



Management

**EVALUATION OF PERFORMANCE MEASURES FOR  
IMPLEMENTATION OF TQM PRACTICES IN CEMENT INDUSTRY: A  
COMPARATIVE STUDY OF VINDHYA REGION**

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**Abstract**

Total Quality Management is a widely used term in almost every industry now and from decades it is used as method to motivate people. It is a major tool, involves changes in people's attitudes. In accumulation, it deals with process orientation and unbroken improvement of the process. It strives for empowerment and independence of the people involved in using processes of production. It questions people to continuously look for new ways to adapt to the changing environment. It's an unremitting perfection plan, with an effort to bring out the best for the stakeholders as well as for the institution.

**Keywords:** Cement Industry; Comparative Study; Vindhya Region.

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**1. Introduction**

A starting point practical meaning of what TQM is all around has stood by the American Federal Office of Management Budget Circular, it defines TQM as a total organizational method for fulfilling customer wants and expectations that includes all managers and personnel in using quantitative methods to expand continuously the organization's processes, products and services (Milakovich, 1990). TQM is not merely a technical system. In fact, TQM is related with the organization itself, which is also a social system (Morgan & Murgatroyed, 1997). Few individuals claim that organizations are not only technical systems but also humanoid system (Pike and Barnes 1996). Oakland (1993), defines that TQM is an effort to expand the whole organization 's competitiveness, efficiency, and structure. According to Dale (1999), TQM is the joint co-operation of one and all in an organization and related business procedures to produce products

and services, which meet and, hopefully, surpass the needs and expectations of customers. TQM is both a philosophy and a set of management guiding principles for managing an organization. From the above-mentioned definitions, we can easily identify two significant characteristics that cover TQM they are management tools and techniques and management concepts and principles.

## 2. Objectives

- To identify and study the different elements of Performance Measures of TQM Practices in Cement Industry.
- To compare the status of different Performance Measures of TQM Practices in Cement Industry of Vindhya Region.

## 3. Hypotheses

H01: There is no significant difference in the opinion of employees towards “Quality Performance Measures” with respect to different Cement Companies in the Cement Industry.

H02: There is no significant difference in the opinion of employees towards “Business Performance Measures” with respect to different Cement Companies in the Cement Industry.

H03: There is no significant difference in the opinion of employees towards “Employee Organization Performance Measures” with respect to different Cement Companies in the Cement Industry.

## 4. Methodology

This study has been conceptualized and planned to understand and compare the importance of Total Quality Management (TQM) in Cement Industry and its evaluation in the selected cement companies of the Vindhya Region. TQM Performance Measures such as Quality Performance Measure, Business Performance Measure & Employee Organization Performance Measure have been covered in the study.

Descriptive as well as analytical research design has been adopted for present study. As the research is related to the evaluation of TQM Practices in the Cement industry, therefore the investigation into the problem is mainly based on primary data which has been collected by survey method with the help of a well-structured questionnaire which has been served to the managers, executives and workers of the selected Cement Manufacturing Companies under the field of study. The responses of various category of respondents have been compared and on the bases of their demographic factors such as category, age and experience.

In this study two stage sampling method has been used. In first stage four cement manufacturing companies have been selected on the basis of convenience. The companies selected are Prism Johnson Ltd., Maihar Cements Ltd., KJS Cements Ltd. and Ultra-tech Cements Ltd.

In second stage 75 individual employees from each company were taken on the basis of convenience. Initially, it was planned to stratify the respondents on the basis of category (managers, executives & workers) but it was not feasible for me to get equal number of respondents from all the three categories of employees as managers and executives were not easily accessible.

