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## A STUDY ON CONDITIONS ESSENTIAL FOR IMPLEMENTATION OF DEMING'S PRINCIPLES IN PAPER INDUSTRIES

### Article Particulars

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**M. VIJAY HEMALATHA**

Ph.D Research Scholar,  
Department of Management Studies,  
Mother Teresa Women's University,  
Kodaikanal, Tamil Nadu, India

**Dr. N. RAJASEKAR**

Professor and Head, Department of Business Administration,  
Thiagarajar College, Madurai, Tamil Nadu, India

### Abstract

Total quality management (TQM) is considered a very important factor for the long-term success of an organization. TQM implementation has been an important aspect for improving organizational efficiency. First the organizations should make exist conditions essential for implementation of deming's principles in their organizations. This study attempts to test the relationship between age and category of job to conditions essential for implementation of deming's principles. The respondents in this study were employees of paper industries in Tamil Nadu. The study utilized primary data which is collected through questionnaire. Hypotheses were set and tested using IBM SPSS 21version for statistical analysis. The result showed there is significant difference among age and category of job with respect to conditions essential for implementation of Deming's principles.

**Keywords:** Total Quality Management, Deming's Principles, Employees demographic profile

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### Introduction

TQM begins with the primary assumption that employees in organizations must cooperate with each other in order to achieve quality for the needs of the customer. TQM process also depends on a certain set of values and beliefs by all organizational members. Total quality management (TQM) is a systematic quality improvement approach for firm-wide management for the purpose of improving performance in terms of quality, productivity, customer satisfaction, and profitability. Since TQM practices have been embraced by many firms around the world for decades, they have earned the attention of many researchers from diverse areas. TQM is a management philosophy that is intended to empower every members of the organization. It is intended to promote continuous, sustained and long term

improvement in quality and productivity and to eliminate employees' fear of change. It's basic principle is that the cost of prevention is less than the cost of correction. The organizations should make exist conditions essential for implementation of Deming's principles in their organizations. Only proper environment leads to proper employees performance.

### **About Dr. William Edwards Deming**

Dr. William Edwards Deming is known as the father of the Japanese post – war industrial revival and was regarded by many as the leading quality guru in the United States. Japan's products were treated as inferior ones decades back, but today most of the companies have joint ventures with Japanese companies because they were able to make quality products at cheaper prices. Japanese companies were able to become world leader in manufacturing automobile parts and electronic products because of the implementation of Deming's principles.

### **Review of Literature**

**Gunasekaran (1999)** in his research paper discussed the major enablers and proposed a framework in the successful implementation of TQM in a manufacturing company. By applying case study method, structured questionnaires were used to collect data from the employees and staff on TQM implementation. The results of the study show that communication between managers/supervisors and staff being seen as the major enabler in the implementation of TQM. The major observations are that the lack of internal communication, training and attitudes towards their work need to be improved by changing the culture of the company. Managers need to possess skills to communicate and motivate all the employees in the team. Finally, the author proposed the framework for the implementation of TQM in a manufacturing company with some basic points concerned with the cultural and behavioural issues of the TQM implementation process. **Yusof and Elaine (2001)** studied the implementation of TQM in small and medium-sized automotive enterprises in UK. Further, the study developed the framework for the TQM implementation. The study analyzed how the company had implemented TQM and why had the company chosen the particular approach. In addition to these, the study also investigated the feasibility of the proposed implementation framework in terms of its strengths, weaknesses, simplicity, practicality, etc. This was the study conducted in ten automotive companies implemented TQM by applying the case study approach. At the end of the case study, the companies were classified as either "TQM" or "lesser TQM" companies. A TQM company was defined as one that had achieved an advanced level of TQM adoption whereby many of the different quality initiatives are implemented and the number of years for implementing these initiatives is longer. "Lesser TQM" companies were those that had much fewer initiatives implemented, and were still at an early stage in their quality journey. **Hansson and Bengt (2003)** studied small organisations in Sweden, which successfully implemented TQM. A multiple case study of nine organisations in Sweden

are selected to study the TQM implementation processes. Three different data collection methods have been chosen: interviews, documentation collection and to a certain extent direct observations. The interview questions were related to the organizational implementation process and the actual quality development work started to the point of receiving the award. The comparison between the cases shows that there are significant similarity in the core values such as committed leadership, everybody's commitment and customer orientation while implementation process. The study further indicated that some of the core values were problematic to implement in the organization, from that one similarity between the cases is process focus. The authors analyzed the cases and various literatures and developed model structure in three phases for implementing the TQM in the small organizations. Finally they concluded that core value-based model consisting of the three phases is an overarching recommendation for how to implement TQM in small organizations. To know the state of quality management efforts in the Indian service sector. Hashmi (2010) Six Sigma is a statistically based quality system that is often implemented in companies as another method of continuous improvement. SixSigma.com defines Six Sigma as "a disciplined, data-driven approach and methodology for eliminating defects in any process" TQM is often introduced as a facet of the Six Sigma approach. Ioan Milosan (2011) conducted a study from the Transilvania University of Brasov, Romania entitled "Studies about the Total Quality Management Concept" provides a different perspective on the implications of a Total Quality Management system. Milosan explains, "Total Quality Management is an organizational strategy founded on the idea that performance in achieving a quality education is achieved only through involvement with the perseverance of the entire organization in improving processes permanently. The objective is to increase the efficiency and effectiveness in satisfying customers" (p. 45). Later on in her study, Milosan concludes, "TQM refers to an integrated approach by management to focus all functions and levels of an organization on quality and continuous improvement"(p. 45). Milosan's research surmised that there are six key elements to successfully implement a TQM process: confidence, training, teamwork, leadership, recognition, and communication. By focusing on three different quality management models, she came to the realization in this study that TQM needs to focus on using all of these key elements to create a "continuous flow" of improvements from the very bottom of the organization.

