meetings, both falling under the downward communication process, have been rated by the respondents as playing an ‘excellent’ role in the implementation of ISO-9000:2000 Quality Management System. It is also observed that there are mixed opinions about the ‘Upward
Problem-solving’ schemes such as Suggestion Box and Quality Circle. The opinions of the respondents show that the Suggestion Box schemes plays only a ‘fair’ role, while the role of the Quality Circle is ‘good’. Among the remaining schemes, Representative Participation is considered as playing a ‘good’ role and Financial Participation playing only a ‘fair’ role.

The present researcher’s personal observations revealed that the actual number of suggestions received though the Suggestion Box in the study organizations is quite low. The likely reasons could be the low level of interest among the employees and an improper understanding of the objectives of the Suggestion Box Scheme. It was also observed that the quality of the suggestions received was only fair. Majority of the suggestions were of very routine nature and did not contribute significantly to value-addition. The likely reasons here could be the lack of knowledge about problem-solving techniques as also an inferiority complex among the employees.

In some instances, it was observed that the employees bypass the suggestion box and submit their suggestions directly to the superiors.

6.3 TESTING OF HYPOTHESES

The statistical techniques applied have returned the following results after the testing of the hypotheses.

The following hypotheses, namely:

1. Employee Involvement Scheme play -
   I. “Good” role in the implementation of Clause No.4 of ISO 9000 (Quality Management System);
   II. “Good” role in the implementation of clause No. 5 of ISO 9000 (Management Responsibility);

2. Downward Communication schemes, e.g. Verbal/Non-verbal communication and Departmental Meetings play ‘Excellent’ role in the implementation of ISO 9000;

3. Administrative Managers are of the opinion that EI schemes play “Good” role in the implementation of ISO 9000;

4. Administrative Staff are of the opinion that EI schemes play “Good” role in the implementation of ISO 9000;

stand accepted.

The following hypothesis namely:

1. Employee Involvement (EI) Schemes play “Excellent” role in the overall implementation of ISO 9000 Quality System;

2. If considered separately, Employee Involvement Schemes play-
   I. “Excellent” role in implementation of clause No. 6 of ISO 9000 (Resource management)
II. “Excellent” role in implementation of clause No.7 of ISO 9000 (Product Realization)

III. “Excellent” role in implementation of clause No. 8 of ISO 9000 (Measurement Analysis and Improvement)

3. Among the various schemes-
   I. Upward Problem solving schemes e.g., Suggestion schemes & Quality Circle play “Good” role in implementation of ISO 9000,
   II. Representative Participation schemes e.g., Works Council, Joint Management Council etc. play “Fair” role in implementation of ISO 9000,
   III. Financial Participation Schemes e.g., Bonus, incentives etc. play “Poor” role in implementation of ISO 9000 Quality System.

4. Among the various respondents-
   I. Production Managers are of the opinion that EI schemes play “Excellent” role in implementation of ISO 9000,
   II. Production Workers are of the opinion that EI schemes play “Excellent” role in implementation of ISO 9000.

stand rejected.

6.4 MAJOR SUGGESTIONS

The present investigation, conducted in select engineering industries, has observed certain similarities as well as variations in the opinions of the employees of these industries about the EI practices being followed and their role in the implementation of ISO-9000: 2000 Quality Management System. Accordingly, the major suggestions emerging out of the above conclusions are:

6.4.1 Views of Employee Categories about the Role of EIs in the Implementation of ISO-9000:2000 Quality Management System

Although all the employee categories considered for the present study have expressed the same opinion about the role of EIs by rating them as ‘good’, there is a difference of about 25 percentile points in the prevailing value and the ideal percentile value of 100%. This gap shows that there is a scope for further improvements.

Adoption of newer tools and implementation of newer techniques, either through modification or abandonment of the existing systems, which have been in practice for years together, need a change in the perception. Though the employees in these industries have managed it remarkably so far, with some more effort, the level of agreement can be heightened. The researcher suggests the following points for the consideration of top managements:

1. Sensitize and motivate individuals, especially the managerial cadre, to the strategic importance of quality, the cost of poor quality, and their role in influencing the quality of products. This can be done with the help of special training.
2. Create an environment of self-motivation for the individuals. This can be done by adopting a positive attitude, sharing of goals, developing interesting work situations through job rotation, job enlargement and job enrichment. Regularly celebrating organizational successes and achievements can also contribute to employee motivation.

