

# Applications of Total Quality Management in Indian Airline Industry

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**Abstract:** *Total quality management (TQM) is an integrated management approach that aim to continuously improve the performance of products, processes, and services to achieve and surpass customer's expectations. This paper investigates Critical success factor for TQM Implementation in Indian airline industry in order to improve the performance and identify the main impediments of implementing TQM successfully. Questionnaire Survey and semi-structured interviews has been applied to achieve the aim of this paper. The purpose of this paper is to highlight the benefit of TQM implementation in the Airline industry by examining the basic principles of TQM in the airlines. The impact of TQM implementation of the three performance indicator will be assessed. The performance of TQM Airlines and Non TQM airlines is measured comparing statistically three major performance indicator Customer satisfaction, Employee satisfaction and Operational effectiveness. This paper has further identified some impediments that prevent Airline industry from implementing total quality management successfully and these impediments are : access to funds, brand image, and political factors.*

**Keywords:** total quality management, business performance, Indian airlines, TQM airline and Non-TQM airlines, India

## 1. Introduction

Since the 1980s, when the total quality management (TQM) concept was firstly defined (Deming, 1986, Crosby, 1979, Juran, 1986), practitioners and researchers alike have broadly defended the positive effects of TQM practices on firms' overall effectiveness and performance. However, although TQM has been clearly conceptualized around basic principles such as consumer focus, continuous improvement and human resource management, there has been a lack of consensus regarding its primary constructs, which prevents comparison across studies and generalizations from the empirical evidence. The 90s mark the starting point of empirical research on critical factors in TQM, although different studies have yielded different sets of TQM factors (Saraph et al., 1989; Flynn et al., 1994; Powell, 1995; Ahire et al., 1996; Black and Porter, 1996; Zhang et al., 2000; Antony et al., 2002). As a result, there is no single measurement instrument to evaluate TQM implementation.

In today's global competition and economic liberalization, quality has become one of the important factors for achieving competitive advantage. A good quality product or service enables an organization to add and retain customers. Poor quality leads to discontented customers, so the costs of poor quality are not just those of immediate waste or rectification but also the loss of future sales. Technological innovations have diffused geographical boundaries resulting in more informed customers. The business environment has become increasingly complex and the marketplace has changed from local to global. Constant pressure is applied on the management to improve competitiveness by lowering operating cost and improving logistic. Customers are becoming increasingly aware of rising standards, having access to wide range of products and services to choose from. There is an ever-increasing demand for quality product

and/or services and this global revolution had forced organizations to invest substantial resources in adopting and implementing total quality management strategies.

This research aims to find out the quality level of local airlines in India and the problems with the implementation of TQM and also will assess the effect of TQM implementation on the airline industry. Service quality is essential in the airline industry as it is a major determinant of competitiveness. Airlines paying strict attention to service quality will be differentiated from others and will in the course of doing this gain competitive advantage. Although it's been argued that price is a major determinant of airline choice by customers and most airline would rather compete on it than on service quality. However, not managing quality will mean no added and assuring value to the airlines.

(Peters, 1999) The use of a strategic approach to quality management by airlines will therefore improve their competitiveness (Ghobadian, 1994). This approach ensures that airlines remain customer focused. TQM enables innovativeness as it empowers employees to take decisions that affect their job. For the airlines to be innovative in it offerings, it requires a flexible structure which permits cooperation between different functions. The implementation of TQM involves the buying in of different units involved in the process of service delivery into the ideology and practices of quality management, which should be championed by the leadership of the airlines. That is, the support and primary activities of service delivery must inculcate quality in their activities.

## 2. Literature Review

Earlier empirical studies in TQM suggested that the successful implementation of TQM will result in improved

employee involvement, improved communication, increased productivity, improved customer satisfaction, and improved competitive advantage (Prajogo and Sohal, 2003; Antony et al., 2002; Tsang and Antony, 2001). Also, a strong competitive pressure has forced service industries to adopt QM tools and techniques to offer higher quality products and services as a way to delight and keep their customers intact. Many organizations have implemented TQM and identified CSFs for better business performance in order to improve their position in the global market which is now become an important research area in TQM.

According to Juran (1988), the basic goal of quality management is the elimination of failure; both in the concept and in the reality of products, services and processes. This does not only mean that product, services and processes will fail in fulfilling their function but that their function was not what the customer desire. Failure must be prevented in quality management and to handle this there should be planning, organizing and controlling. Four stages of quality management was treated by Dale et al (1994), this include inspection, quality control (QC), quality assurance (QA) and total quality management (TQM).

|                          |   |
|--------------------------|---|
| TOTAL QUALITY MANAGEMENT | Policy deployment<br>Involves suppliers and customers<br>Involve all operations<br>Process management<br>Performance measurement<br>Team work<br>Employee involvement                           |
| QUALITY ASSURANCE        | Quality system development<br>Advanced quality planning<br>Comprehensive quality manuals<br>Use of quality costs<br>Involvement of non production operation<br>Failure mode and effect analysis |
| QUALITY CONTROL          | Develop quality manuals<br>Process performance data<br>Self inspection<br>Product testing<br>Basic quality planning<br>Use of basic statistics<br>Paper work control                            |
| INSPECTION               | Salvage<br>Sorting, grading and re-blending<br>Corrective actions<br>Identify sources of non conformance  |

