

Total Quality Management Practices and Organizational Performance: Case of Private Healthcare Sector in Sri Lanka

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Abstract

The aim of this paper is to investigate the impact of TQM practices on organizational performance of SriLankan private healthcare sector and the main objectives of this study are to assess the extent of which TQM components have been implemented in SriLankan private hospitals and to identify which of these TQM components are associated in improving the performance of hospitals. This study covered a total of eight healthcare service providers which comprised some of the leading healthcare providers in Colombo. This study further highlighted the need of a Conceptual model to evaluate the TQM components and organizational performance of the healthcare firms. Several quality awards and frameworks were established, for example the MBNQA (Malcolm Baldrige National Quality Award) which was established in 1987. This award among others was viewed as an advantageous way for categorizing the elements of TQM, hence for this reason combined with the universality of such awards this study adopted MBNQA as a guiding framework. The findings revealed that TQM implementations are linked with improved performance in healthcare sector in the country. Further, healthcare firms in Sri Lanka who expect to implement TQM to improve their performance should mainly focus on TQM practices which encompasses focusing on operations, workforce and measurement, analysis and knowledge management.

Keywords: Healthcare, Quality Management, MBNQA, Organizational performance

1. Introduction

Total quality management (TQM) is a management principle that entrust every member of the organization in order to endorse continuous and sustained improvement in quality and performance and thus establish an attitude of quality culture Talib *et al.* (2012). TQM addresses overall organizational performance and recognize the importance of each and every process that are taking place in the organization Seetharaman *et al.* (2006). Most of the studies on TQM have been undertaken initially on manufacturing firms and later have been spread to service oriented Gustafsson *et al.* (2003); Ronnback and Witell, (2008). The growth of service firms has resulted in an advanced focus on implementation of TQM philosophies in delivering high quality service to their customers. An initial review, revealed that the implementation studies on the healthcare sector is limited.

Healthcare in developing countries which were dispensed traditionally by the state has been opened up for private sector investment. The competitive nature of the industry has led the firms to undertake products and service enhancement measures including ERP systems, TQM, 5S etc. In Sri Lanka, the citizens have been dependent on the Government for its healthcare services, which is provided at no cost to them. However, lack of resources due to budgetary constraints have put a severe burden on the local healthcare services. Private healthcare services have flourished over the last two decades and increasingly even the middle to lower income categories are patronizing their services. Their growth has also had a positive effect on the public healthcare service in raising their standards and service level from what they were previously. The private healthcare sector has been chosen for the study as they have been the innovators in the field, especially in implementing processes to improve efficiency, cost effectiveness and service quality. In light of this the purpose of the present study is to investigate the impact of TQM practices on organizational performance of Srilankan private healthcare sector. The main objectives of this research are;

- ✓ Assess the extent of which TQM components have been implemented in SriLankan private hospitals
- ✓ To identify which of these TQM components are associated in improving the performance of hospitals

Therefore, based on the objectives, the intended purpose is further divided into and specified by the following two research questions:

- RQ1. Find out whether the implementation of TQM aids in improving the performance of hospitals?
- RQ2. Identify which of these TQM components are associated in improving the performance of hospitals?

2. Methodology

2.1 Conceptual Model

A significant number of industries have adopted variants of a TQM framework in their business and have derived benefits Rahman and Sohal, (2002). Numerous studies have identified critical factors in total quality management while different instruments have been developed to assess TQM implementations. Malcolm Baldrige Award, EFQM (European Foundation for Quality Management), and the Deming Prize Criteria are awarded to organizations that have reached the highest quality heights. Many firms have utilized the Malcolm Baldrige National Quality Award framework as a base model for TQM to improve quality and economic performance in the organisation and have got positive and significant results Jung and Wang, (2006); Lee *et al.*, (2010); Prajogo and Hong, (2008); Teh *et al.*, (2009). SLNQA (SriLanka National Quality Award) was established in the year 1995 as an annual award to recognize organizations in Sri Lanka for performance excellence and quality achievement and this award is based on the Malcolm Baldrige Quality Award of USA. Since the research is being carried out in a Sri Lankan context, it was deemed appropriate to use MBNQA criteria as a guiding framework, than other quality frameworks.

