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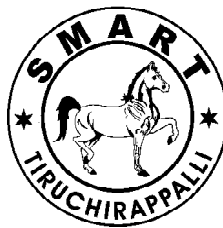
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## IMPLEMENTATION CHALLENGES OF TOTAL QUALITY MANAGEMENT (TQM) IN DAIRY SECTOR

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### **Abstract**

*The quality of final products and services is a strategic competitive variable for an organization. Over the years, many tools and techniques have been developed to support the process of quality improvement and some of these tools are useful in specific situations. Many companies are engrossed with the tools, forgetting that the tools are there for a specific purpose. Hence Total Quality Management (TQM) has been developed by organisations, as a philosophy, emphasizing the need to provide consumers with high quality products and services, eliminate waste, reduce lead times at all stages of production, reduce costs, develop people and improve continuously. Hence the study to understand the complexities, associated with TQM implementation, in the Dairy Sector, with specific reference to BAMUL. Majority of respondents were of the opinion that TQM did help to improve their efficiency at work.*

**Keywords:** BAMUL, Six Sigma, Dairy Sector, Structural Transformation, Time-Starved

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## 1. Introduction

Today's organizations are continuously striving to apply the concept of high quality, to the process of production, in order to minimize cost and generate quality products and services. The definition of the term, quality, is dependent on the people defining it. Despite this, maintaining the quality of any type of good, during production, is a significant step. The survival of a company is dependent on how well the organization maintains the quality of the goods that it produces. For consumers, defining quality is a challenge but they can recognize it upon seeing it. Any organization, regardless of motives and sizes, can apply Total Quality Management (TQM). Organizations, in the private and public sectors, are using TQM, to make them effective in fulfilling the demands of their consumers. Unfortunately, organizations have not adopted TQM properly. Some organizations have not implemented TQM fully. Instead they implement it as a program, and they expect it to perform and function autonomously. As a result, such organizations fail to realise their expectations of using TQM.

Organizations, that have implemented TQM, register higher organizational support and commitment. Additionally, workers in companies, that have implemented TQM, report increased positive communication relationships between top management and employees. They also indicated an improved quality of communication from top management. The elements of communication are attributed to the variation in perceived organizational support and commitment in that organization. Various elements of communication are important in perceived organizational support and commitment.

TQM is a system, developed by Armand Feigenbaum. **Armand Feigenbaum (1983)** defines TQM as "an effective system of integrating the quality development, quality maintenance and quality improvement efforts of

various groups in an organization so as to enable marketing, engineering, production and service, at the most economical levels which allow for full customer satisfaction." This definition of TQM is comprehensive as it covers the important requirements describing the system.

TQM can also be defined as "the continuous process of reducing or eliminating errors in manufacturing, streamlining supply chain management, improving the customer experience and ensuring that employees are updated with their training. Total quality management aims to hold all parties involved in the production process as accountable for the overall quality of the final product or service. Organizations use TQM to making their both internal and external customers happy, through fulfilling their expectations, on a continuous basis. This happens via everyone who takes part in improving the processes and products of the organization, alongside an effective method of solving problems.

The history of the development of dairy farming goes back to the colonial times. During this time, the Department of Defense started dairy farming to meet the demands for milk and butter to the colonial military. The Department established the first dairy firm, in 1913, in Allahabad, and a similar farm was set up in Bangalore. The farms raised dairy animals under the conditions of the firm, which resulted in hard improvement in the animals. Despite this improvement, the supply of milk to urban consumers did not improve, a situation that sparked concerns among authorities. As time passed, the urban population increased, resulting in an increased demand for milk, which was met by vendors who reared cattle in their areas and sold milk door-to-door. The vendors did not meet the demand and a number of cattle shed sprouted in the cities. This approach was not considered to be environmentally sound. To some extent, the World War II motivated private

dairy farmers, who were characterized by modest modernized processing facilities. Though in small quantities, ice cream, table butter, and processed milk were available in various cities such as Delhi, Chennai, Calcutta, and Bombay, among other large townships. These upcoming dairies did not make any effort to improve the breed of animals or the quality of milk they produced and they exploited milk producers and the consumers. These early modern systems made no efforts to improve production of milk nor did they improve the quality of animals, despite having modernized processing facilities.