### **Objectives of the Study**

To study the demographic profile of the respondents and its influence towards conditions essential for implementation of Deming's principles.

### **Methodology**

Research methodology is a scientific and systematic way to solve research problems. The research methodology deals with research methods and takes into consideration the logic behind the methods. For this study, the researcher used a well-

structured questionnaire to collect the data from the respondents. The questionnaire includes demographic profile, job category of the respondents and questions related to conditions essential for implementation of deming's principles. The researcher used ANOVA analysis to identify the difference among demographic profile of respondents with respect to conditions essential for implementation of deming's principles. IBM SPSS 21 version is used for statistical purpose.

**Results and Discussions**

**Difference among Age with Respect to Conditions Essential for Implementation of Deming's Principles**

In this study, conditions essential for implementation of Deming's principles consists of four factors that measure top management related, employee related, third party related and quality assurance related. Age is classified into three, less than 30 years, 31-40 years and 41-50 years. One way ANOVA is used to test the difference among age with respect to conditions essential for implementation of Deming's principles. The table below shows the Mean, Standard Deviation and One way ANOVA results.

H<sub>0</sub>: There is no significant difference among age with respect to conditions essential for implementation of Deming's principles.

**Table 1 Difference among Age with Respect to Conditions Essential for Implementation of Deming's Principles**

Conditions essential for implementation of Deming's principles	Less than 30 years		31-40 years		41-50 years		F value	P value
	Mean	SD	Mean	SD	Mean	SD		
Top Management Related	4.82	0.472	4.75	0.470	4.77	0.425	1.468	0.231
Employee Related	4.70	0.532	4.79	0.476	4.90	0.301	3.464	0.032*
Third Party Related	4.73	0.545	4.58	0.656	4.77	0.425	4.313	0.014*
Quality Assurance Related	4.70	0.572	4.54	0.661	4.90	0.301	7.733	0.000**

Note : 1. \*\* denotes significant at 1% level.

2. \* denotes significant at 5% level.

Since P value is less than 0.01, null hypothesis is rejected at 1% level with regard to the dimension of quality assurance related. Hence there is significant difference between age with regard to the dimension of quality assurance related. Since P value is less than 0.05, null hypothesis is rejected at 5% level with regard to the dimension of employee related and third party related. Hence there is significant difference between age with regard to the dimension of employee related and third party related. There is no significant difference between age with regard to the dimension of top management related. Since P value is greater than 0.05. Hence the null hypothesis is accepted with regard to the dimension of top management related.

## Difference among Category of Job With Respect to Conditions Essential for Implementation of Deming's Principles

In this study, conditions essential for implementation of Deming's principles consists of four factors that measure top management related, employee related, third party related and quality assurance related. Category of job is classified into three, junior level manager, middle level manager and senior manager. One way ANOVA is used to test the difference among category of job with respect to conditions essential for implementation of Deming's principles. The table below shows the Mean, Standard Deviation and One way ANOVA results.  $H_0$ : There is no significant difference among category of job with respect to conditions essential for implementation of Deming's principles.

**Table 2 Difference among Category of Job with Respect to Conditions Essential for Implementation of Deming's Principles**

Conditions essential for implementation of Deming's principles	Junior Level Manager		Middle Level Manager		Senior Manager		F value	P value
	Mean	SD	Mean	SD	Mean	SD		
Top Management Related	4.85	0.432	4.73	0.530	4.74	0.443	4.340	0.013*
Employee Related	4.77	0.488	4.72	0.535	4.74	0.501	0.526	0.591
Third Party Related	4.77	0.517	4.52	0.656	4.70	0.583	9.479	0.000**
Quality Assurance Related	4.73	0.506	4.50	0.726	4.71	0.564	8.478	0.000**

Note : 1. \*\* denotes significant at 1% level.

2. \* denotes significant at 5% level.

Since P value is less than 0.01, null hypothesis is rejected at 1% level with regard to the dimension of third party related and quality assurance related. Hence there is significant difference between category of job with regard to the dimension of third party related and quality assurance related. Since P value is less than 0.05, null hypothesis is rejected at 5% level with regard to the dimension of top management related. Hence there is significant difference between category of job with regard to the dimension of top management related. There is no significant difference between category of job with regard to the dimension of employee related. Since P value is greater than 0.05. Hence the null hypothesis is accepted with regard to the dimension of employee related.

### Conclusion

The present study has focused on the conditions essential for implementation of Deming's principles. The present study has included employees of paper industries in Tamil Nadu. This paper throughout, has professed about the role of management in attaining quality. The model has explained the mechanism for managers and employers on how to motivate and encourage workers to achieve desired actions for customer satisfaction and profit maximization. The first and foremost thing is that employees should be empowered to work according to their ideas regarding the jobs and tasks assigned to them. They have to carry out the strategic goals in daily business affairs and know the exact demands of their job. so they should be given full charge of

their work i.e. employee empowerment. The employees must be involved in decision making so that bosses know what to do or how to do in order to expand the business as this not only aids in designing practical programs but provides the unity and harmony in the concern. If done so, employees realize that they are given importance and feel encouraged and enthusiastic while performing their job..

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