The link between TQM and performance have been investigated and established. While examining the relationship between TQM and performance, scholars have used different performance measures including financial, innovative, operational and quality performance measures Prajogo and Sohal, (2003). Traditionally, business performance has been measured mainly through financial measures. Profit, market share, earnings, and growth have been regarded as critical indicators of business performance. Kaplan and Norton (1996) emphasized that financial indicators measure past performance only. Therefore, in order to overcome shortcomings of traditional business performance systems, they added non-financial categories to the traditional performance measurement system. However due to restrictive access to information, the study mainly relied on selected financial measures together with a few selected non-financial measures to access healthcare performance.

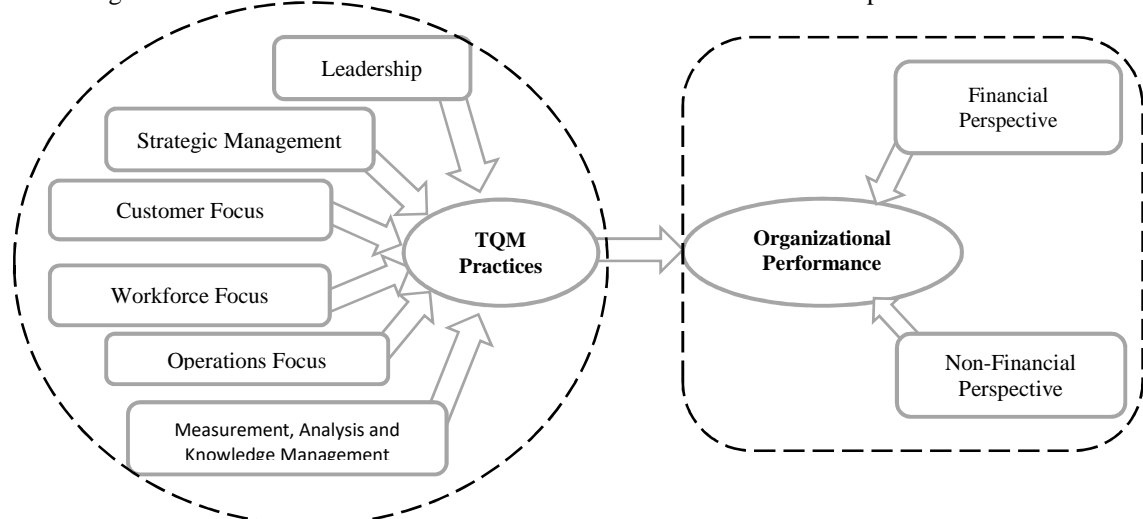


Figure 1: Conceptual Framework integrating MBNQA and Healthcare Performance factors.

Figure 2, above shows the conceptual framework that has been developed integrating the six elements of TQM practices with financial and non-financial perspective of organizational performance.

In this section, a brief presentation of the six MBNQA criteria is provided through which the empirical analysis aims to validate these six components as constructs and assess the quality of management practices in SriLankan private hospitals:

- A. **Leadership:** Leadership has the ultimate responsibility for setting the strategic direction and establishing systems that will facilitate high organizational performance. The leadership element has multiple dimensions: the creation of a unifying purpose, motivating change, managing the environment, and cultivating a participatory approach to improved performance. Management and leadership in health care involved an individual's efforts provide professional care, devise creative strategies, cost-controlled programs, along with the abilities to research and analyze systems critically and chart growth in response to rapid health care changes Tabish, (1998).
- B. **Strategic Management:** It is management through collaboration, communication and integration. Strategic management involves developing a clear mission, long-term strategy, and long and short-term goals, corporate analysis, strategic option generation, strategy evaluation and implementation and finally monitoring and control. Strategic planning is a skill which requires practice; organizations that most practice this skill have a higher chance of improving their performance. This element focusses on how the organizations go about formulating and implementing their plans with a focus on the customer and the workforce David, (2001).
- C. **Customer Focus:** Becoming a customer oriented organization has become one of the major challenges facing organizations, tailoring and implementing strategies aimed at improving customer satisfaction should be at the heart of any organization. This element focuses on how attentive the organization is to customer needs and expectations and how effective the organization is in terms of managing customer relationships Armstrong, (1999).
- D. **Workforce Focus:** An important determinant of quality health care is the focus on the employee delivering the service. An important component of employee focus is providing employees constructive feedback about the quality of care delivered by them. Clinical quality and performance should be systematically measured to provide feedback to the providers of care regarding their performance on the job Donabedian, (2000).
- E. **Operations Focus:** This element focuses on the organization's work, the design and delivery of health care services, innovation, and operational effectiveness to achieve organizational success now and in the future.
- F. **Measurement, Analysis and Knowledge:** This element is concerned with the scope, management and use of data and information to maintain a customer focus, to drive quality excellence and to improve performance.