## 2. Review of Literature

**Furterer, et al., (2005)** describe TQM as an organizational approach, used to improve the quality of services and products and it is focused mainly on continuous improvement. Lean manufacturing is a quality management approach, that helps organizations improve the quality of services and products, by reducing variation and eliminating waste. Over the last several years, there has been literature on the concept in which the tools and principles of Six Sigma and Lean Enterprise have been used together, in a manner that is synergistic. Private industries are the major users of TQM, Lean Six Sigma, and they use them in manufacturing. However, the use of Lean Six Sigma application in the local government has not been reflected in the literature. **Cox and Raymond (1995)** looked at factors hindering the effective implementation of the TQM program, in the private sector, in New Mexico. The manner in which the management is linked to the legislature and the fiscal aspects, differentiates the public and private sectors. These sectors understand the involvement but they have not recognized the implications of TQM. In the private sector, the implications of TQM are part of management, unlike in the public sector where the administration must clear the projects,

requiring personnel and budgetary implications. In another study, **Farazmand (2005)** highlights the changing government role in a rapidly changing global environment, a process where forces of global capitalism are pursuing worldwide integration. Conflicting forces of globalization or capitalist corporate, interested in absolute profits, challenge the Government. At the same time, there is a mounting pressure worldwide for quality assurance and quality services that result in the development of an impossibility theorem, that has brought new opportunities and challenges to the governments. **Attaran, et al., (1995)** examined the ways in which principles of TQM are applied to maintain the health organizations, offering service to the senior populations, who are eligible for such services under Medicare program. Service organizations are under pressure to adopt new methods to improve their operations so that they can remain competitive, which calls for a TQM modification so that it can fit in the public sector. **Selvaraj (2009)** showed that there is a research gap in the management of service industry, especially the banking industry. The author studied the employees in private and public banks as well as foreign banks, at Madurai District in Tamil Nadu, to examine the vital factors of TQM in three groups of commercial banks. The study also examined the rate at which these commercial banks implemented TQM. The author compared the usage to determine the different TQM factors in the three groups of banks. The study showed that the commitment of the top management is the important TQM factor in commercial banks. **Radin (2001)** examined the use of TQM in the U.S. public sector. A number of characteristics of U.S. public sector hinder or complicate the implementation of TQM. TQM emphasizes decision making and strategic planning with proactive quality. TQM adopts a level of stability in the organization,

allowing people to predict the future directions and existence accurately. From a TQM perspective, customer and quality are two crucial values and they are easy to define them in organizations in the private sector. According to **Hendrick (1994)**, the use of information system is gaining popularity at all levels of government, and these systems are fundamental to the success of innovative approaches of management. Private as well as public sector are flooded with many management trends, and among these trends is TQM, that is focused on improvement of products and services in the public sectors via processes, outputs, rigorous attention to inputs, worker participation, and organizational commitment. **R.A., A., and M., (2017)** found that manufacturing business, within the developing countries, had matured considerably over the last decade thanks to augmented public demand, Government's initiatives, and investors' enhanced interest within the manufacturing sector. However, quality of product remains a very important issue for the regionally created merchandise. Only a couple of manufacturers are manufacturing prime quality product, with higher client satisfaction. Many of them are holding quality certificates but only some have reached a stage of development, where they're ready to apply trendy quality principles and techniques effectively. Analysis on product quality improvement shows that meeting client satisfaction, increasing profits and reducing losses to a minimum level are often earned through the application of recent quality philosophies and principles like Total Quality Management (TQM). Understanding the tools and techniques of TQM is vital for producing useful results. A deeper understanding is needed to analyze implication of TQM implementation.

### **3. Statement of the Problem**

Improving quality has become a company-wide effort as the increasing globalization of business underscores the necessity of continuous improvement. Total quality management (TQM), the preferred approach to achieving this end, is no longer the sole concern of quality engineers, product designers, process engineers and other specialists. To institute total quality management as a philosophy within an organization, all employees must come to realize that satisfying customers is essential to the long time well being of the firm and their jobs. No longer is the customer-driven focus exclusive to the marketing department. But customer satisfaction can only be achieved after first defining the customer groups. The new perspective here is that all employees exist to serve their customer groups, some internal and some external to the firm.

### **4. Need of the Study**

The Department of Human Resource Management can play a vital role in implementing and maintaining a total quality management process. HR managers are responsible for recruiting high quality employees, continual training for the development of those employees, and the creation and maintenance of reward systems. Thus, TQM controls processes, that are central to achieving the dramatic cultural changes, often required for TQM to succeed. Tailoring the TQM cultural development program to the firm's circumstances is essential in overcoming resistance to change and moving beyond simple compliance with total commitment to TQM. Hence a study was undertaken at BAMUL (Bangalore Milk Union Limited) to obtain new insights into the effectiveness of TQM, leading to job satisfaction of the employees.

