CHAPTER VI

FINDINGS, SUGGESTIONS AND CONCLUSION

This chapter discusses about findings based on the data collection and analysis. Based on that, the researcher put forth the suitable suggestions for better management of organization. Further, conclusion was derived based on that. The statistical analysis lent a hand to the researcher to identify the factors influencing quality circle implementation in manufacturing companies. As the result of that, some suggestions have been given to overcome the issues faced by the companies. This helps the manufacturing companies to flourish in quality circle activities.

6.1 MAJOR FINDINGS

In this research, the practices of quality circle in manufacturing companies were analyzed. In addition to that the researcher has also studied the factors influencing quality circle implementation in manufacturing companies. Finally the relationship between the independent, intervening and dependent variables was studied.

The table 4.1.1 reflects that 80.5 percent are male and 19.5 percent are female. 25.7 percent of the members belong to age group of 26 to 35 years, while 21.9 percent of members belong to age group of 36 to 45 years, 17.6 percent of the members are less than 25 years, 17.6 percent of members belong to age group of 55 and above and 17.1 percent of members belong to age group of 46 to 55 years. The table shows that 84.3 percent members are married, 13.8 percent of the members are single and 1.9 percent belongs to other group. And 53.3 percent are
from nuclear type of family, while 46.7 members are from joint family. The table also inferred that 57.6 percent of members have two dependents, while 22.4 percent of members have three to five dependents and 20 percent have more than six dependents.

Table 4.1.2 inferred that 60.5 percent of members are graduates, 19 percent of members are diploma holders, 17.1 percent of members are post graduates and 3.3 percent are higher secondary. It is also clear from the table that 22.4 percent are employees, 19 percent of members are workers 12.9 of members are technician and 10.5 percent of members are accountant. It is inferred that 46.2 percent of members are working in production department, 15.7 percent of the members are working in quality control, 11.4 percent of members belongs to HR department, 10.5 percent of members belongs to research and development department, while 7.6 are from finance department and 8.6 percent belongs to marketing department. The table also shows and 37.1 percent of members have 11 to 15 years of experience. 32.9 percent of members have more than 15 years of experience, 18.6 percent of the members have 6 to 10 years of experience and 11.4 percent of members have less than 5 years of service.

The results reveal that there is a significant relationship among independent, intervening and dependent variables.

Table 4.5 shows that there was a positive correlation between job involvement of members and quality circle activities with r value 0.159 at 5% level of significance. Result show that if job involvement increases the QC activities will also increase. As per the result the members who is having high
involvement in job will have high level of activities in quality circle, same well as if members is having low level of involvement his activity in QC will also decrease, so there is significant relationship between job involvement and QC activities.

Table 4.5.4 reveals that there is significant positive relationship exist between motivation and quality circle activities. The r value 0.493 at 1 % level of significance. The r value 0.601 at 1 percent level of significance reveals a positive correlation between motivation and performance of members. The r value 0.388 with 1 percent level of significance reveals that when recognition systems increase the quality activities also increase. The r value 0.418 with 1 percent level of significance reveals that when recognition systems increase the members performance in quality circle will also increase. The r value 0.116 with p-value 0.094 reveals that there is no significant relationship between recognition and management support for QCs. The r value 0.265 at 1 percent level of significance reveals that there is significant correlation relationship among training and QCs activities. Result shows that if level of training increases QCs activities will also increase. The r value 0.390 at 1 percent level of significance reveals that there is significant correlation relationship among training and performance in QCs activities increase. The r value -0.057 and p-value 0.409 shows that there is no correlation relationship between training and management support for QCs.

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The table value reveals that there is positive correlation between organisation integration and quality circle activities. The r value 0.414 with 1 percent level of significance reveals that when communication towards organisation integration increase the quality activities also increase. The r value 0.316 with 1 percent level of significance reveals that when communication towards organisation integration increase the members performance in quality circle will also increase. The r value 0.293 with p-value with 1 % level of significance reveals that there positive correlation between organisation integration and management support for QCs.

The table 4.5.4 reveals that there is positive correlation between corporate information and quality circle activities. The r value 0.438 with 1 percent level of significance reveals that when communications towards corporate information increase the quality activities also increase. The r value 0.469 with 1 percent level of significance reveals that when communication towards corporate information increase the members performance in quality circle will also increase. The r value 0.134 with p-value 0.053 indicates that there is no significance relationship between corporate information and management support for QCs.