The components of the model have been further operationalized using key constructs to suit the Sri Lankan healthcare.

2.2 Sampling frame and data collection

In order to achieve the objectives of the study private hospitals of Sri Lanka are considered as the population of this study. The population consist of 250 private hospitals registered under PHSRC (Private Health Services Regulatory Council) out which 100 hospitals are concentrated in Western province and out of them 6 are listed healthcare firms at the Colombo Stock Exchange (CSE). Therefore, hospitals in Western province is considered as the sample frame for this study which accounts for over 40% of the population of private hospitals. Due to resource constraints convenient sampling was used and snow ball sampling method was applied to collect data from healthcare firms.

Table 1: Selected Categories of TQM practices in healthcare

Category	Sub Category	Key Constructs
Leadership	Leadership	Motivation
		Communication
		Monitor & Control
		Problem Solving
	Governance and Social Responsibilities	Legal compliance, ethics Conservation of natural resources Societal responsibility
Strategic Management	Strategy Development	Strategic Planning
	Strategy Implementation	Strategic Control
Customer Focus	Voice of the Customer	Capture & Record
		Action
Workforce Focus	Workforce Environment	Workforce capability and capacity
		Workforce support
		Hospital Facilities
	Workforce Engagement	High Performance Compensation and recognition
Operation Focus	Work Process	Work Process Design
		Process Improvement
Measurement, Analysis and Knowledge Management	Knowledge Management, Information Technology	Capture Information
		Analyse Information
		Disseminate Information

- Target Population: All Private healthcare firms in Sri Lanka (250)
- Sampling frame: Includes all listed healthcare firms and non-listed firms in western province of Sri Lanka (100)
- Sampling method: Non-probability sampling
Convenient sampling and snowball sampling
- Sample size: 6 Healthcare Firms (3 listed and 3 non-listed firms)
- Sampling units: QA (Quality Assurance Department) Staff

2.3 Data gathering instruments

Interviews: As the initial step for studying the relationship between TQM practices and organizational performance interviews were conducted with QA managers. The interview was a semi-structured one as to get the expert opinions.

Questionnaire: The knowledge gained by the literature review and the information collected from the interviews (expert opinions) was used to prepare a structured questionnaire. Questionnaire was mainly separated into two sections. The first section consists of questions to measure the TQM practices of the organization. The respondents were requested to rate the degree to which the performance of each measure was actually achieved using a 5-point likert scale. Section two consists of questions to measure the healthcare firm's performance.

2.4 Data analysis techniques

The collected data was analyzed using SPSS statistical package for windows. SPSS is a widely used program for statistical analysis in social science. To make sure that this study is truly measuring what it set out to measure and to provide assurance that the findings reflect an accurate measure of the six elements of MBNQA, information regarding validity and reliability were considered. Further the statistical calculations such correlation and regression were conducted in order to address the research questions.

2.5 Results

Cronbach's alpha is the most common measure of internal consistency ("reliability"). It is most commonly used when we have multiple Likert questions in a survey/questionnaire that form a scale and we wish to determine if the scale is reliable. Since the questionnaire consists of 49 questions to measure independent variables and 10 questions to measure dependent variables, the reliability of the independent variables questions and dependent variables questions were tested separately using Cronbach's alpha. The questionnaire is acceptable if the Cronbach's alpha is greater than the 0.7. Since Cronbach's alpha is 0.926 for independent variables and 0.840 for dependent variables, it indicates the internal consistency is in the acceptable level for the selected scale.