Therefore, 75 respondents each were taken from all the four selected companies irrespective of number of respondents in each category. The description of the sample is as follows:

Table 4.1: Cement Companies					
Cement Company		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Prism Johnson Ltd	75	25.0	25.0	25.0
	Maihar Cement	75	25.0	25.0	50.0
	KJS Cement Ltd	75	25.0	25.0	75.0
	Ultratech Cement	75	25.0	25.0	100v.0
	Total	300	100.0	100.0	
Table 4.2: Category of Employees					
Employee Category		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Manager	53	17.7	17.7	17.7
	Executive	94	31.3	31.3	49.0
	Worker	153	51.0	51.0	100.0
	Total	300	100.0	100.0	
Table 4.3: Age of the Respondents					
Age Group		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 25	62	20.7	20.7	20.7
	25 – 35	57	19.0	19.0	39.7
	35 – 45	99	33.0	33.0	72.7
	45- 55	72	24.0	24.0	96.7
	Above 55	10	3.3	3.3	100.0
	Total	300	100.0	100.0	
Table 4.4: Experience of the Respondents					
Experience		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 5 Years	69	23.0	23.0	23.0
	5 – 10	62	20.7	20.7	43.7
	10 – 15	47	15.7	15.7	59.3
	More than 15 years	122	40.7	40.7	100.0
	Total	300	100.0	100.0	

## 5. Findings

### 5.1. Quality Performance Measure

It has been found that Rework, Cost per Product and Defect Rate are the three most prominent measures of Quality Performance with regards to Total Quality Management in the Cement Industry.

The overall mean score (3.28) of all six items in Quality Performance Measure signifies that Cement Industry is in a no change position with respect to this aspect and they are by and large maintaining their existing quality standards by neither improving nor detreating significantly.

The null hypothesis H011a regarding Employee Category is not accepted and higher mean score (21.9811) of opinion of Managers, signify that they are satisfied with the Quality Performance Measures of their organization for Total Quality Management implementation in Cement Industry. While, comparatively low mean scores of Executives & Workers (19.77 & 18.84 respectively) indicate that they are not much satisfied with the Quality Performance Measures of their organization in this regard.

Similarly, the null hypothesis regarding Cement Companies H011b is not accepted and higher mean scores of KJS Cements & Maihar Cement (25.0133 & 20.1333 respectively) indicated that they are more conscious towards Quality Performance Measures of their organization for Total Quality Management implementation in Cement Industry as compared to other organizations’.

## **5.2. Business Performance Measure**

It has been found that Total Sales & Net Profit are the two most prominent Measures of Business Performance with regards to Total Quality Management in the Cement Industry.

The overall mean score (4.064) of all four items in Business Performance Measure signifies that Cement Industry is improving its business performance according to the opinion of the respondents.

The null hypothesis regarding Employee Category H012a is not accepted and lower mean score (15.3774) of opinion of Managers, signify that they are less satisfied with the Business Performance Measures of their organization for Total Quality Management implementation in Cement Industry. While, comparatively higher mean scores of Executives & Workers (16.40 & 16.47 respectively) indicate that they are highly satisfied with the Quality Performance Measures of their organization in this regard.

Similarly, the null hypothesis H012b regarding Cement Companies is not accepted and higher mean scores of Prism Cement Ltd. & Ultratech Cement (17.28 & 16.47 respectively) indicated that they are more conscious towards Business Performance Measures of their organization for Total Quality Management implementation in Cement Industry as compared to other organizations’.

## **5.3. Employee-Organisation Performance Measure**

It has been found that Employees’ attitude towards quality, Employee’s pride in one’s work, flow of information among departments, quality of product at supplier and customer delivery end are the most prominent measures of Employee-Organisation Performance with regards to Total Quality Management in the Cement Industry.

The overall mean score (3.635) of all sixteen items in Employee-Organisation Performance Measure signifies that Cement Industry is improving its performance according to the opinion of the respondents in this measure and significant improvement is required in this context.

The null hypothesis regarding Employee Category H013a is not accepted and lower mean score (15.3774) of opinion of Managers, signify that they are less satisfied with the Business Performance Measures of their organisation for Total Quality Management implementation in Cement Industry. While, comparatively higher mean scores of Executives & Workers (59.45 & 58.28 respectively) for 16 items indicate that they are highly satisfied with the Business Performance Measures of their organisation in this regard.