The table 4.5.4 value reveals that there is positive correlation between communication about personal feedback and quality circle activities. The r value 0.479 with 1 percent level of significance reveals that when communications
towards personal feedback increase the quality activities also increase. The r value 0.511 with 1 percent level of significance reveals that when communication towards personal feedback increase the members performance in quality circle will also increase. The r value 0.149 at 5% level of significance show there is positive relationship between communication towards personal feedback and management support for QCs.

The table 4.5.4 reveals that there is positive correlation between leadership and quality circle activities. The r value 0.467 with 1 percent level of significance reveals that when level of leadership increase the quality activities also increase. The r value 0.458 with 1 percent level of significance reveals that when leadership attitude increase the members performance in quality circle will also increase. The r value 0.197 at 1 percent level of significance show there is positive relationship between leadership and management support for QCs.

Table 4.9.1 indicates that there is positive correlation between QC activities and organization productivity with r value 0.504 at 1 percent level of significance. Result shows that if QC activities increase productivity will also increase. The table value denotes that there is positive correlation between Performance of quality circle members and organization productivity with r value 0.391 at 1 percent level of significance. Result shows that if Performance of quality circle members increases productivity will also increase. It is understood from table 4.9.1 that there positive correlation between management support for QC and organization productivity with r value .346 at 1 percent level of significance. Result shows that if management supports for QC increase productivity will also increase.
From the table it is clear that positive correlation between job involvement and organization productivity with r value 0.215 at 1 percent level of significance. Result shows that if job involvement increase productivity will also increase. From the table it is clear that positive correlation between training and organization productivity with r value 0.444 at 1 percent level of significance. Result shows that if training increase productivity will also increase. From the table it is clear that positive correlation between learning experience and organization productivity with r value 0.260 at 1 percent level of significance. Result shows that if learning experience increase productivity will also increase.

From the table it is clear that positive correlation between leadership and organization productivity with r value 0.315 at 1 percent level of significance. It is clear from table that there is positive correlation between motivation and organization productivity with r value 0.411 at 1 percent level of significance. Result shows that if motivation increases productivity will also increase. From the table it is clear that positive correlation between Organisation integration and organization productivity with r value 0.592 at 1 percent level of significance. Result shows that if Organisation integration increases productivity will also increase. From the table it is clear that positive correlation between corporate information and organization productivity with r value 0.539 at 1 percent level of significance. Result shows that if corporate information increases productivity will also increase. From the table it is clear that positive correlation between Personal feedback and organization productivity with r value 0.350 at 1 percent level of significance. Result shows that if Personal feedbacks increase productivity will also increase. From the table it is clear that positive correlation between
Recognition and organization productivity with $r$ value 0.449 at 1 percent level of significance. Result shows that if Recognition increases productivity will also increase.

Table 4.9.1 indicates that there is positive correlation between QC activities and defects control with $r$ value 0.506 at 1 percent level of significance. Result shows that if QC activities increase defects control will also increase. The table value denotes that there is positive correlation between Performance of quality circle members and defects control with $r$ value 0.397 at 1 percent level of significance. Result shows that if Performance of quality circle members increases defects control will also increase. It is understood from table 4.9.1 that there positive correlation between management support for QC and defects control with $r$ value 0.343 at 1 percent level of significance. Result shows that if management supports for QC increase defects control will also increase.

From the table it is clear that positive correlation between job involvement and defects control with $r$ value .170 at 5% level of significance. Result shows that if job involvement increase defects control will also increase. From the table it is clear that positive correlation between training and defects control with $r$ value 0.379 at 1 percent level of significance. Result shows that if training increase defects control will also increase. From the table it is clear that positive correlation between learning experience and defects control with $r$ value 0.225 at 1 percent level of significance. Result shows that if learning experience increase defects control will also increase. From the table it is clear that positive correlation between leadership and defects control with $r$ value 0.255 at 1 percent level of significance.
From the table it is clear that positive correlation between motivation and defects control with r value 0.363 at 1 percent level of significance. Result shows that if motivation increases defects control will also increase. From the table it is clear that positive correlation between Organisation integration and defects control with r value 0.571 at 1 percent level of significance. Result shows that if Organisation integration increases defects control will also increase. From the table it is clear that positive correlation between corporate information and defects control with r value 0.507 at 1 percent level of significance. Result shows that if corporate information increases defects control will also increase. From the table it is clear that positive correlation between Personal feedback and defects control with r value 0.303 at 1 percent level of significance. Result shows that if Personal feedbacks increase defects control will also increase. From the table it is clear that positive correlation between Recognition and defects control with r value 0.404 at 1 percent level of significance. Result shows that if Recognition increases defects control will also increase.

