Total Quality Management Practices In Boosting Performance of Corporate Hospitals - A Study

SYEDA AMTUL MAHABOOB

Department of Management and Commerce, Maulana Azad National Urdu University, Telangana.

Abstract

The Healthcare industry is on its boom in the city of Hyderabad. People not only from various cities of India but also from foreign countries come to Hyderabad for their medical treatment. There are various corporate Hospitals in the city catering to the needs of the people. The management of the Corporate Hospitals being very keen about delivering quality services is maintaining a quality department. Total Quality Management Practices are adopted as one of the ways to ensure quality. The present study is conducted in five Corporate Hospitals of the city to know whether Total Quality Management Practices has any effect on the Organizational Performance of the Hospitals.The data was collected in the form of responses from nurses, doctors, supporting and admin staff of the Hospitals by stratified random sampling method. It was found that there is a positive influence of the total quality management practices on the performance of the Hospitals.

Introduction

There is a great potential in the industry of Healthcare. It accounts to be one the world's largest revenue generating industry of US 2.8$ Trillion approximately. Indian Healthcare has emerged to be one of the largest service sectors of the country contributing to five percent in India's GDP and four million people being offered jobs in the industry. Twelve percent of expansion has been experienced by the sector over the last four years according to the Investment Commission of India. Six to seven percent of India's GDP is expected to be contributed by the sector and will offer jobs to more 2.5 million people as per the reports of CII-McKinsey (Venkat Ramana 2012).

There has been an increasing awareness in the customers of the Healthcare industry i.e., the patients about quality and it is being highly recognized by the management of the Hospitals that delivering quality services is the only way of sustaining in the national as well as international market.

The rising literacy rate, higher levels of income and media creating deeper awareness about quality has led the Indian shopper quicker to claim eminent services in Healthcare. Such pointers have not only been the part of the cause of the development of Healthcare sector in India but also making the moves towards the Accreditation (Venkat Ramana 2012).

Accreditation is a set of standards to promote quality improvement regulated either by the government or private agencies. The management of the Hospitals applies to the accreditation bodies periodically once or twice in a year to get certified that they maintain quality services in their Organization. This also enables them to show it to their customers that a certification has been obtained and the services of the Hospital can be completely relied upon.

In Indian scenario NABH (National Accreditation Board of Health) is the certifying body which provides accreditation to the Hospitals. Almost every Corporate Hospital is accredited by NABH (National Accreditation Board of Health) and maintains a quality department.

Total Quality Management has emerged as one of the useful tools in delivering services with quality to the patients in the Healthcare Sector. Though their use started first in manufacturing industry but later they were adopted in the services industry like Healthcare and Education.

TQM is explained as a management tactic which endeavors to achieve and prolong long term firm's performance by inciting personnel ratings and involvement, gratifying consumer requirements and suppositions, paying equal importance to morals and ethics of the community, tuning with the laws of the government (Poornima M.Charantimath 2013).

The present study utilizes an award model called MBNQA to recognize the foremost TQM Dimensions. MBNQA (Malcolm Baldrige National Quality Award) Model is a criterion given via National Institute of Standards and Technology and this award is given annually by the institution to recognize the manufacturing and service industries (including Healthcare) that excel in their services.

MBNQA (Malcolm Baldrige National Quality Award) Model identifies the following TQM Practices and links them with the performance of the Organization (NIST 2018).
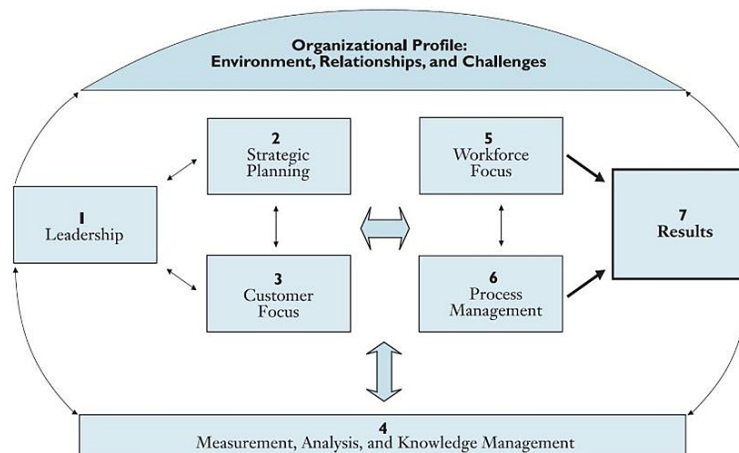