6.4.2 Role of EIs in the relevant ISO Clauses

Five Clauses of ISO-9000:2000 Quality Management System were considered for the present study and it is revealed that the EIs have played a ‘good’ role in the implementation of each of these Clauses. However, it is also observed that the EIs are rather more effective in the implementation of certain Clauses than the others. Further, the gap between the present rating and ideal rating (100%) emphasizes the need for improvement. The researcher has the following suggestion to offer for improving the performance as regards Clause-7 (Product Realization).

This Clause seeks the fulfillment of the requirements such as understanding and satisfying the customer needs by producing and delivering the product matching to the requirements. Through this Clause, the organization demonstrates its ability to provide a quality product.

The present research has shown that the EI has received a low rating in certain activities, such as understanding customer requirements, designing the procedures for subcontracted/purchased products, handling customer complaints, procedures for handling and storage, servicing, etc., mentioned in this Clause. Activities to increase the awareness and involvement may be carried out in the organization so as to get better results. The employees need to realize that they too can play a significant role in fulfilling customers requirements by understanding them first and then producing the desired results. The management too can make provision for involving the employees by motivating them by various means.

6.4.3 Enhancing the Effectiveness of various EI Schemes

The present research has thrown light on the effectiveness of select EI schemes in the implementation of ISO-9000:2000. The findings show that apart from the downward communication schemes such as Verbal/non-verbal Communication and Departmental Meetings, the effectiveness of other EI schemes is not very satisfactory. Especially the Suggestion Box scheme and Financial Participation schemes have been found to be below average. The researcher submits the following suggestions for improving the effectiveness of the EI schemes.

(1) Training and Development

Increased involvement means more responsibility, which, in turn, requires greater levels of skills. This can be achieved through training. The management may make arrangements to train and develop its employees.

The type and area of training depend upon the needs of the particular organization and may vary. The researcher would suggest that the employees be training in Problem-
solving techniques. Knowledge about the principles of quality management may also be provided, so that every employee shall be better aware of the requirements and what he/she can do.

Such training programmes will help in changing the mindset of the employees towards EI schemes and may also result in more encouragement and involvement. An understanding of the problem-solving techniques will help employees to give logical and practical suggestions.

(2) Publicity and Promotion of Quality Management System

An on-going publicity and promotion of the quality efforts of the organization is very essential and important. Successful projects, suggestions accepted from the employees, new ideas presented by them, etc., must be displayed. This will increase employee’s sense of belonging. These displays must be updated regularly to as to reflect the management’s seriousness about the QMS.

Also, if possible, a Quality Newsletter may be published every month, so as to recognize the efforts contributed by individual employees, work-teams and the management. Publicity about valid suggestions will boost the confidence among the employees about their role in the organization.

(3) Compensation System

Quality Management System emphasizes on flexibility, lateral communication, group effectiveness and responsibility for the entire process that has customer satisfaction as its ultimate objective. The compensation system should be designed in such a way that the employees perceive it to be the organization’s commitment to quality.

(4) Performance Appraisal

Performance appraisal is most effective when it focuses on the organizational objectives and, therefore, on an individual or a group. Since the end-goal of the ISO-9000:2000 Quality Management System is customer satisfaction through quality products, appraisal should relate to this end-goal. Hence, it should be aligned with the principle of shared responsibility for quality.

The system of appraisal should be used to determine reward levels, aid career development such as promotions, and improve communication.

(5) Careful Selection

People well-suited for operating in a quality environment may require additional characteristics, such as attitude, values and analytical ability. They need sharp problem-solving skills, in order to perform the qualitative work demanded by the ISO Quality Management System. Since the emphasis is on team and group processes, employees should function in group settings. Thus, the selection process should note these skill requirements and match them with scientific selection of employees.

Thus concludes the presentation of conclusions and suggestions of this work.