Table 4.9.1 indicates that there is positive correlation between QC activities and expenditure control with r value 0.501 at 1 percent level of significance. Result shows that if QC activities increase expenditure control will also increase. The table value denotes that there is positive correlation between Performance of quality circle members and expenditure control with r value 0.402 at 1 percent level of significance. Result shows that if Performance of quality circle members increases expenditure control will also increase. It is understood from table 4.9.1 that there positive correlation between management support for QC and expenditure control with r value .327 at 1 percent level of significance.
Result shows that if management supports for QC increase expenditure control will also increase.

From the table it is clear that positive correlation between job involvement and expenditure control with r value 0.212 at 1 percent level of significance. Result shows that if job involvement increase expenditure control will also increase. From the table it is clear that positive correlation between training and expenditure control with r value 0.363 at 1 percent level of significance. Result shows that if training increase expenditure control will also increase. From the table it is clear that positive correlation between learning experience and expenditure control with r value 0.195 at 1 percent level of significance. Result shows that if learning experience increase expenditure control will also increase. From the table it is clear that positive correlation between leadership and expenditure control with r value 0.238 at 1 percent level of significance. From the table it is clear that positive correlation between motivation and defects control with r value 0.375 at 1 percent level of significance. Result shows that if motivation increases expenditure control will also increase. From the table it is clear that positive correlation between Organisation integration and expenditure control with r value 0.558 at 1 percent level of significance. Result shows that if Organisation integration increases expenditure control will also increase.

From the table it is clear that positive correlation between corporate information and expenditure control with r value 0.499 at 1 percent level of significance. Result shows that if corporate information increases expenditure control will also increase. From the table it is clear that positive correlation between Personal feedback and expenditure control with r value 0.319 at 1 percent
level of significance. Result shows that if Personal feedbacks increase productivity will also increase. From the table it is clear that positive correlation between Recognition and expenditure control with r value 0.354 at 1 percent level of significance. Result shows that if Recognition increases expenditure control will also increase.

Table 4.9.2 shows that there was a positive correlation between quality circle activities and Participation in decision making with r value 0.532 at 1 percent level of significance. Result show that if QC activities increase Participation in decision making will also increase. The table value reveals that there is positive correlation between Participation in decision making and performance of QC members. The r value 0.437 with 1 percent level of significance reveals that when the members performance in quality circle increase Participation in decision making will also increase. The r value 0.334 at 1 percent level of significance reveals positive relationship between Participation in decision making and management support for QC. From the table it is clear that there is no correlation between job involvement and participation in decision making with r value 0.001. From the table it is clear that positive correlation between training and participation in decision making with r value 0.602 at 1 percent level of significance. Result shows that if training increase participation in decision making will also increase.

From the table it is clear that positive correlation exist between learning experience and participation in decision making with r value 0.404 at 1 percent level of significance. Result shows that if learning experience increase participation in decision making will also increase. From the table it is clear that
there is positive correlation between leadership and participation in decision making with r value 0.414 at 1 percent level. Result shows that if leadership increases participation in decision making will also increase. From the table it is clear that positive correlation between motivation and participation in decision making with r value 0.529 at 1 percent level of significance. Result shows that if motivation increases participation in decision making will also increase. From the table it is clear that positive correlation between Organisation integration and participation in decision making with r value 0.751 at 1 percent level of significance. Result shows that if Organisation integration increases participation in decision making will also increase. From the table it is clear that positive correlation between corporate information and participation in decision making with r value 0.757 at 1 percent level of significance. Result shows that if corporate information increases participation in decision making will also increase.

From the table it is clear that positive correlation between Personal feedback and participation in decision making with r value 0.494 at 1 percent level of significance. Result shows that if Personal feedbacks increase participation in decision making will also increase. From the table it is clear that positive correlation between Recognition and participation in decision making with r value 0.818 at 1 percent level of significance. Result shows that if Recognition increases participation in decision making will also increases. The results reveal that there is a significant difference between demographic variables between quality circle activities, performance of members, management support for QC, productivity, defects control in production and expenditure control in production.
The table 4.4.1 indicates the average QCs activity score has been 26.05, 26.40, 26.58, 25.66, 25.58, 25.66 and 25.94 respectively for the age group of less than 25 years, 26 to 35 years, 36 to 45 years, 46 to 55 years, 55 and above. One way ANOVA test has been applied to compare the above five mean values. The non significant p-value infers that mean score of QCs activity has been similar for all age groups. The average QCs activity score has been 21.71, 23.42, 26.62 and 28.52 respectively for educational qualification higher secondary, diploma, graduates and post graduates. ANOVA test has been performed and result shows a significant outcome (F value =28.890; p-value = <0.001). That is performance of members differ significantly with respect to their educational qualification. Scheffe multiple comparison test that among other level of educational qualification higher secondary and diploma holders were performing less when compare to graduates and post graduates towards quality circle activities.