Fig.1: MBNQA (Malcolm Baldrige National Quality Award Model)
SOURCE: Total Quality Management by K. ShridharaBhat (2011) Himalaya Publishing House

The TQM Practices highlighted by MBNQA can be listed as:

- Leadership
- Strategic Planning
- Customer Focus
- Measurement, Analysis and Knowledge Management.
- Workforce Focus
- Operations Management (Processes)

It is being recognized by several researchers that TQM practices can act as an effective tool to improve the performance of the Hospitals. In order to get an understanding that whether the TQM practices has an influence on the performance of the Hospitals; the present research has been conducted. The present study tests the influence of these TQM Dimensions shown by MBNQA model on the Performance of five selected private Hospitals of Hyderabad city.

Research Question
The following is the research question of the Study:
• Is there any influence of TQM Dimensions on the Performance of five private Hospitals of Hyderabad city?

Research Objective
The following is the objective of the research:
• To study the influence of TQM Dimensions on the Performance of the hospitals.

Review of Literature
The research on Total Quality Management in Hospitals has not been discussed until the late nineteenth century (Goldstein & Schweikhart 2002).

Most of the researchers who did their research on TQM in Healthcare industry utilized the MBNQA (Malcolm Baldrige National Quality Award) Model (Manjunath Usha 2007).

Lin and Clousing (1995) conducted a study of thirty one hospitals in United States and discovered that most of the hospitals follow TQM and bring an improvement in the key performance areas of the Hospital.

Wilson and Collier (2000) performed a study in hospitals of America and a found a positive relationship between TQM practices and Organizational Performance.

Meyer and Collier (2001) verified the associations in Malcolm structure using the data from two hundred and twenty US hospitals and concluded that the causal relationships in the Baldrige criteria are statistically significant.

Goldstein & Schweikhart (2002) collected the data from two hundred and twenty American Healthcare institutions and examined associations among the MBNQA criterion for Medical institutions of TQM and performance of these Hospitals.

R. Rohini (2006) performed a study in Hospitals of Karnataka to check the influence of TQM Practices on the performance of these medical organizations using SERVQUAL and MBNQA Model.

Alexander, Weiner, & Griffith (2006) examined the relationship between the Quality improvement (QI) implementation in one thousand seven hundred and eighty four hospitals and Organizational Performance. The results suggested that QI (Quality Improvement) had a defined impression on global procedures of medical institution's performance and the ways to Quality Improvement affect in these areas.

Manjunath Usha (2007) performed a study throughout India to evaluate the efficiency of TQM Practices in bringing about a change in performance of the Hospitals.

Fereshteh Farzianpour *et al* (2011)evaluated the performance of a medical teaching institution federated to an Iranian University of Medical Sciences based on Malcolm standard structure. The implementation was assessed by dual queries which were based on process category and result category. The outcomes of the study pointed that the Malcolm framework acts as a strongest technique to evaluate excellence assessment of the Iranian medical institutions.

Apinan Aueaungkul (2013) collected the perceptions of the respondents from eighty four hospitals and forty three educational institutional of Thailand. The exploration scrutinized the level of TQM adoption in hospital and universities, underlined the critical success factors and gathered data to elucidate the impact of Thai cultural practices on TQM adoption. He also insisted the eminence of Malcolm structure in enhancing performance of medical institutions.

Sang M. Lee, Don Hee Lee and David L. Olson (2013) explored 254 Korean medical institutions for evaluating association of the seven categories of Malcolm structure and results of the institutions. They utilized various quantitative approaches, evaluated their assumption depending on the information gathered from two hundred and fifty four

medical institutions. The outputs of the research indicated that the different elements of healthcare procedures are highly related with every element of Malcolm structure in the hospital firm.