Source- Adapted from Dale et al, (1994)

**Table 2.1:** The stages of Quality Management and Characteristics

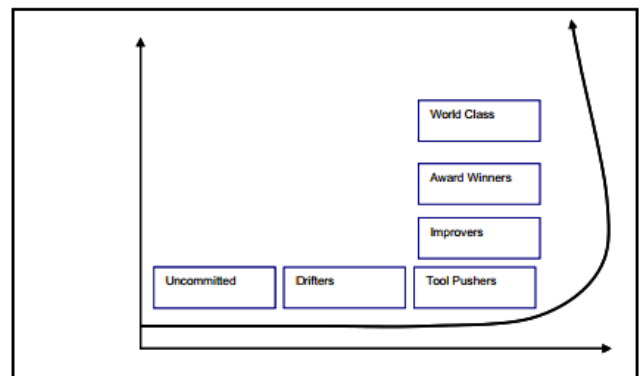
The adoption of the TQM approach is to ensure that organizations manage quality at all functional areas of operation without giving room for lapses in the inter functional processes of operations. It is an ideology which is holistic and allows for the participation and contribution of everybody to the quality improvement drive of the organization. This is aimed at satisfying customers and all stake holders alike, as the implementation brings about added value to the organization.

To benefit from the implementation of this ideology, the is the need for the basic principles which form the core values of TQM to be in aligned with the culture of the organization as they serve as the bedrock through which quality service delivery are achieved. Listed among these principles are the commitment of both management and employees to quality,

culture which gives room for all to participate, training and empowerment of employees and a focus on satisfaction of customer’s demands amongst others. The proper adoption of these principles in the working life of an organization is said to bring some added advantage to an organization, in terms of satisfying customers, employees and improvements in the operational process. While some organizations have witnessed remarkable benefits with the adoption of this ideology, others have failed due to their non compliance with the implementation procedures. This research will assess the effects of TQM implementation in the Indian airlines and also identify factors which hinder the airlines from reaping the benefits from its implementation.

Levels of TQM adoption are:

- a) Uncommitted b) Differs c) World class d) Award winners e) Improves f) Tool pushers



Source - Dale and Lascelles, (1997)

**Figure 2.1:** Levels of TQM adoption

### 3. Research Methodology

It is possible to categorize different research method approaches into two main categories depending on how they are conducted, quantitative research methods and qualitative research methods. Merriam (1994) stated that, information brought by words is qualitative while information brought by figures is quantitative. According to Patel and Davidson (1991), quantitative research methods are methods for analyzing numeric information in the form of statistical methods. While qualitative research methods, on the other hand, are methods used for analyzing other information, such as interpretations of text. Thou the two methods can be used to analyze data and information gotten from the research, they both have their differences. The main difference between the two research methods is that quantitative research methods transform the information into numbers and amounts, whereas qualitative research methods use the researcher’s interpretation of information which cannot or should not be translated into numbers or amounts. The difference between quantitative and qualitative research lies in the procedure involved in investigation. The quantitative technique is an approach which seeks to inquire into an identified problem, based on testing the theory measure with numbers and analyzing the data using statistical techniques. The main objective of the quantitative technique is to find out if a theory can be generalized.

The methodology of this research is broken down into the following framework:

- Research design
- Method of data collection
- Population and sample
- Method of data analysis

Primary data is collected from the airline companies by questionnaires and interview. Secondary data is gotten from articles, journals and online resources. We have used a T-test hypothesis to measure the difference in means of TQM airline and Non-TQM airlines using the three performance indicator.

### 3.1 Research Questions

- 1.) What are the problems possibly faced in the implementation of TQM in the airline industry?
- 2.) Who is likely to the effect of TQM implementation on the airline industry?
- 3.) What are the compares and contrast in performance of TQM Airlines and Non TQM airlines?
- 4.) What will be the benefit of TQM implementation in the airlines industry?
- 5.) What are the quality levels of local airlines in India?
- 6.) How does the finding fit with the theory in the field?

### 3.2 Results

| Airline          | Total Mean | Average Mean | Mean Diff. |
|------------------|------------|--------------|------------|
| TQM Airlines     | 42.79      | 3.89         | 1.17       |
| Non-TQM Airlines | 29.90      | 2.72         |            |

#### 3.2.1 Mean Performance for Employee satisfaction

| Airline          | Total Mean | Average Mean | Mean Diff. |
|------------------|------------|--------------|------------|
| TQM Airlines     | 21.32      | 3.55         | 0.92       |
| Non-TQM Airlines | 15.81      | 2.64         |            |