The mean value has been 28.52, 26.80, 26.76, 26.00, 26.41 and 23.32 for designation managers, engineers, supervisor, accountant, technician and employee ANOVA test were applied to compare the mean value. The significant p-value infers that mean score of QCs activity differs by designation of members. Scheffe multiple comparison test reveals that employee activity in QCs is less when compare to other level of designations. The average QCs activity score has been 26.41, 26.36, 26.00, 24.06, 26.70 and 25.94 respectively for the department production, quality control, RD, Finance, HR and marketing. One way ANOVA test were applied to compare the above six mean value. The Non-significant p-value infers that the mean QCs activity score has been similar for all departments. The frequent relation, respectively to experience less than 5 years,
6 to 10 yrs, 11 to 15 yrs and more than 15 years with mean value 23.45, 25.17, 26.46 and 27.36. ANOVA test were applied to determine whether there is any mean difference in mean value by experience, p-value reveals that there is significance and also disclose that quality circle activity is differ by experience of members. To find the mean difference Scheffe multiple comparison test have been applied and result shows that below 5 years experience is performing less in QCs activities when compare to others.

The influences of age on members performance in QCs is given in the above table. ANOVA test has been performed and result shows a significant outcome (f value = 5.321; p-value = <0.001). That is performance of members differ significantly with respect to their age. In order to find out the mean difference, scheffe multiple comparison test has been performed and the result shows that among different age groups, members between 26 to 45 years of age are performing more when compare to other age group. The table 4.4.2 reveals the influences of education qualification on members performance in quality circle activities. ANOVA test has been performed and result shows a significant outcome (F value = 33.644; p-value = <0.001). That is performance of members differ significantly with respect to their educational qualification. In order to find out the mean difference, scheffe multiple comparison test has been performed and the result shows that among other level of educational qualification higher secondary and diploma holders were performing less when compare to graduates and post graduates towards quality circle.

The influence of designation on performance of members in quality circle is given above the table 4.4.2. ANOVA test has been performed and result shows
(F value = 19.971; p-value = 0.099) which is significant and its shows that there is variation in members performance based on their designation. In order to find out the mean difference, scheffe multiple comparison test has been performed and the result shows accountant and technician were performing less when compare to other designation. ANOVA test has been performed to determine the influence of department on performance of members in QCs and result shows (F value = 2.464; p-value = 0.034) which is significant and its shows that there is variation in performance of members in quality circle activity based on department.

The table 4.4.2 also expose the influences of experience on performance of members in QCs. ANOVA test has been performed to determine the influence of experience on performance of members in QCs. The result shows a significant outcome (F = 12.228; p = <0.001). It indicates that performance of members in QCs differs significantly with respect to experience of members. In order to find out the mean difference Scheffe multiple comparison test has been applied and the result shows that among different experience levels member above 15 years of experience are influencing performance of members in QCs when compare to other levels of experience.

The table 4.4.3 reveals that the average management support for QCs activities score has been 9.32, 9.22, 8.95, 9.19 and 10.62 respectively for the age group of less than 25 years, 26 to 35 years, 36 to 45 years, 46 to 55 years, 55 and above. ANOVA test applied to compare the above five mean values. The significant p-value reveals that opinion about management support for QCs differs by age of members. In order to know which of age group differs scheffe multiple comparison test have been applied, results indicates that above 55 years old
members agree that management support QCs activities when compare to other age group. The average management support for QCs activities score has been 8.28, 8.25, 9.94 and 9.11 respectively for qualification of members higher secondary, diploma, graduates and post graduates. ANOVA test has been applied to compare the above four mean values. Significant p-value reveals that acceptance for management support for QCs differs by education of members. In order to know which of group differs scheffe multiple comparison test has been applied. Result indicates that higher secondary and diploma holders have less opinion about management support for quality circle.

