The Study about Influences of Quality Circle Activities on Productivity and Innovation in Manufacturing Companies

* Dr. S. Subbulakshmi
Asst Professor, Dept of Business Administration, Government Arts College, Chidambaram
subbumohan23@gmail.com

Abstract - The globalization in India fetched the preface of foreign products of better quality and competitive pricing. It gave rise to the need of change in the structure as well as practices of Indian industries. The structures of industries expect the support of technical and human resources. There are numerous systems to operate technology but utilization of human resources is considered as valuable assets in business to attain globalization. Human resources can be effectively utilized through participative management and this could be achieved by implementing quality circle in organization. The purpose of this study is to know the influence of quality circle activities on productivity and innovation in manufacturing companies. To proceed with the study, standard questionnaire was designed and data collected from members of quality circle in eighteen manufacturing companies. The data were analyzed through Pearson correlation and regression analysis. Results emerging from the analysis show that innovation and productivity are having significant and positive relationship with quality circle activities. Finally the article furnishes few implications to progress quality circle activities, innovation and productivity.

Keywords: Participative management, Quality circle activities, innovation, productivity and Manufacturing companies.

I. INTRODUCTION

After twenty-three years of globalization, there have been indeed various changes in the Indian manufacturing sector for increasing productivity and compete with the foreign competitors. Also the success of manufacturing companies depends on entrepreneurs and employees' skill, innovation and technology. In order to succeed in globalized market manufacturing companies has to involve skills of employee, adapt technology and improve their innovation. And this can be made possible through implementing participative management. This can be conveniently practiced through quality circle activities. A quality circle is a volunteer group composed of workers, usually under the leadership of their supervisor, who are trained to identify, analyze and solve work-related problems and present their solutions to management in order to improve the performance of the organization. Successful quality circle help in upholding the morale, team spirit and participative partnership of the employees of organization, a visible and real support of organization is required to continue the quality circle process. It is observed that effective and efficient output from QCs improves the overall output of the organization in terms of production, manpower and quality of work life. Productivity is the effective use of innovation and resources to increase the value-added content of products and services. Gates and Cooksey, (1998) reveals that “innovation is the process of being creative and implementing new methods to organize or run a company and create improved results”.

There are many studies related to outcomes of quality circle and this study specifically tries to identify personal benefits of organization through practice of quality circle in manufacturing companies. Though organizations have many benefits through practice of QCs, the researcher has identified innovation and productivity as most important benefits. Further, the researcher made an attempt to test their relationship with quality circle activities in manufacturing companies.

II. REVIEW OF LITERATURE

Before exploring the relationship between SMEs productivity, innovation and quality circle activities, a brief review related to SMEs productivity, innovation and quality circle activities were arranged in order.

Quality circle activities

T. R. Abo-Alhol (2005) Quality Circle (QC) proponents suggest a wide array of positive results when this participation technique is used in manufacturing or in-service sector. Results showed that Industrial QCs members were more enthusiastic than service QCs members in terms of involvement in QCs activities and showed higher job satisfaction and job commitment compared to members in service organizations.

IJSRCSAMS

Volume 7, Issue 5 (September 2018)
M.Y. Ismail (2006) this study investigates change in employee attitude brought about through participation in quality circle. Result show that QC's develop positive attitude among employees who derive job satisfaction when they feel that their companies are good place to work and consequently, more willing to extend their efforts for their companies.

**Innovation**

Daniel I. Prajogo (2006) has revealed in his study that there is no significant difference between manufacturing and service firms in both product and process innovation performance. It also indicated that strong correlation existed between innovation and business performance.

Ken Kitazawa (2012) the research analysed the organisational factors of creating innovation focusing on quality control circle (QCC) based on literature-based analysis, interviews and quantitative analysis. The result of analysis have revealed that terms of members' diversity and motivation across-organisational QCC's activities have created innovations through promoting effective.

**Productivity**

Bjorne Grimrsrud et.al., (2003) empirical work indicates that a combination of involvement, partaking in decisions and economic rewards are required for employee participation to significant influencing productivity.

Samad Ranjbar (2011) this survey explores the relationship between participative management and productivity of the employees. The result of research hypothesis test show that there is meaningful relationship between participative management along with its element (autonomy, participation in decision making, objective by group, organisation shift and changing participation in problem solving) and capital of personnel’s productivity in this organisation.

**III. RESEARCH METHODOLOGY**

**Objectives of the study**

- To determine the relationship between quality circle activities, innovation and productivity in manufacturing companies
- To study the impact of quality circle activities on innovation and productivity of manufacturing companies.

**Hypothesis**

- There is no positive relationship between quality circle activities and innovation
- Quality circle activities have no significant relationship on innovation and productivity.

**Sampling technique:** The researcher has chosen convenience sampling technique, since it is easiest technique to reach the population.

**Sampling size:** Two hundred and ten members of quality circle from eighteen manufacturing companies have chosen for this study.

**Data collection:** The data are collected from both primary and secondary sources. Primary data are collected through standard questionnaire and the secondary data is collected from books, magazines, and websites etc.

**Research instruments:** Three variables quality circle activities, innovation and productivity have been used by the researcher. To measure quality circles activities questionnaire framed of Lee l.Shaw (1988) were used. To measure innovation questionnaire developed by Rogers, Milesand Biggs (1980) were used.

**Statistical tools:** Multiple Regression analysis and correlations have been used to test theraised hypothesis.

**IV. RESULT AND DISCUSSION**

This section will emphasize and examine about the results and finding of the study. The purpose of this study is to determine the impact of quality circle activities on innovation and productivity in manufacturing companies. Results emerging from analysis show that there are significant influence of QC activities on innovation and productivity. The following table and its result will reveal the relationship between selected variables.

