A study about Innovative Approaches in Manufacturing Companies through Quality Circle Activities

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ABSTRACT

In our country we need a technique which can be easily implemented, economically and productively. It has to be accepted by all groups of people in manufacturing companies. Also we have to consider that the need for businesses to improve quality of services is no longer an option but a necessity. Since the early 1960’s business across the globe have been searching for innovative ways to improve overall operational efficiency. Quality circle is the innovative techniques in manufacturing industries; some organisations have successfully implemented the use of quality circles as part of an ongoing improvement programme. Others have experimented with quality circles with best intentions and faced several obstacles, but what is true is that this type of participatory management brings several benefits to all concerned if it is practised effectively. The main purpose of the study is to analyse the QC activities and to find the influence of demographic variable on QC activities. The researcher have collected data from QC members in manufacturing companies and used one way- ANOVA test to analyses the data. Also suggested techniques to utilize QC members’ effectively in QC activities of manufacturing companies.

Keywords: Quality circle, Manufacturing companies, Participatory management, Organisation, Operational efficiency.

Introduction

The globalisation environment is transforming both human life style and industrial scenario. To establish industries in this competitive market they need a technique with least cost of implementation and productive in nature. Also we have to consider that the need for businesses to improve quality of services is no longer an option but a necessity. So they need the support of technology and human resources. There are numerous systems to operate technology, but the issue is effective utilization of human resources. And this can be
effectively utilized through participative management and this could be achieved by implementing quality circle in organisation. Chase (1983) defines it as a “a participative management tool designed to systematically harness the brain-power of employees to solve an organization’s problem of productivity and quality.” Successful quality circle help in maintenance of morale, team spirit and participative partnership of the employees and organization, a visible and real support of organization is required to continue the quality circle process. It is experimented that effective and efficient output from QC's improves the overall output of the organization in terms of production, manpower and quality of work life.

There are many studies related to quality circle activities and this study specifically tries to analyse the QC activities in manufacturing companies. Further, the researcher made an attempt to test the influence of demographic variables on QC activities.

Review of Literature
Before exploring the relationship between demographic variables and quality circle activities a brief review related to impact of demographic variable and quality circle activities were discussed below

Demographic variables and Quality circle activities
Hakman et.al (1977) analysed that the QWL represents a degree to which employees can satisfy their desires during the work-related practice (workers’ participation) obtained in the organization.

Bachner and Bentley (1983) in his study intricate that QWL environment depict it as an autonomous process in psychological sense and provoke employee participation at all level of an organisation. A high quality of work life is necessary for employee to continue to attract and retain to an organisation. Quality Circles are one of the ways of connecting employees at the bottom level of the organization in decisions affecting their work and work related problems.

Kumar et.al (1993) explained that to achieve Quality of Work Life there are several approaches i.e. job design, workers’ participation, welfare and quality circles in organizations. It is a process to involve employee at every level of the organizations in the decision about their work and workplace.

Maisela (1995) stated that QWL is a chance for people to develop and exhibit their abilities to the fullest. Ellinger and Nissan (1987) analyzed that QWL supports and encourage individual participation and open communication.

Sirgy et al. (2001) constructed that QWL deals with the wellbeing of employees. It is a people oriented process which places great emphasis on the human relations within a work environment.

Mohammadkarim Bahadori., et.al (2018) have revealed in his studies that applying quality control circles in any organization is very helpful and provides opportunities for maximum use of employees’ creativity, initiative and skills in reaching their and their organization’s
goals and objectives, and prepares favourable working conditions for the employees’ optimal performance through increasing the managers’ sense of responsibility and commitment.

Methodology

Objectives

- To analyses the quality circle activities in manufacturing companies and access the management support
- To find out the influence of demographic variables on quality circle activities in manufacturing companies

Hypothesis

There is no difference between quality circle activities and demographic variables

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: To measure quality circles activities questionnaire framed of Lee l.Shaw (1988) were used.

Statistical tools: one way-ANOVA have been used to test the raised hypothesis

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 level of performance of quality circle among members of manufacturing companies and to find out the influence of demographic variables on quality circle activities in manufacturing companies. Results emerging from analysis show that there is no difference about quality circle activities among demographic variables. 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 QC activities
The above table 1 reveals the descriptive statistics of QC activities. It is exposed that 74.3 percent of the member accept that moderate level quality circle activities is practised in their organisation. Since performance of quality circle members and management support for implementing QC suggestions in manufacturing process, the QC activities is moderate When there is improvement in performance and management support for quality circle, the activities of quality circle will be improved consistently. The success of quality circle depends on reaction of management in implementing the recommendation of quality circle. This was supported by the study of Tang and Edie (1992) on the attributions of Quality Circle failure reveal that “the most important thought by members to contribute to Quality Circle failure was lack of management support followed by lack of quality circle members.” The result is also coincident with previous study of Rajesh Chaudhary et.al, (2012), reported that success of the QC is definitely a collective effort and involvement of both management and employees. Hence it is evident that Quality circles are the important tools for achieving total quality and organizational culture.