The mean value has been 9.11, 10.02, 10.21, 9.00, 9.81 and 8.48 respectively for designation managers, engineers, supervisor, accountant, technician and employee ANOVA test were applied to compare the above mean value. Significant p-value reveals that acceptance of management support for QCs differ by designation. In order to know which of group differs scheffe multiple comparison test have been applied and result shows that employees less acceptance towards the management support for QCs activities. The average management support for QCs score has been 9.65, 9.45, 8.95, 9.25, 9.25 and 9.11 respectively for the department production, quality control, RD, Finance, HR and marketing. One way ANOVA test were applied to compare the above six mean value. The Non-significant p-value infers that the mean QCs activity score has been similar for all departments. The frequent relation respectively for experience less than 5 years, 6 to 10 yrs, 11 to 15 yrs and more than 15 years with mean value 8.37, 8.87, 10.10 and 9.33 respectively. ANOVA test were applied to determine difference in mean value by experience, p-value reveals that there is significance
difference and also disclose that members between 0 to 10 years of experience have less acceptance with regards to management support for quality circle activities.

Mean value of the QCs activities are 25.71, 25.55, 29.08 and 26.17 respectively for duration of membership in quality circle are1 to 3 months, 3 to 6 months, 6 to 1 year and more than 1 year. ANOVA test applied to determine whether average mean value of quality circle activities differ by duration of membership. Significant p-value reveals that a QCs activity differs by duration of membership in QCs. In order to know which group differs scheffe multiple comparison test have been applied, results indicates members who were between 1 to 3 months are weakly involved in QCs activities.

Mean value of the performance of QCs members are 14.11, 16.94, 18.88 and 17.05 respectively for duration of membership in quality circle are1 to 3 months, 3 to 6 months, 6 to 1 year and more than 1 year. ANOVA test applied to determine whether average mean value of performance of members in quality circle differ by duration of membership. Significant p-value reveals that a members performance differs by duration of membership in QCs. In order to know which group differs scheffe multiple comparison test have been applied, results indicates that members between 1 to 3 months of membership are performing less when compare to other duration of membership.

Mean value of the management support for QCs activities are 8.60, 8.61, 10.2 and 9.91 respectively for duration of membership in quality circle are1 to 3 months, 3 to 6 months, 6 to 1 year and more than 1 year. ANOVA test applied to determine whether average mean value of management support for QCs differ by
duration of membership. Significant p-value reveals that management support for QCs differs by duration of membership in QCs. In order to know which group differs scheffe multiple comparison tests have been applied, results indicates that members with 1 to 6 month of duration have less opinion about management support for QCs.

The influence of age on productivity of organisation is given above the table 4.8.1. ANOVA test has been performed and result shows (F value = 1.977; p-value = 0.099) which is not significant and its shows that there is no variation in productivity of organization based on age group. Table 4.8.1 reveals the result of influences of educational qualification on organization productivity. ANOVA test has been performed to determine the influence of educational qualification on productivity. The result shows a significant outcome (F = 141.44; p = <0.001). It indicates that productivity differs significantly with respect to qualification of members. In order to find out the mean difference Scheffe multiple comparison test has been applied and the result shows that among different education levels graduates and post graduates were influencing productivity when compare to other levels of education.

The result of table 4.8.1 indicates the influences of designations on organization productivity. ANOVA test performed for this variable reveals a significant outcome (F = 74.318; p = <0.001). It shows that productivity differs by designation of members and Scheffe multiple comparison test have been applied to find the mean difference, the result shows that employees performance is less when compare to other designation towards productivity. The influence of department on productivity of organisation is given above the table 4.8.1. ANOVA test has been performed and result shows (F value = 1.453; p-value = 0.207) which is not
significant and its shows that there is no variation in productivity of organization based on department. The table 4.8.1 also expose the influences of experience on productivity. ANOVA test has been performed to determine the influence of experience on productivity. The result shows a significant outcome (F = 49.469; p = 0.000). It indicates that productivity differs significantly with respect to experience of members. In order to find out the mean difference Scheffe multiple comparison test has been applied and the result shows that among different experience levels member less than five years of experience poorly influencing productivity when compare to other levels of experience.

Table 4.8.2 expose the result of influence of age on defects control on production of organisation. ANOVA test has been performed and result shows (F value = 0.931; p-value = 0.447) which is not significant and its shows that there is no variation in defects control in production of organization based on age group. Table 4.8.2 reveals the result of influences of educational qualification on defects control. ANOVA test has been performed to determine the influence of educational qualification on defect control in production process. The result shows a significant outcome (F = 56.928; p = <0.001). It indicates that defects control differs significantly with respect to qualification of members. In order to find out the mean difference Scheffe multiple comparison test has been applied and the result shows that among different education levels higher secondary and diploma holders were imperceptibly controlling defects in production when compare to other levels.

