

Continuous Improvement Approach for Functional Performance of Product

- A Case Study of MSMEs of Ballari

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Abstract:- There are three types of Kaizen in its typology namely Individual, Group and Management oriented. The third is considered to be the crucial one because it aims at the company strategy and requires the contribution of every personnel. Individual oriented kaizen emphasises the bottom-up approach, where employee recommends the solution to the problems. The group oriented kaizen demands employees to work in group like quality circles with an intention of finding problems during their business practice. This principle intends improvement activities and emphasises its importance through time, cost and product studies. One of the crucial deterrent in successful implementation of TQM is Continuous Improvement. MSMEs play critical role in the economic development of a country. Quality management of these MSMEs is would be critical for their stability. The aim of the paper is to examine the level of Continuous Improvement against functional performance of product at MSMEs of Ballari, Karnataka. The universe comprised executive and non executive workforce of the firm. Sampling was carried out using convenient sampling technique with sample size of 50 in line with the Cochran formula. Data was collected using observation and informal interview methods. Descriptive statistics and Chi-square test was used to analyse the data. The research envisaged that all the factors of Continuous Improvement are associated with functional performance of product at the MSMEs. The study revealed that, Pre-Procurement quality check and Preference over quality than Price at the MSMEs has significant influence on functional performance of product.

Keywords:- Continuous Improvement, Factors of Continuous Improvement, Functional Performance of Product, etc.

I. INTRODUCTION

There are three types of Kaizen in its typology namely Individual, Group and Management oriented. The third is considered to be the crucial one because it aims at the company strategy and requires the contribution of every personnel. Individual oriented kaizen emphasises the bottom-up approach, where employee recommends the solution to the problems. The group oriented kaizen demands employees to work in group like quality circles with an intention of finding problems during their business practice (Imai,1986). This principle intends improvement activities and emphasises its importance through time, cost and product studies (Yuseph

1999). Information should be informed to employees as a means of encouraging them to perform their better along with evaluation for improvement sake(Zhang 2000). Techniques such as PDCA cycle, 7 quality control tools, Business process improvement, Radical re-engineering are effective for process control and improvement (Zhang 2000).

TQM emphasises the significance of gradual improvement (Yong 2001). The necessity for continuous improvement implementation is widely recorded as one of the 25 TQM practices found to be the most common item across centenary studies of TQM (Sila and Abraham pour, 2002). Implementing continuous improvement in an organisation demands frequent measurement of product and process quality and use a programme that aims at drastic reduction in the associated costs (Brah 2002).

The study on quality management system of the firm would help the MSMEs of the region to know the findings and adopt necessary changes or practices in their quality management system.

Based on the emphasised significance of Continuous Improvement in incepting TQM in the previous studies, the following practices were considered in the design of the questionnaire in order to examine the level of Continuous Improvement in the MSMEs under study.

Table 1:- showing Continuous Improvement (CI) items used in the study

A	Emphasize Product and Process Studies: Encourages studies on all the products and processes development.
B	Process Measurements: Measures the productivity of processes frequently.
C	Examine defects in Processes: Effectively examine loss in terms of time and motion in all the internal processes.
D	Usage of QC tools: Use Quality control tools (QC tools) extensively for process control and improvement.

A. Functional performance of product

Organizational excellence is determined by measuring the holistic performance of an entity. But, when it comes to its measurement, performance has gradually gained more objectivity sense. Therefore new methods of reporting

performance is gaining significance these days. Quality Performance is one such performance measure targeting quality in any processing systems of the organization. Therefore, major quality performance factor functional performance of product is used in the study.

B. Problem Statement

Quality and quality management are quite necessary elements any organization shall have to practice. As per the current and previous studies on quality management, among quality management practices, Continuous Improvement has been playing crucial role in influencing quality and other practices quality management in the organization. What would be in case of MSMEs? And how it would be in MSMEs? Especially at non metros, are the inquisitive corners need to be pondered. Therefore, the current study tries to explore and describe the nature of Continuous Improvement and its influence in terms of functional performance of product of the firms under the study.

C. Hypotheses

H0: There is no association of Continuous Improvement on functional performance of product.
 H1: There is an association of Continuous Improvement on functional performance of product.