## 5. Objectives of the Study

The present study was undertaken to accomplish the following objectives:

- i) To study the opinion of respondents on the importance of quality management
- ii) To know whether TQM improves the work efficiency of employees
- iii) To determine whether TQM assists in alignment of the company's goal as well as individual's goals and
- iv) To find the respondents' opinion on BAMUL providing the right environment to apply quality initiatives for the new programs of the job.

## 6. Hypothesis of the Study

**NH-1:** There is no significant influence of total quality management practices on employee performance.

## 7. Research Methodology

### 7.1 Sample Selection

A sample of 150 employees was considered for the survey. The Researcher used simple random sampling method.

### 7.2 Sources of Data

For the purpose of this study, primary and secondary methods were used for collecting data. A structured questionnaire and personal interview methods were used to collect primary data. Secondary data were collected from company brochures, websites, internet, newspaper, reports, textbooks, as well as other promotional materials.

### 7.3 Period of the Study

All the employees of Bangalore Milk Union Limited (BAMUL) formed the population of this study and it was conducted during April 2018 and June 2018.

### 7.4 Tools used for the Study

Percentage method was used, for the statistical analysis of the data, collected from

the sample respondents. Further, regression analysis was used for testing the hypothesis, formulated for the study.

## 8. Analysis of Data

Out of 150 respondents to the survey, it was evident that the majority of them were males, from the age group 26 to 35 years, followed by 36 to 45 years. Females constituted 21% of the total respondents, in which majority of them were from the 26 to 35 years age group (**Table-1**). Hence it can be inferred that a large number of Indian workforce was composed of youth, between the age group of 25 to 35 years. Currently, 66.6% of the population of India is in the age group of 26. Additionally, the economy of India is in the middle of a structural transformation. The economy is transitioning from being agrarian and rural to a modern, skill based economy dedicated to services and manufacturing.

**Table-2** shows that majority of employees accepted that quality management played an important role in the organization. The company conformed to external and internal expectations and requirement associated with how they control and manage quality, both in public relations, general stakeholders, clients, services, products, and operations. The ability of the organization to measure and manage performance as well as use this information to improve and evolve is critical to its success.

According to **Table-3**, forty four percent of the respondents reported that TQM improved the work efficiency of the employees, twenty four percent maintained that it did not improve while thirty two percent could not say anything about TQM. TQM is a new method, which is different from the conservative management practices in which the management of the organization made the decisions while the employees obeyed them. The disadvantages of this top-down inflexible management style was

that it offered limited room for competition.

**Table-4** shows that 48% respondents opined that TQM assisted in the alignment of company's goals with individual goals, 24% did not agree while 28% could not say anything about the alignment of goals by TQM.

From the **Table-5**, it is found that 52% of the respondents were satisfied, to a major extent, with the organization in getting right environment for applying their ideas while 28% were satisfied, to a little extent and 20% were not at all satisfied with the organizational environment. Innovation is a significant force to create and sustain organizational growth. Innovation is a collaborative activity, in the current global economy, taking place across the extended organization and comprises of distributors, suppliers and other strategic alliances.

Employee performance is an integral component in an organisation that makes the employees motivated to pursue their day to day work in an efficient and effective manner. Using TQM practices, to increase motivation, has resulted in escalating the interest level of employees leading to a tangible improvement in the situation. Therefore, it is important to understand the association between TQM practices and employee motivation. Values from **Tables-6, 7 and 8**, taken from SPSS software Version 21 indicated the results of hypothesis testing.

**Table-8** reveals the equation to be Sig. Value (0.002) <  $\alpha$  (0.05) and hence null hypothesis **NH-1** (There is no significant influence of total quality management practices on employee performance) was rejected. In other words, there was significant influence of TQM practices on employee performance. Further, the results revealed that the existing total quality management practices provided a tangible difference in the performance level of

the employees, though it could only explain 9.9% of the variation in the employee performance ( $F = 10.213$ ,  $\beta = 0.354$ ;  $p = 0.002$ ). This result indicated that there were various other factors which could contribute to the employee performance, like work environment, nonfinancial rewards and so on, including the TQM practices.

## 9. Findings of the Study

Majority of the respondents of the present study were males, belonging to the age group of 25 to 35 years. Though majority of respondents reported that TQM helped in achieving work efficiency, their percentage was less than 50, which indicated that factors such as goal visibility and alignment could allow the company employees to execute the strategy as it would enable the company's management to assign appropriate resources to various projects. Further, it found that current market is customer driven and time-starved and for a company to survive in such a market, rapid response time is necessary for manufacturers and the business to the changing needs of the customers.