Similarly, the null hypothesis H013b regarding Cement Companies is not accepted and higher mean scores of Prism Cement Ltd. & KJS Cements (59.65 & 58.93 respectively) indicated that they are more conscious towards Business Performance Measures of their organisation for Total Quality Management implementation in Cement Industry as compared to other organisations. Further, comparatively low mean score (55.93) of Maihar Cement indicates that there is scope of improvement with regards to Business Performance Measures in their organisation for Total Quality Management.

## 6. Conclusion

It is being concluded that identified and examined TQM Practices are being followed in the Cement Industries to a good extent as the opinion of most of the respondents for above mentioned three parameters are found to be highly satisfactory, by and large. But, the rejection of the framed Null Hypotheses concludes that there is a variation in the opinion of the employees of different cement companies considered for the study. Therefore, there exists a scope of significant improvement of TQM Practices in some of the Cement Manufacturing Organisations. It is being concluded that TQM Practices are more prominently implemented in Prism Johnson Cements Ltd and Ultratech Cements Ltd. as their employees are highly satisfied in eight out of thirteen dimensions of TQM Practices in Cement Industry. But, the employees of KJS Cements and Maihar Cements are found highly satisfied in only five and four dimensions, respectively. Thus, it is concluded that these two organisations need to focus more on TQM Practices, especially Business Performance Measures.

## References

- [1] Abdolshah M, Abdolshah S. Barriers to and success factors for the successful implementation of TQM in Iranian manufacturing organizations, *International Journal of Productivity and Quality Management*. 2011; 7(3):358-373.
- [2] Acs Z, Audretsch D. *The Economics of Small Firms: A European Challenge*, Kluwer Academic Publishers, Norwall, MA, 1990.
- [3] Al-Refaie A, Hanayneh B. Influences of TPM, TQM, Six Sigma practices on firms performance in Jordan, *International Journal of Productivity and Quality Management*. 2014; 13(2):219-234.
- [4] Arumugam V, Chang HW, Ooi KB, The PL. Self assessment of TQM practices: a case analysis, *The TQM Journal*. 2009; 21(1):46-58.
- [5] Baidoun S. An empirical study of critical factors of TQM in Palestinian organizations, *Logistics Information Management*, 2003; 16(2):156 -171.
- [6] Bellah J, Zelbst PJ, Green Jr KW. Unique TQM practices and logistics performance, *International Journal of Productivity and Quality Management*. 2013; 12(1):61-76.
- [7] Berry TH. *Managing the Total Quality Transformation*, McGraw-Hill, New York, NY, 1991.

- [8] Brock W, Evans D. The Economics of Small Business: Their Roles and Regulations in US Economy, Holmes & Meier Publishers, Teaneck, NJ, 1986.
- [9] Choong Lee Y. TQM in small manufacturers: an exploratory study in China, International Journal of Quality & Reliability Management, 2004; 21(2):175-197.
- [10] Cocca P, Alberti M. A framework to assess performance measurement systems in SMEs, International Journal of Productivity and Performance Management. 2010; 59(2):186-200.
- [11] Cua KO, McKone KE, Schroeder RG. Relationships between implementation of TQM, JIT, and TPM and manufacturing performance, Journal of Operations Management. 2001; 19(6):675-694.
- [12] Dahlggaard JJ, Kristensen K, Kanji GK. Fundamentals of Total Quality Management, Chapman & Hall, London, 1998.
- [13] Demirbag M, Tatoglu E, Tekinkus M, Zaim S. An analysis of the relationship between TQM implementation and organizational performance: evidence from Turkish SMEs, Journal of Manufacturing Technology Management. 2006; 17(6):829-847.
- [14] Dubey R, Singh T. A theoretical framework of soft TQM in successful implementation. International Journal of Advanced Operations Management. 2012; 4(3):195-218.

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