Salaheldin Ismail Salaheldin (2015) carried out a research to explore the function ofimprovement on the Dimensions of total quality managing execution in the hospitals of Jordan.

Beatrice Dinda *et al* (2016) adopted co relational survey research in hospitals of Nairobi. The research elaborated those procedures of excellence (Data Analysis, Process Administration, encouragement of senior executives) were important indicators of firm performance. Excellence maintenance procedures were found to be great indicators of medical institution's attainment in corporate Nairobian medical institutions. Procedures of excellence had an influence on hospital performance.

The present study also aims at connecting with the results of the previous researches and finding the link between the total quality management practices and performance of the hospitals.

Research Methodology
Sources of Data Collection (primary)
Opinions of the administration staff, physicians, nurses and supporting workforce concerning different Dimensions of TQM and Hospital execution were collected through a tested and adopted structured questionnaire for the primary data.The data obtained is continuous in nature.

Questionnaire
A tested structured questionnaire by Manjunath (2007) was used to collect the responses of the hospital staff regarding each of the TQM practices using a five point likert scale ranging from Strongly Agree to Strongly Disagree and for Organizational Performance, a five point likert scale ranging from very low to very high. The questionnaire had already been tested by Manjunath (2007) for all the TQM Dimensions of MBNQA Criterion.

Sources of Secondary Data
Secondary data for the study was collected from various online and published journals, thesis, books and internet websites. The secondary data collected for the study contained various studies showing the association of TQM practices with the performance of the healthcare organizations.

- The Study is Descriptive in nature and the data collected is tested in an analytical manner.

Population
Five corporate hospitals of the city namely Premier hospital, Olive hospital, Virinchi hospital, Care hospital and Apollo hospital were chosen for the study. Total number of employees of the five hospitals is 3445.

Sampling Unit
346 Employees from five corporate hospitals which include administrative staff, physicians, nurses and supporting staff. The sample size confirms with the Krejcie and Morgan's table. Krejcie and Morgan (1970) in their article "Determining Sample Size for Research Activities" gave a table for determining the sample size for various populations. Thus the sample taken in this study validates with the Krejcie and Morgan's table.

Sampling Method
Stratified Random Sampling method was used. Hospital staff is divided into four strata namely administrative staff, doctors, nurses and supporting staff.

- Ten percent of the employees are taken from each stratum. All the primary data measured in continuous scale assuming the values on the scale are equi-distant.

Sampling Frame

Hypothesis
The hypothesis of the study is follows:

- H_{01}: There is no statistically significant influence of TQM Dimensions on Hospital's Performance.
- H_1: There is a statistically significant influence of TQM Dimensions on Hospital's Performance.

Data Analysis and Interpretation
To test the influence of TQM Dimensions on Performance of five private Hospitals, Simple Linear Regression has been used.

Table 1: Sampling Frame

Hospital	Doctors	Nurses	Administrative Staff	Supporting Staff	Total
PREMIER	5	10	5	25	45
OLIVE	6	12	5	27	50
CARE	8	17	5	40	70
VIRINCHI	8	20	6	47	81
APOLLO	9	16	6	69	100

Overall total no of employees selected = 346.

The influence of each TQM Dimension on the Hospital Performance is checked by taking each practice alone as an independent variable and Organizational Performance as a dependent variable.

Conceptual Framework of the Research
Independent Variables
TQM practices from MBNQA model were regarded as independent variables.
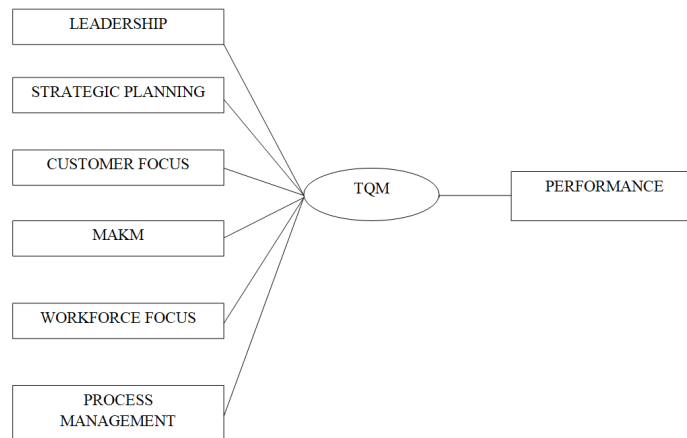
Fig. 2: Conceptual Model of the study

Dependent Variable
Performance of the hospital was regarded as a dependent variable.