## 10. Suggestions

Quality management includes a decline in the cost of clean-up errors. It leads to improved customer service, increases the flexibility of the business, streamlines the businesses' internal process, provides greater certainty of terms and strengthens the company's international competition. For TQM to be successful, the company should adopt a versatile management and systematic use of the tools and method of quality management. Because TQM is provided as an approach for implementing sustainable development, the method reduces the risks, related to the socio-economic administration as well as providing a way to achieve the goals of sustainable development.

## 11. Conclusion

Total Quality Management (TQM) is a tool, used to implement organizational and sustainable development. The features of TQM are closely similar to the objectives of managing sustainable development outlined in our study. The business has recognized the importance of adopting sustainable development policy to improving its competitive advantage. TQM quality cycle needs to consider sustainable management, as an essential element of each service or product lifecycle. The organization should make sustainable development policy a significant element of the marketing mix and allocate finance as a proportionate expenditure. An inclusive quality management is not only an attitude but also a philosophy as well as an unremitting process, emphasizing personal responsibilities of every employee looking forward to improving. Additionally, quality management is also a business strategy, which gives the activities of the organization the center of attention, to produce services and products, that satisfy the customers. It involves improving the business continuously for the employees, customers, and owners.

## 12. Limitations of the Study

The study was limited to total quality management aspect of the dairy sector in Bangalore Milk Union Limited and it was conducted only for the period from April 2018 to June 2018.

## 13. Scope for Future Research

Findings in the present paper were limited to dairy sector in Bangalore, focusing only on one company and hence it is suggested that future studies can be conducted on TQM implementation challenges, in other sectors such as Information Technology, Telecommunication as well as in geographical areas of the country. It is also suggested that future studies, on employee performance dimension, through the application of TQM practices in service sector, can be done.

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**Table-1: Gender vs. Age Cross Tabulation**

Variable		Age (years)				Total
		18 to 25	26 to 35	36 to 45	Above 45	
Gender	Female	3	15	12	1	31
	Male	30	40	38	11	119
Total		33	55	50	12	150

Source: Primary Data (2018) using SPSS (version 21.0)

**Table-2: Opinion on Importance of Quality Management**

Sl. No	Opinion	Number of Respondents	% of Respondents
1	Yes	126	84%
2	No	12	8%
3	Cannot Say	12	8%
Total		150	100%

Source: Primary Data (2018) using SPSS (version 21.0)

**Table-3: Opinion on TQM for Improving Work Efficiency of Employees**

Sl. No	Opinion	Number of Respondents	% of Respondents
1	Yes	66	44%
2	No	36	24%
3	Cannot say	48	32%
Total		150	100%

Source: Primary Data (2018) using SPSS (version 21.0)

**Table-4: Opinion on whether TQM Assists in Alignment of the Company's Goal or Individual's Goals**

Sl. No	Opinion	Number of Respondents	% of Respondents
1	Yes	72	48%
2	No	36	24%
3	Cannot say	42	28%
Total		150	100%

Source: Primary Data (2018) using SPSS (version 21.0)

**Table-5: Opinion on whether BAMUL provide the Right Environment to Apply Quality Initiatives to the New Programs of the Job**

Sl. No	Opinion	Number of Respondents	% of Respondents
1	Major extent	78	52%
2	Somewhat Little extent	42	28%
3	Not At All	30	20%
Total		150	100%

Source: Primary Data (2018) using SPSS (version 21.0)

**Table-6: Model Summary**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.315 <sup>a</sup>	0.099	0.089	0.340

a. Predictors: (Constant), TQM Practices

Source: Primary Data (2018) using SPSS (version 21.0)

**Table -7: ANOVA results for Employee Performance and TQM Practices**

Model	Sum of Squares	df	Mean Square	F	Sig.	
1	Regression	1.181	1	1.181	10.213	0.002 <sup>b</sup>
	Residual	10.753	93	0.116		
	Total	11.934	94			

a. Dependent Variable: Employee Performance  
b. Predictors: (Constant), TQM Practices

Source: Primary Data (2018) using SPSS (version 21.0)

**Table-8: Coefficients for Employee Performance and TQM Practices**

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	
	B	Std. Error	Beta			
1	(Constant)	1.543	0.309		4.995	0.000
	TQM Practices	0.354	0.111	0.315	3.196	0.002

a. Dependent Variable: Employee Performance

Source: Primary Data (2018) using SPSS (version 21.0)