The result of table 4.8.2 indicates the influences of designations on defects control. ANOVA test performed for this variable, reveals a significant outcome
(F = 27.263; p = <0.001). Scheffé multiple comparison test have been applied to find the mean difference, the result shows that employees were poorly controlling defects when compare to other designation. The influence of department on defects control in production of organisation is given above the table 4.8.3. ANOVA test has been performed and result shows (F value = 2.991; p-value = 0.013) which is significant and the result of Scheffé multiple comparison test shows that marketing department poorly controlling the defects. The table 4.8.2 also expose the influences of defects control on production. ANOVA test has been performed to determine the influence of experience on defect control. The result shows a significant outcome (F = 18.865; p = <0.001). It indicates that productivity differs significantly with respect to experience of members. In order to find out the mean difference Scheffé multiple comparison test has been applied and the result shows that among different experience levels member less than 5 years of experience were not influencing defects control in production when compare to other levels of experience.

Table 4.8.3 expose the result of influence of age on expenditure control on production of organisation. ANOVA test has been performed and result shows (F value = 0.931; p-value = 0.447) which is not significant and its shows that there is no variation in expenditures control in production of organization based on age group. Table 4.8.3 reveals the result of influences of educational qualification on expenditures control. ANOVA test has been performed to determine the influence of educational qualification on expenditure control in production process. The result shows a significant outcome (F = 56.928; p = <0.001). It indicates that expenditures control differs significantly with respect to qualification of members.
In order to find out the mean difference Scheffe multiple comparison test has been applied and the result shows that among different education levels graduates and post graduates were controlling expenditures in production when compare to other levels.

The result of table 4.8.3 indicates the influences of designations on expenditures control. ANOVA test performed for this variable, reveals a significant outcome \(F = 27.263; p = <0.001\). It shows that expenditures control differs by designation of members and Scheffe multiple comparison test have been applied to find the mean difference, the result shows that employees were not influencing expenditure control when compare to other designation. The influence of department on expenditures control in production of organisation is given above the table 4.8.3. ANOVA test has been performed and result shows \(F\) value \(= 2.991; p\)-value \(= 0.013\) which is significant and its shows that there is variation in expenditures control based on department. Scheffe multiple comparison test have been applied to find the mean difference, the result shows that marketing department poorly controlling the expenditure when compare to other department. The table 4.8.3 also expose the influences of expenditures control on production. ANOVA test has been performed to determine the influence of experience on expenditure control. The result shows a significant outcome \(F = 18.865; p = <0.001\). It indicates that productivity differs significantly with respect to experience of members. In order to find out the mean difference Scheffe multiple comparison test has been applied and the result shows that among different experience levels member with below 5 years experience are weakly influencing expenditures control in production when compare to other levels of experience.
Stepwise regression analysis reveals significant variable influencing intervening and dependent variable.

A stepwise multiple regressions have been applied to predict the quality circle activities among members in manufacturing companies for that following eight variables have been selected motivation, recognition training and learning experience, communication dimension and leadership. Though correlation coefficient reveal positive relationship between selected eight variable, the step wise regression reveals that among eight variables the following four variables identified as most significant variables which has influenced quality circle activities. Among four variables the foremost variable is communications about personal feedback, leadership is second variable, corporate information is third and training is fourth variable. The overall $R^2$ found to be 0.367 that is 37 percent of variation in quality circle activities has been explained by these four independent.

A stepwise multiple regressions have been applied to predict the performance of quality circle members in manufacturing companies for that following eight variables have been selected motivation, recognition, training, learning experience, communication and leadership. Though correlation coefficient reveal positive relationship between selected eight variable, the step wise regression reveals that among eight variables the following four variables identified as most significant variables which has influenced members performance of quality circle. Among four variables, the foremost variable is motivation, corporate information is second variable, organisation integration is third variable and communication about personal feedback is fourth variable. The
overall $R^2$ found to be 0.483 that is 48 percent of variation in performance of quality circle has been explained by these four variable independent variables.

A stepwise multiple regressions have been applied to predict the management support for QC in manufacturing companies for that following eight variables have been selected motivation, recognition, training, learning experience, communication and leadership. Though correlation coefficient reveal positive relationship between selected eight variable, the step wise regression reveals that among eight variables the following four variables identified as most significant variables which has influenced management support for QC. Among four variables, the foremost variable is organization integration, training is second variable, leadership and motivation is fourth variable. The overall $R^2$ found to be 0.287 that is 29 percent of variation in management support for quality circle has been explained by these four variable independent variables.