The above figure depicts the conceptual framework of the study with TQM practices as independent variables and the performance of the hospital considered dependent.

Statistical Analysis
Simple Linear Regression Analysis forexamining the influence of Leadership on Hospitals Performance:

Table 2: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.614	0.377	0.375	3.20303

Table 3: Anova Table

Model	Sum of Squares	df	Mean Square	F	Sig
1 Regression	2136.916	1	2136.916	208.289	0.000
Residual	3529.234	344	10.259		

Table 4: Coefficients Table

Model	UnstdCoeff B	StdCoeff Beta	t	Sig
Constant	12.141		7.449	0.000
Leadership	0.918	0.614	14.432	0.000

Dependent Variable: Organizational Performance
Independent Variable: Leadership

The regression correlation coefficient, R, is simply the Pearson correlation coefficient between the scores predicted by the regression model (i.e., the predicted scores) and the actual values of the dependent variable. In this model, R is a measure of the strength of the linear association between these two variables and can give an indication as to the goodness of the model fit with a value that can range from 0 to 1, with higher values indicating a stronger linear association. Table 2 shows the R Square alue of 0.377 i.e., thirty seven percent change, moderate lefgel of change in the Performance can be predicted by the Leadership and the Coefficient Table 4 confirms to the Regression Coefficient for Leadership is the change in the dependent variable Organizational performance for one unit change in the independent variable occupational stress. For one unit of increase of Leadership 0.918 units of performance will be effected. If we consider standardized coefficients a beta value of 0.614 indicates that a change of one standard deviation in the independent variable Leader ship results in a 0.382 standard deviations Organizational performance will be effected.

Simple Linear Regression Analysis for examining influence of Strategic Planning on the Hospitals Performance

Table 5: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.471	0.222	0.220	3.57957

Table 6: Anova Table

Model	Sum of Squares	df	Mean Square	F	Sig
Regression	1258.371	1	1258.371	98.208	0.000
Residual	4407.779	344	12.813		

Similarly, Table 5 shows the R Square (regression) value of 0.222 i.e., twenty two percent change in the Performance can be predicted by the Strategic Planning and the Coefficient table 7 displays us the Regression Coefficient for Strategic Planning is 0.484.

Table 7: Coefficients Table

Model	UnstdCoeff B	StdCoeff Beta	t	Sig
Constant	19.200		11.571	0.000
Strategic Planning	0.484	0.471	9.910	0.000

Dependent Variable: Organizational Performance
Independent Variable: Strategic Planning

Simple Linear Regression Analysis for examining influence of Customer Focus on the Hospitals Performance:

Table 8 shows the R Square (regression) value of 0.070 i.e., a certain variation in the Performance that can be predicted through Customer Focus and the Coefficient table 10 shows that the Regression Coefficient for Customer Focus is 0.445.

Simple Linear Regression Analysis for examining influence of Measurement, Analysis plus Knowledge Management onthe Hospitals Performance

Table 8: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.264	0.070	0.067	3.91443

Table 9: Anova Table

Model	Sum of Squares	df	Mean Square	F	Sig
Regression	395.120	1	395.120	25.786	0.000
Residual	5271.030	344	15.323		

Table 10: Coefficients Table

Model	Unstd Coeff B	Std Coeff Beta	t	Sig
R Constant	26.042		13.847	0.000
Customer Focus	0.445	0.264	5.078	0.000

Dependent Variable: Organizational Performance
Independent Variable: Customer Focus

Table 11: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.434	0.189	0.186	3.65598

Table 12: Anova Table

Model	Sum of Squares	df	Mean Square	F	Sig
Regression	1068.192	1	1068.192	79.918	0.000
Residual	4597.959	344	13.366		

Table 13: Coefficients Table

Model	Unstd Coeff B	Std Coeff Beta	t	Sig
Constant	15.915		7.224	0.000
MAKM	0.521	0.434	8.940	0.000

Dependent Variable: Organizational Performance
Independent Variable: Measurement, Analysis and Knowledge Management

Table 11 shows the R Square (regression) value of 0.189 i.e., a certain variation in the Organizational Performance that can be predicted through the Measurement, Analysis and Knowledge Management. The Coefficient table 13 displays us the Regression Coefficient is 0.521.