SPEARMAN'S coefficient of rank correlation describes the relationship between sets of rank data. Since the data collected are ordinal and ranked data, SPEARMAN'S coefficient of rank correlation was used as the test statistic. Thus, following alternative hypotheses were proposed in order to identify the relationships between the MBNQA dimensions and the firm's performance.

H1: Leadership has an impact on Firm's Performance.

H2: Strategic Management has an impact on Firm's Performance.

H3: Customer Focus has an impact on Firm's Performance.

H4: Workforce Focus has an impact on Firm's Performance.

H5: Operations Focus has an impact on Firm's Performance.

H6: Measurement, Analysis and Knowledge Management has an impact on Firm's Performance.

Table 2: Analysis of TQM practices

Factor	Coefficient	p-Value	Relationship
Leadership	0.467	0.470	Moderately Positive
Strategic management	0.267	0.270	Weak Positive
Customer focus	0.328	0.150	Weak Positive
Workforce focus	0.523	0.019	Strong Positive
Operations focus	0.589	0.000	Strong Positive
Measurement, analysis and knowledge management	0.493	0.003	Moderately Positive

A multiple regression was run to predict firm's performance from leadership, strategic management, customer focus, workforce focus, operations focus and measurement, analysis and knowledge management. The

assumptions of linearity, multicollinearity, independence of errors, homoscedasticity, unusual points and normality of residuals were met.

2.5.1 Determining the Model Fit:

Table 3: Model Summary of TQM Practices Vs Firm's Performance

Model Summary					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.885a	.783	.756	.1179	1.631
a. Predictors: (Constant), Measurement, Analysis and Knowledge Management, Operations Focus, Strategic Management, Customer Focus, Workforce Focus, Leadership					
b. Dependent Variable: Firm's Performance					

R is the correlation between the predicted scores and the actual scores of the dependent variable. A value of 0.885, indicates a good level of prediction.

2.5.2 Explaining the Total Variance:

R² value (also called the coefficient of determination) represents the proportion of variance in the dependent variable that can be explained by the independent variables (technically, it is the proportion of variation accounted for by the regression model above and beyond the mean model). The value of 0.783 indicates that the independent variables explain 78.3% of the variability of the dependent variable, firm's performance.

But, according to Adjusted R square value it is concluded that 75.6% of the variability of the dependent variable, firm's performance is explained by the independent variables: leadership, strategic management, customer focus, workforce focus, operations focus and measurement, analysis and knowledge management. In specific leadership explains 3.6% variability, strategic management explains 2.5% variability, customer focus explains 4.3% variability, workforce focus explains 10.9% variability, operations focus explains 65.7% variability and measurement, analysis and knowledge management explains 17.1% variability of firm's performance.

2.5.3 Statistical Significance:

The F-ratio in the ANOVA table (see below) is the ratio of the mean sum of squares for regression to the mean sum of squares for the residuals. It tests whether the regression model is a good fit for the data.

Table 4: ANOVA Statistics of TQM Practices Vs Firm's Performance

ANOVA						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	246.573	6	41.096	32.362	.000 ^b
	Residual	60.954	48	1.270		
	Total	307.527	54			
a. Dependent Variable: Firm's Performance						
b. Predictors: (Constant), Measurement, Analysis and Knowledge Management, Operations Focus, Customer Focus, Strategic Management, Workforce Focus, Leadership						

The table shows that the independent variables statistically significantly predict the dependent variable, such that leadership, strategic management, customer focus, workforce focus, operations focus and measurement, analysis and knowledge management statistically significantly predict Firm's Performance, $F(6, 48) = 32.362$, $p < 0.05$.

2.5.4 Statistical Significance of the Independent Variables:

The statistical significance of each of the independent variables is tested to identify whether the unstandardized (or standardized) coefficients are equal to 0 in the population. If $p < 0.05$, can conclude that the coefficients are statistically significantly different to 0. Based on the results it could be concluded independent variables such as workforce focus, operations focus and Measurement, Analysis and Knowledge Management are statistically significant.