II. METHODOLOGY

Type of the Study: Descriptive-Survey research
Population: MSMEs of Ballari
Sample Size: 50 as per Cochran formula
Sampling Technique: Convenient Sampling
Data Collection Instrument: Visit observation, interaction, informal interview, etc.
Data analysis and Hypothesis Testing: Descriptive and Inferential statistics, Chi-square Test and Freedman test

III. RESULTS

As per central limit theorem, distribution of data is normal. In order to test research hypothesis, Chi-square - test was used.

Table-2 Chi-square Test for association of Continuous Improvement with functional performance of product

Association	P-Value	X ²	Accept/Reject Ho
Continuous Improvement and Functional performance of product	0.000	23.2	Reject
Sub Components of Continuous Improvement			
Emphasize Product and Process Studies	0.000	16.7	Reject
Process Measurements	0.004	18.3	Reject
Examine defects in Processes	0.006	24.3	Reject
Usage of QC tools	0.004	20.3	Reject

The table indicates that, p value is less than 0.05. Therefore we reject null hypothesis that is it is found that there is an association of Continuous Improvement with functional performance of product at the firms.

The following table ranks the factors of Continuous Improvement as per Friedman’s Test

Table-3 Ranking of factors of Continuous Improvement

Factors of Continuous Improvement	Priorities
Emphasize Product and Process Studies	4 th
Process Measurements	3 rd
Examine defects in Processes	2 nd
Usage of QC tools	1 st

Table indicates that Pre-Procurement quality check and Preference over quality than Price at the MSMEs has significant influence on functional performance of product at the firms.

IV. DISCUSSION

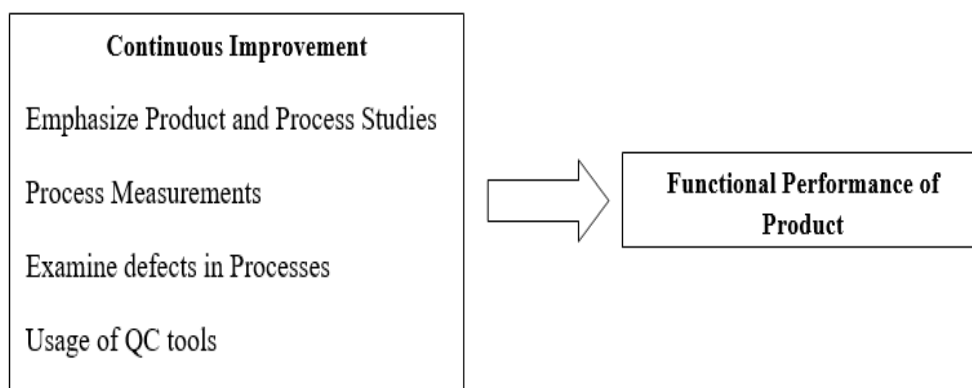


Fig 1: Model representing the association of Continuous Improvement and Functional performance of product

A. Significance of Continuous Improvement on Functional performance of product

Continuous Improvement, as proven generally, is also showing significant relationship with functional performance of product at the MSMEs. All the identified factors of Continuous Improvement are found critical with functional performance of product. However, Usage of QC tools in production process and examine defects in processes at the MSMEs has significant influence on functional performance of product.

B. Significance of Usage of QC tools on functional performance of product

The study identified that usage of Quality control tools (QC tools) extensively for process control and improvement has significant influence on the functional performance of product at the firms. Therefore, the firms need to focus on quality control tools to realize functional performance of product.

C. Significance of Examining defects of processes on functional performance of product

The study found out that effective examination of loss in terms of time and motion in all the internal processes has significant influence on the functional performance of product at the firms. Therefore, the firms need to conduct time and motion studies to identify defects in the production processes to ponder upon its improvement in order to realize reduced functional performance of product.

V. CONCLUSION

Continuous Improvement, as proven generally, is also showing significant relationship with functional performance of product at the MSMEs. All the factors identified under Continuous Improvement are associated with functional performance of product. However, Usage of QC tools in production process and examine defects in processes at the MSMEs has significant influence on functional performance of product. All in all, firms need to consider all the factors of Continuous Improvement for enhancing functional performance of product at the MSMEs.

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