A stepwise multiple regression have been applied to predict the organization productivity among members in manufacturing companies for that following twelve variables have been selected QC activities, Performance of quality circle, Management support for QC, Job involvement, training, Learning experience, leadership, motivation, Organisation integration, Corporate information, Personal feedback and recognition. Though correlation coefficient reveals positive relationship between selected twelve variables, the stepwise regression reveals that among twelve factors the following four variables identified as most significant variables which influence the organization productivity are organization integration, QC activities, involvement and personal
feedback. The overall $R^2$ found to be 0.464 that is 46 percent of variation has been explained by these four independent variables.

A stepwise multiple regression have been applied to predict the defects control in production among members in manufacturing companies for that following twelve variables have been selected QC activities, Performance of quality circle, Management support for QC, Job involvement, training, Learning experience, leadership, motivation, Organisation integration, Corporate information, Personal feedback and recognition. Though correlation coefficient reveals positive relationship between selected twelve variables, the stepwise regression reveals that among twelve factors the following four variables identified as most significant variables which influence the defects control are organization integration, QC activities, personal feedback and involvement. The overall $R^2$ found to be 0.450 that is 45 percent of variation has been explained by these four independent variables.

A stepwise multiple regression have been applied to predict the expenditure control in production among members in manufacturing companies for that following twelve variables have been selected QC activities, Performance of quality circle, Management support for QC, Job involvement, training, Learning experience, leadership, motivation, Organisation integration, Corporate information, Personal feedback and recognition. Though correlation coefficient reveals positive relationship between selected twelve variables, the stepwise regression reveals that among twelve factors the following five variables identified as most significant variables which influence the expenditure control in production are organization integration, QC activities, learning experience,
involvement and personal feedback. The overall $R^2$ found to be .451 that is 45 percent of variation has been explained by these five independent variables.

A stepwise multiple regression have been applied to predict the participation in decision making among members in manufacturing companies for that following twelve variables have been selected QC activities, Performance of quality circle, Management support for QC, Job involvement, training, Learning experience, leadership, motivation, Organisation integration, Corporate information, Personal feedback and recognition. Though correlation coefficient reveals positive relationship between selected twelve variables, the stepwise regression reveals that among twelve factors the following nine variables identified as most significant variables which influence the participation in decision making are recognition, management support for QC, corporate information, learning experience, involvement, leadership, organization integration, QC activities and personal feedback. The overall $R^2$ found to be 0.807 that is 80 percent of variation has been explained by these nine independent variables.

6.2 SUGGESTIONS

To maintain the high level of job involvement management should encourage members to take part in work related activities success as taking part in management decision making, solving work related issues within themselves or make them to involve in team work. Further it increases organisation and individual performance of concern. It was highlighted that by giving members power over their work content i.e. decision regarding swiftness of work, quality of product and job related abilities and resources can motivate the members to
enhance their job involvement. So job involvement not only depends on members personal interest on job, it also depends on situational variables i.e. management support, job satisfaction, commitment and participation.

A good training motivates worker contribution and promotes capabilities of employees. Training provided in QC's enable employees to develop skills and contribute in innovative ways. Generally the more training received, the higher the workers ability to solve problems. It also develops positive attitudes among employees. Participants in the QC's must be well trained in group dynamic and problem solving methods that are part of the QC technology. Organization has to provide need based training for its members. Leadership places one of the prominent roles in QC activities. Since the success of the quality circles predominantly depend upon how well the leader leads the group. Significance and perception of training with good leadership qualities are the success of quality circle in any organization. So QC needs leaders, who encourage the members in performing QC activities.

Research into job redesign and goal setting theory has shown the value of incorporating more challenge and responsibility into jobs, with subsequently improves motivation and performance. And such changes have to be made in consultation with members, rather than imposed from top management, in order to be effective.

Employees respond to appreciation expressed through recognition of their good work because it confirms their work is valued. When employees and their work are valued, their satisfaction and productivity rises, and they are motivated to maintain or improve their good work.
Quality circle implementation is influenced by demographic and independent variables. QCs with independent variables have great impact on outcome variables such as productivity, cost reduction and commitment, participation in decision making and other variables. Based on analysis few suggestions have been discussed.