Estimated Model Coefficients:

The general form of the equation to predict firm's performance from workforce focus, operations focus and measurement, analysis and knowledge management is:

$$\text{Firm's Performance} = 22.583 + (0.172 * \text{workforce focus}) + (0.587 * \text{operations focus}) + (0.278 * \text{measurement, analysis and knowledge management})$$

3. Findings

According to statistical analysis from multiple regression model it can be concluded that Firm's Performance is mainly affected by Workforce focus, Operations Focus and Measurement, Analysis and Knowledge Management. Here Firm's Performance is measured through 10 KPIs namely Net profit Ratio (%), Growth of Revenue, Return on Assets (ROA), Capacity Utilization (%), Hospital bed occupancy revenue (%), Infant mortality rate (%), Neonatal mortality rate (%), Maternal mortality rate (%), Inpatient/Staff ratio (%) and Number of Awards received.

Hence the independent variables with strong predicting power of performance are Workforce focus, Operations Focus and Measurement, Analysis and Knowledge Management. These three variables are positively and strongly related to performance when compared with the other three variables which are positively correlated to performance but with less significance. Based on these results it is important to emphasize that this study is not suggesting that certain factors are more important than other factors, nor it is suggesting that the MBNQA criteria is not effective enough because some of the factors are strongly related to performance.

Although the correlations among the six variables are relatively moderate, the regression analysis sorted out the strong predictors from the moderate as well as weak ones of firm's performance. The implication of these results suggest that if quality managers of surveyed hospitals want to improve healthcare firm's performance, they ought to focus more on Workforce focus, Operations Focus and Measurement, Analysis and Knowledge Management; this should not be taken at face value which means that the other less significant factors should not be ignored. This finding is consistent with findings of Anton Sabella Rami Kashou Omar Omran (2014) which concludes that the independent variables with strong predicting power of performance are process management, people management, and information and analysis. These three variables are positively and strongly related to performance when compared with the other three variables which are positively correlated to performance but with less significance.

Moreover the results of this study are quite similar to those of Ahire *et al.* (1996) where he concluded that human resource management is the most closely related factor to performance. Also, Samson and Terziovski (1999) produced similar results concluded that human resource management as factor has a strong predicting power of performance. As for the R² which had a value of 0.553, it is indeed significant for which a substantial amount of the dependent variable performance results is explained. Altogether, the findings in this study as well as other studies such as those of Samson and Terziovski (1999); Ahire *et al.* (1996) it can be concluded that the elements or factors that make up TQM are substantially good for any healthcare firm as long as they are implemented the right way.