<table>
<thead>
<tr>
<th>Variables</th>
<th>Quality circle activities</th>
<th>N</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low level</td>
<td></td>
<td>5</td>
<td>11.9</td>
</tr>
<tr>
<td>Moderate</td>
<td></td>
<td>156</td>
<td>74.3</td>
</tr>
<tr>
<td>High Level</td>
<td></td>
<td>29</td>
<td>13.8</td>
</tr>
<tr>
<td>Mean</td>
<td></td>
<td>26.17</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td>3.28</td>
<td></td>
</tr>
</tbody>
</table>

Table 2: Mean and SD of QC activities by demographic variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>F value</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 25yrs</td>
<td>37</td>
<td>26.05</td>
<td>5.12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26 to 35 yrs</td>
<td>54</td>
<td>26.40</td>
<td>2.86</td>
<td></td>
<td>0.723</td>
</tr>
<tr>
<td>36 to 45 yrs</td>
<td>46</td>
<td>26.58</td>
<td>2.69</td>
<td>.518</td>
<td></td>
</tr>
<tr>
<td>46 to 55 yrs</td>
<td>36</td>
<td>25.66</td>
<td>3.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>55 and above</td>
<td>37</td>
<td>25.94</td>
<td>1.98</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational Qualification</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diploma</td>
<td>38</td>
<td>26.89</td>
<td>3.33</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduates</td>
<td>87</td>
<td>25.47</td>
<td>3.49</td>
<td>3.64</td>
<td>0.028</td>
</tr>
<tr>
<td>Post graduates</td>
<td>85</td>
<td>26.57</td>
<td>2.92</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Designation</td>
<td></td>
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</tbody>
</table>
The table 2 reveals the average relation for age group of less than 25 years, 26 to 35 years, 36 to 45 years, 46 to 55 years, 55 and above. Mean value of the age groups are 26.05, 26.40, 26.58, 25.66, 25.58, 25.66 and 25.94. ANOVA test applied to determine whether average mean value differ by age of quality circle members. p value reveals that there is no significance and also discloses that quality circle activities are not differs by members’ age. This shows that the QC members in all age group are interested to participate actively in quality circle activities. Since it utilize members creativity and also support to achieve organization goals in innovative method. This is also consistent with the result of Mohammadkarim Bahadori,. et.al (2018) who revealed in his studies that applying quality control circles in any organization is very helpful and provides opportunities for maximum use of employees’ creativity, initiative and skills in reaching their and their organization’s goals and objectives.

The relation respectively for educational qualification diploma, graduates and post graduates with mean value of 26.89, 25.47 and 26.57. ANOVA test applied to determine whether there is any difference in mean value by qualification of members. p value reveals
that there is no significance and also discloses that quality circle activities are not differs by members’ educational qualification. Quality Circle is one of the employee participation methods which imply the development of skills, capabilities, confidence and creativity of the people through cumulative process of education, training, work experience & participation. So members should be educated and trained to solve work related problem in innovative method. It is also consistent with study of Abeeha Batoole et.al., (2012) the findings of his study reveals that learning ability and education shall be given importance upon selection of employees.

The common relation for designation managers, engineers, supervisor, accountant, technician and employee with mean value of 26.04, 26.94, 26.50, 25.15, 25.74 and 26.18. ANOVA test were applied to determine whether there is any difference in mean value by designation of members .p value reveals that there is no significant relationship between designation and QC activities of members. From the analysis it is understood that QC activities involves all level of members from top to bottom structure of organization. It shows that creative decisions taken related to organisation productivity are implemented without any designation criteria. This is also supported by studies of Bachner et.al (1983) have expressed that QWL environment depict it as an autonomous process in psychological sense and provoke employee participation at all level of an organisation. A high quality of work life is necessary for employee to continue to attract and retain to an organisation. Quality Circles are one of the ways of connecting employees at the bottom level of the organization in decisions affecting their work and work related problems. Kumar et.al (1993) explained that to achieve Quality of Work Life there are several approaches i.e. job design, workers’ participation, welfare and quality circles in organizations. It is a process to involve employee at every level of the organizations in the decision about their work and workplace.

Average relation respectively for department production, quality control, RD, Finance, HR and marketing with mean value of 26.41, 26.36, 26.00, 24.06, 26.70 and 25.94. ANOVA test were applied to determine whether there is any mean difference in mean value by department, p value reveals that there is no significance and also disclose that quality circle activities is not differ by department of members. Since every department is given equal chance to participate in QC activities so there is no difference between QC and departments. The frequent relation respectively for experience less than 6years,6to 10yrs,11to 15 yrs and more than 15 years with mean value26.38,26.61,25.53 and 25.90. ANOVA test were applied to determine whether there is any mean difference in mean value by experience, p value reveals that there is no significance and also disclose that quality circle activity is not differ by experience of members. QC consists of all categories of experienced members, it is convenient for them to share their knowledge and experience which support them to solve work related issues and decision making process.
Conclusion

The findings of the study interpret that there is no difference between demographic variables such as age of members, education, experience, designation, departments and quality circle activities. It is also found from the result that the QC members in all age group are interested to participate actively in quality circle activities. Since it utilize members’ creativity and also support to achieve organization goals in innovative method. The result emphasis that members should be educated and trained to solve work related problem in innovative method. It shows that creative decisions taken related to organisation productivity are implemented without any designation criteria so members in different designation are actively participating in quality circle activities.

Reference

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