#### 3.3.1 Test of hypothesis for Employee satisfaction

|  |                             | Levene's Test for Equality of Variances |                         | t-test for Equality of Means |        |                 |                     |                       | 95% Confidence Interval of the Difference |        |
|--|-----------------------------|---|-------------------------|------------------------------|--------|-----------------|---------------------|-----------------------|---|--------|
|  |                             | F                                       | Sig.                    | t                            | df     | Sig. (2-tailed) | (2 Mean Difference) | Std. Error Difference | Lower                                     | Upper  |
|  |                             | Total Employee Satisfaction             | Equal variances assumed | 29.692                       | 0.00   | 16.07           | 114                 | 0.00                  | 12.896                                    | 0.803  |
|  | Equal variances not assumed |   |                         | 16.48                        | 78.474 | 0.00            | 11.465              | 0.406                 | 11.339                                    | 14.454 |

#### 3.2.2 Mean Performance for Customer satisfaction

| Airline          | Total Mean | Average Mean | Mean Diff. |
|------------------|------------|--------------|------------|
| TQM Airlines     | 21.32      | 3.55         | 0.92       |
| Non-TQM Airlines | 15.81      | 2.64         |            |

#### 3.2.3 Mean Performance for Operational Effectiveness

| Airline          | Total Mean | Average Mean | Mean Diff. |
|------------------|------------|--------------|------------|
| TQM Airlines     | 32.33      | 4.04         | 1.10       |
| Non-TQM Airlines | 23.57      | 2.95         |            |

The main objective of this research is to find out if the adoption of TQM principles by the local airlines will make them more effective in their operations and increase customer and employee satisfaction. In order to arrive at a logical conclusion for this research objective, a T-test hypothesis was carried out to measure the difference in means of TQM airline and Non-TQM airlines in the areas of employee satisfaction, customers' satisfaction, and effective operations. The samples were drawn from 116 respondents and from different departments of airlines.

The tests carried out shows that TQM has a great impact on the organizational performance. This confirms the theory that TQM organizations have competitive advantages in meeting customers and employees needs while also enabling the organization to be effective in their daily operations. The results confirms the true situation of the airline industry, where the new entrants have had great impact in the industry, with an effective operations which has increased the satisfaction level of customers and a work process which gives room for involvement of all employees to partake in decision making with a great concern for managing quality.

#### 3.3 T test Hypothesis analysis of Employee satisfaction, Customer satisfaction and Operational effectiveness

3.3.2 Test of hypothesis for Customer satisfaction

|                             |                             | Levene's Test for Equality of Variances |       | t-test for Equality of Means |         |               |                    |                       |   |        |
|-----------------------------|-----------------------------|---|-------|------------------------------|---------|---------------|--------------------|-----------------------|---|--------|
|                             |                             | F                                       | Sig.  | t                            | df      | Sig. (tailed) | (2 Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference |        |
|                             |                             |   |       |                              |         |               |                    |                       | Lower                                     | Upper  |
| Total Customer Satisfaction | Equal variances assumed     | 6.973                                   | 0.009 | 27.873                       | 114     | 0             | 11.465             | 0.411                 | 10.651                                    | 12.28  |
|                             | Equal variances not assumed |   |       | 28.23                        | 104.592 | 0             | 11.465             | 0.406                 | 10.66                                     | 12.271 |

3.3.3 T-test result for operational effectiveness

|                                |                             | Levene's Test for Equality of Variances |       | t-test for Equality of Means |         |               |                    |                       |   |         |
|--------------------------------|-----------------------------|---|-------|------------------------------|---------|---------------|--------------------|-----------------------|---|---------|
|                                |                             | F                                       | Sig.  | t                            | df      | Sig. (tailed) | (2 Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference |         |
|                                |                             |   |       |                              |         |               |                    |                       | Lower                                     | Upper   |
| Total Operations Effectiveness | Equal variances assumed     | 0.022                                   | 0.882 | 18.955                       | 114     | 0             | 8.49762            | 0.4483                | 7.60955                                   | 9.38569 |
|                                | Equal variances not assumed |   |       | 19.021                       | 113.899 | 0             | 8.49762            | 0.44675               | 7.6126                                    | 9.38264 |

4. Conclusion

The research findings confirmed the benefits that ensue from the implementation of TQM. It showed that TQM is a strategic tool industry can employ in the quest to remain competitive. It was also discovered that for the TQM to be properly implemented, everybody in the organization must be involved from the management to the employees and even the customers.

Also, the findings of this research as well as the one reported in literature supports the idea that the management of the organization has a major role to play in terms of ensuring a culture which permits every member of the organization to be involved and contribute to quality improvement, as the involvement of employees in detecting and monitoring the quality performance requires a decentralized organizational structure. This structure permits for innovation as it permits everybody in an organization to seek solution to a particular quality problem.

5. Limitations To The Study

The research did not also take into cognizance other factors, outside the implementation of TQM that affects the performance of the firms. This includes access to funds, brand image, and political factors. These factors go a long way in helping or hindering the performance of organizations. The TQM companies used for comparison are just between two and three years of operation and so, the research did not portray the world class expectation of TQM implementation.

6. Future Scope

It is recommended that a more studies should be carried out, which covers the whole departments of these airlines to establish the effectiveness of the implementation of TQM in the Industry, while using a representative sampling technique. Also, it will be of great benefit to ascertain the true perception of customers to service quality in India as no prior research has been carried out in that field. This will give a clue to what the customers' desire most in terms of airlines service delivery.

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