3.1 Framework Development

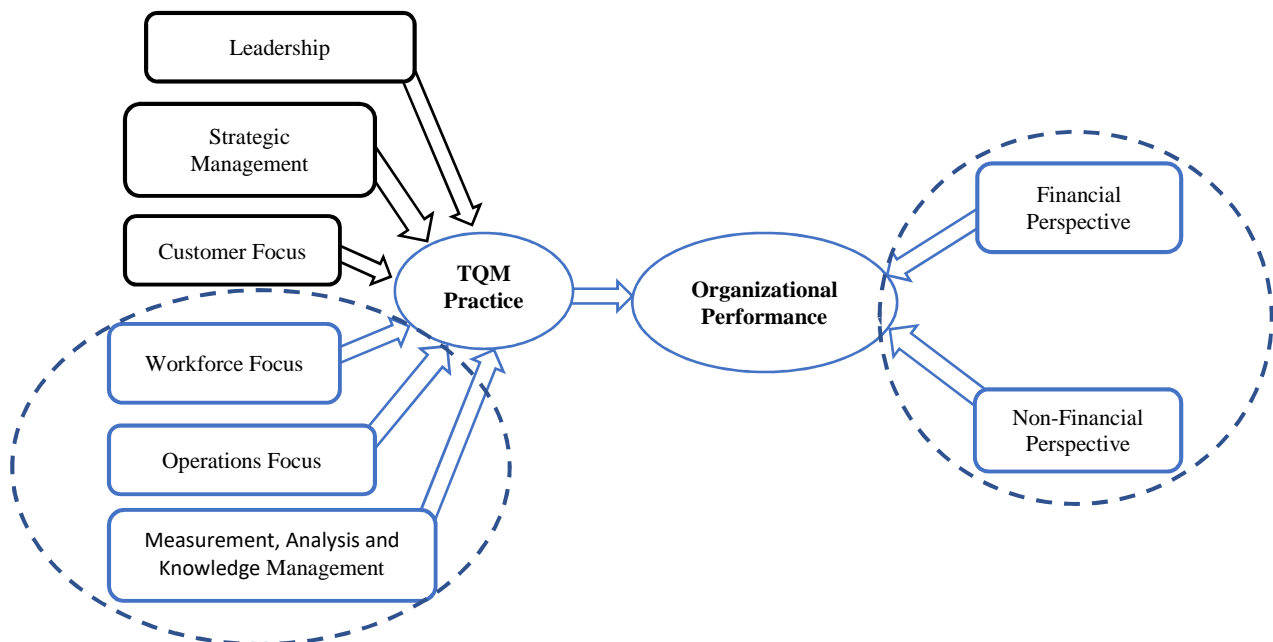


Figure 2: Revised Framework

4. Discussion

This study was conducted to identify the impact of TQM practices on organizational performance of SriLankan private healthcare sector. The main objectives of the study were to assess the extent of which TQM components have been implemented in SriLankan private hospitals and to identify which of these TQM components are associated in improving the performance of hospitals.

Through the extensive literature review a conceptual model has been developed to study the impact of TQM components and organizational performance of the healthcare firms. The components of the model has been further classified into sub categories and key constructs to suit the SriLankan healthcare. Based on this, a questionnaire was developed and distributed among eight private healthcare firms in SriLanka which were chosen for the study. The gathered data was analyzed using SPSS statistical package using techniques such as multiple regression and spearman correlation.

From the analysis of multiple regression models, it could be concluded that the factors namely Workforce focus, Operations focus and Measurement, Analysis and Knowledge Management were influencing factors for healthcare firm's performance. However, Operations Focus is the most significant influencing factors for firm's performance. This finding is consistent with findings of Anton Sabella Rami Kashou Omar Omran (2014) which concludes that the independent variables with strong predicting power of performance are process management, people management, and information and analysis. These three variables are positively and strongly related to performance when compared with the other three variables which are positively correlated to performance but with less significance.

Conclusions from Spearman's correlations also gave a similar result showing that the Operations focus as the strong and statistically significant factor of firm's performance. The next best contributing factors were Workforce focus and Measurement, Analysis and Knowledge Management.

5. Directions for future research

The main limitation of this study is that the research was focusing only on private healthcare sector with a relatively small sample size. The focus on public healthcare sector has been excluded due to the reasons discussed in the introduction of the research. Hence, the findings cannot be generalized to all healthcare firms in Sri Lanka. Future research is suggested to cover a larger size of sample as the comparison with results based on a larger sample would help to verify the validity of the results. Samples from various sectors (Public and Private) should be included in future research to allow the detailed cross-sectorial comparisons. Moreover, the theoretical

model can be further examined in other service organizations including education, bank, insurance, hotel etc. Additional research is needed to extend the understanding of the constructs used in this research, by using different ways to investigate them.

On the other hand participants were not willing to respond to a questionnaire and they preferred discussions. Therefore, collecting responses through questionnaire was very hard and time consuming because respondents shared their TQM practices related information verbally as well while they respond to survey. Most of the respondents were scared to provide the information about the effectiveness and frequency of quality management practices of their firm. Therefore, the researcher has to put extra effort to extract the information required.

In this research, it has been identified that the Operations Focus, Workforce Focus and Measurement, Analysis and Knowledge Management are the most critical factors for the firm's performance in healthcare sector in Sri Lanka. This research can be extended to identifying the best practices of Operations Focus, Workforce Focus and Measurement, Analysis and Knowledge Management to recommend firms to invest in more in order to gain full potential of firm's performance.

Considering time and cost factors convenience sampling method and snowball sampling methods were used which may have biased responses. This study could guide the management to align consumers and employees behavior towards the practice of active management of service quality and performance, to set a benchmarking themselves and with other healthcare organizations and most importantly linking together the elements of strategy particularly the operations focus, workforce focus and measurement, analysis and knowledge management and performance outcomes in powerful and sensible ways. This study can be the starting point of regular strategic planning process within the healthcare organization and ensure continuous quality improvement. Overall, this study is a motivation to healthcare organizations to embrace MBNQA criteria and improve their performance with respect to service quality.

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