**Demographic variables**

For this study data were collected from members of quality circles in manufacturing companies, initially in this data analysis, 80.5 percent of the population are male and 25.7 percent of members are in the age group of 26 to 35 years. 41.4 percent members are graduates and 34.8 percent members are working as managers. 46.2 percent members are from production department and 33.8 percent members are having more than 15 years of experience.

**TABLE-1: DESCRIPTIVE STATISTICS FOR MOTIVATION, QC ACTIVITIES AND QUALITY OF PRODUCT**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Low level</th>
<th>Moderate level</th>
<th>High level</th>
<th>Mean</th>
<th>S.D</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
<td></td>
</tr>
<tr>
<td>Quality circle activities</td>
<td>5</td>
<td>11.9</td>
<td>156</td>
<td>74.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>29</td>
<td>13.8</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>26.17</td>
<td>3.28</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

IJSRCSAMS

Volume 7, Issue 5 (September 2018) www.ijsrksam.com
The table 1 explains about descriptive statistics of selected variables from the result it is represented that 74.3 percent of the members accept that moderate level quality circle activities is practised in their organisation. Since performance of quality circle and management support are moderate quality activities of organisation is also moderate. When there is improvement in performance and management support for quality circle, the activities of quality circle will be improved consistently. Many research have Revealed that first top-management support is the biggest single factor in helping to ensure the success of quality circles. Second education and training in quality-circle techniques are also important. Third point to remember is Creating awareness among management and employees of the organizational is considered importance of quality circles to success. The previous research also reveals that quality circles can boost employees' sense of self-worth. Which is important in describes the successful adoption and implementation of quality circles in a manufacturing firm. From the table it is clear that 71 percent of members accept that productivity increase moderately with 11.04, 2.35 mean and S.D values respectively. And 77 percent moderately accepts that there is innovation in their way of thinking towards organisation growth.

**TABLE – 2: PEARSON CORRELATION AMONG QUALITY CIRCLE ACTIVITIES, INNOVATION AND PRODUCTIVITY**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Quality circle activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Innovation</td>
<td>.486*</td>
</tr>
<tr>
<td>Productivity</td>
<td>.455*</td>
</tr>
</tbody>
</table>

*Correlation is significant at the 0.01 level (2-tailed)*

Table 2 reveals that there is significant positive relationship exist between quality circle activities and innovation. The r value 0.486 at 1% level of significance shows that if quality circle activities increase the innovation will also increaseJain (2001) revealed that ultimately quality circles will lead to improved performance. Developing creativity and an innovative spirit, also Inspire team work and develops harmonious relations. This result was synchronized with the result of Ken Kitazawa (2012) who revealed in his study that term of members’ diversity and motivation across-organisational QCC’s activities have created innovations through promoting effective.

**TABLE – 3: MULTIPLICATION REGRESSION ANALYSIS FOR MOTIVATION, QUALITY CIRCLE ACTIVITIES AND QUALITY**

<table>
<thead>
<tr>
<th>S.No</th>
<th>Variables</th>
<th>Quality circle activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>constant</td>
<td>15.889</td>
</tr>
<tr>
<td>1.</td>
<td>Innovation</td>
<td>-0.22</td>
</tr>
<tr>
<td>2.</td>
<td>Productivity</td>
<td>.771</td>
</tr>
</tbody>
</table>

Dependent variable: Quality circle activities

Multiple regressions have been applied to predict the quality circle activities in manufacturing companies for two variables innovation and productivity. Though correlation coefficients reveal positive relationship between selected variables, the regression analysis reveals that among two variables the most significant variable which influences quality circle activities is productivity and second variable is innovation. The overall R2 found to be .271 that is 27 percent of variation in quality circle activities has been explained by these two variables. Shantanu Kulkarni et.al, (2017) have revealed in his study that by solving the problems and also making desirable improvements, quality circles contribute in increasing the quality, productivity and safety of the operations. More importantly the workers develop a positive and problem solving attitude by participating in the QC activities and derive more job satisfaction. Anand Jayakumar et.al,(2015) in his study exposed that organizations are actively trying to involve grass
The relationship, Kumar A, Dr C Krishnaraj ed by the study of ons from China and productivity in manufacturing companies. Circle activities have greater impact on innovation productivity. Finally, the result shows that quality members are more creative and to improve the l of high satisfaction in the work they perform. And taken by circle and providing due recognition for quality circle activities and management need to support the result that members are willing to participate in manufacturing companies. It is also found from the result that members are willing to participate in QCs activities and management needed to support quality circle activities by implementing suggestion taken by circle and providing due recognition for their contribution so that members will get the feel of high satisfaction in the work they perform. And organization has to provide training and update the latest technology of manufacturing to make the members more creative and to improve the productivity. Finally, the result shows that quality circle activities have greater impact on innovation and productivity in manufacturing companies.

V. CONCLUSION

The findings of the study interpret that productivity and innovation have positive and significant relationship with quality circle activities. Through regression analysis, it is implied that 27 percent variation in QC activities were explained by these individual variables. The result of the study suggested that members believed participation in quality circles activities has resulted in improving productivity and innovation in manufacturing companies. It is also found from the result that members are willing to participate in QCs activities and management needed to support quality circle activities by implementing suggestion taken by circle and providing due recognition for their contribution so that members will get the feel of high satisfaction in the work they perform. And organization has to provide training and update the latest technology of manufacturing to make the members more creative and to improve the productivity. Finally, the result shows that quality circle activities have greater impact on innovation and productivity in manufacturing companies.

REFERENCE