To bring equal participation in QCs activities, members with higher secondary level of education and diploma holders have to be given more orientation and training about QCs and its impact on organization and individual performance. The members should also be recognized for their performance. This will motivate them to perform equally with members of higher level of education. Employee should be motivated towards QCs dimension and outcome variables. They might be interestingly participating towards productivity and QCs dimension. To motivate all departments to involve in QCs training related to quality circle have to be provided for all departments. To make members of less than five years to involve, the fear in participation has to be eliminated from them by allotting new projects and work, when complete independence is given to these members, there performance will also improve consistently. The members should be retained with high involvement job to actively participate in quality circle activities.

Productivity increases when employees are satisfied with their jobs and with the level of communication receive from management. Effective communication has a direct impact on morale as well, which ultimately affects productivity. When employees receive regular feedback on their performance, and
corporate information and individual role played in the overall success of the business, they will reward working harder and more efficiently.

Encouraging participation of members in QC's activity will help management to control cost in production, it will also leads to improve quality of product and productivity of organization.

6.3 CONCLUSION

The major focus of this research is based on practices of QC's in manufacturing companies, issues for implementation of quality circles and suggestion for manufacturing companies to make QC's practices effective in their concern. Result reveals that there is significant relationship between independent variable, intervening variable and outcome variable. It is also noted that QC activity, performance of QC members, Management support, productivity and cost reduction were influenced by demographic variables. Job involvement and quality circle activities and performance of QC member is having positive relationship. Among selected independent variable, Motivation, training, communication and leadership are significant contributors of QC's activity, performance of QC's members and management support. It is noted that organizational variable productivity, cost reduction, quality of product and innovation was highly influenced by QC's activity, performance of QC members, job involvement, training, leadership, communication and recognition. It also observed from the study that QC's activity, performance of QC members, job involvement, training, leadership, communication, motivation and recognition were significant contributors of individual variables. The study implies that quality circle practices
in manufacturing companies can be improved through training, motivation, communication, leadership and recognition and this will lead to improvement in production, control defects and expenditure in production, quality of product will be improved and members will become innovative in their work performance. Therefore, the systematic practices of quality circle in manufacturing companies improve organization and individual performance. Since the practice of QC is economical it also can be adopted for small and medium scale manufacturing companies. It is hoped that information accumulated from this research will elicit more studies to be conducted in manufacturing companies and create awareness to other industries to implement quality circle practices.

**MANAGERIAL IMPLICATIONS**

The vibrant of global business era leads to aggressive competition and its pave the way for collective participation of management and employee to succeed in global market. Universally it is accepted that, Human Resource Management is measured as valuable asset in any business to retain employees and attain global competition, HR is also utilized to maximum possible extend in order to achieve individual and organizational goals. The main findings of this research reveal that quality circle is successful in manufacturing companies when it is practiced systematically.

In today’s economic world, the manufacturing companies were expected contribute both for GDP and succeed in global market. The outcome of the study will provide guidelines for managers to succeed in market by improving
performance of organization and individuals through the practice of quality circle in manufacturing companies.

This research has the practical implication for managers as it provides a mean to the manufacturing companies to assess the training, motivation, job involvement, leadership, communication and recognition in implementing quality circle in manufacturing companies. This will lead to successful implementation of quality circle in their organization. The benefit of QCs can be seen in short term and it will sustained for long term when it practiced continuously.

They employee from all level of age, education, designation, department and experience have to be equally encouraged and trained towards QC activities. This will lead to improve opinion and performance of QC among members in manufacturing companies.

The success of QCs concept leads to improvement in organisation performance and individual performance. This will encourage management to support QCs concept in manufacturing companies.

Commitment and support from top management combined with support of leaders will motivate QC members to actively participate in QC activities. And this will improve job satisfaction, morale, commitment and participation in decision making of QC members in manufacturing companies.

It is considered that when training regarding QCs technique is provided, further it leads to improvement in organization productivity and also control
defects, expenditure in production. In addition when members were recognized for their performance it also encourages them to increase organization performance.

It should be noted that QCs practices in manufacturing has significant and positive impact on individual and organisation performance. QCs success can be sustain if the system practiced systematically.

**RECOMMENDATIONS FOR FUTURE RESEARCH**

The present study has been concentrated on the practices of quality circle with its implementation issues in manufacturing companies. Future studies may need to expand to cover all other categories of industry such as construction, electronic and service industry rather than limiting them to the manufacturing companies.

The current study has suggested and generalized for companies operating QCs in Tamilnadu under QCFI of Chennai and Madurai chapter. The study may be extended to other chapters of QCFI in various places.

A comparison study of quality circle within different companies of manufacturing industries can be studied.

An econometric study with quantitative data collected for long period of time can be studied both in manufacturing and service industries. It should be studied as a scope for future study.