Simple Linear Regression Analysis for examining influence of Workforce Focus towards the Hospitals Performance

Table 14 shows the R Square (regression) value of 0.230 i.e., twenty three percent variation in the Organizational Performance that can be predicted through Workforce Focus. The Coefficient table 16 displays us the Regression Coefficient is 0.361.

Simple Linear Regression Analysis for examining how Process Management has an influence on the Hospitals Performance

Table 14: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.479	0.230	0.228	3.56154

Table 15: Anova Table

Model	Sum of Squares	df	Mean Square	F	Sig
Regression	1302.650	1	1302.650	102.695	0.000
Residual	4363.500	344	12.685		

Table 16: Coefficients Table

Model	Unstd Coeff B	Std Coeff Beta	t	Sig
Constant	17.973		10.311	0.000
Workforce Focus	0.361	0.479	10.134	0.000

Dependent Variable: Organizational Performance
Independent Variable: Workforce Focus

Table 17 shows the R Square (regression) value of 0.369 i.e., thirty six percent variation in the Performance that can be predicted through Process Management. The Coefficient table 19 shows that the Regression Coefficient is 1.006.

Table 17: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of them Estimate
1	0.607	0.369	0.367	3.22500

Table 18: Anova Table

Model	Sum of Squares	df	Mean Square	F	Sig
Regression	2088.331	1	2088.331	200.789	0.000
Residual	3577.819	344	10.401		

Table 19: Coefficients Table

Model	Unstd Coeff B	Std Coeff Beta	t	Sig
Constant	9.723	5.314	0.000	
Process Management	1.006	0.607	14.170	0.000

Dependent Variable: Organizational Performance
Independent Variable: Process Management

From the above analysis we deduce that a positive influence of TQM Dimensions on the Performance of the five Corporate Hospitals is present.

Therefore we discard the null hypothesis and agree to the alternate hypothesis which affirms that there is a major influence of TQM Dimensions on the Hospitals Performance.

Findings
It can be deduced from the analysis of the simple linear regression analysis tables that every TQM practice had a positive influence on the Hospital performance. The coefficients tables showed a significant positive connection of each TQM Dimension with the performance.Therefore it can be said that TQM Practices acts as useful tool in improving the Performance of the selected private Hospitals of Hyderabad.

Constraints
There were two constraints of the research:

• The research focused on the TQM adoption only in selected corporate hospitals and hence the results need not apply to all the hospitals in the country.
• This study covers only corporate hospitals but not the public hospitals.

Conclusion
The present study was conducted with an objective of finding whether TQM Dimensions can boost Performance of the Hospitals in Hyderabad. The previous studies done on showing an association of Total Quality Management Dimensions with performance of the healthcare institutions found a positive result. Hence by observing the results of the previous studies, it was decided to test an association

of the TQM Dimensions with the performance of the Hospitals in Hyderabad city. The data collected on TQM dimensions and performance were tested to know whether there exists an influence of the independent variable on the dependent by the tool of regression. The positive influence was observed from the statistical analysis of regression.The results of the present research connected well with the results of the previous studies and gave the same association.

It is concluded that TQM Practices acts an effective tool in improving the Organizational Performance of the Hospitals and they should be applied if a Hospital wants to boost its performance. The conclusion of the study however is limited to selected hospitals. The study can cover Public Hospitals of the city in future to know if TQM is being followed in these Hospitals too and whether they are efficient enough in improving the Organizational Performance of these Hospitals.

Conflict of Interest
The author does not have any conflict of interest with anyone.

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