Chapter VI

RESEARCH FINDINGS AND CONCLUSIONS

6.1 Overview

In this chapter the findings, summary and conclusions of the research are furnished in detail. The empirical research findings are discussed in two parts. The first part of the findings is based on the results of the analysis of the descriptive statistics used in the study and the second part is based on the inferential statistics. Followed by this a brief summary of the research is given. The scope for further research is also listed. Finally, the contributions made by this research and the conclusions have been highlighted.

6.2 Research Findings

The empirical research findings are based on the results of analysis of both the descriptive and inferential statistics. The findings through the descriptive statistics have provided general information about the data gathered in this research. The findings of hypothetical research model testing were through Structural Equation Modeling (SEM). The following paragraphs summarises the findings of this research.

6.2.1 Major findings

The major findings of the study are summarized below:

1. The demographics profile of the respondents probed that the majority of the respondents were

   - females (70%)

   - in the age group of 25-45 years
• graduates or post-graduates
• drawing salary up to Rs. 40,000 per month
• with an experience of up to 10 years.

2. The descriptive statistics also revealed that the respondents were in agreement with the key indicators of the research with a data mean of 3.76 and a standard deviation of 0.76 with left-sided Skewness (-ve) ensuring relatively higher level of agreement with the key indicators of the study on the overall basis. Besides, the Skewness and the Kurtosis of the data worked out proved that the normality condition which was the requirement for the statistical analysis was alright especially for applying the Structural Equation modeling (SEM) technique.

3. Apropos the key aspects of the perceptions of the employees on the three core constructs of the research, the descriptive statistics revealed that the overall perceptions of TQM, CMA and BNP was reasonably on the higher side with a Mean of 3.76 and a Std. Dev. of 0.76.

4. It was found that even though the concept of TQM is originated as a manufacturing industry concept, it is gaining momentum in the service sectors as well, and as such several healthcare entities are making using of the concept to gain competitive advantage in business and enhance their business performance and for maintaining consistently good quality standards but it is yet to be fully implemented which is rightly indicated through the study.

5. The comparison made between the private and the public hospitals using the descriptive statistics revealed that in all the dimensions of
Total Quality Management the private sector health care entities were leading in TQM processes except for People Management where both the sectors were equal. The statistical details regarding the above aspect revealed as follows.

Private Sector – Mean = 3.9 and Std. Dev. = 0.099; Public Sector – Mean = 3.3 and Std. Dev. = 0.2.

6. The comparison made on the perceptions of the respondents hailing from the private and the public healthcare facilities revealed that the private sector employees had relatively higher perceptions about Competitive Advantage of TQM than their public sector counterparts. The statistical details regarding the above aspect revealed as follows.

Private Sector – Mean = 3.9 and Std. Dev. = 0.0; Public Sector – Mean = 3.5 and Std. Dev. = 0.34.

7. Again the comparison made on the perceptions of the respondents of both private and public healthcare facilities revealed that the private sector employees had relatively higher perceptions on all three dimensions of Business Performance than the public sector employees. The statistical details regarding the above aspect revealed as follows.

Private Sector – Mean = 4.0 and Std. Dev. = 0.12; Public Sector – Mean = 3.4 and Std. Dev. = 0.19.

8. The findings through the main hypotheses testing was that TQM implementation on the whole had a significant influence on the two dimensions of Competitive Advantage (PRD and CSL) and all the three dimensions of Business Performance (OPP, FNP, and NFP). Thus, the point is clear that if the hospitals are aiming to gain a
competitive advantage in business over their competitors TQM implementation would be a worthwhile exercise.

9. The finding through the hypothesis testing was that on the overall basis TQM had a significant influence on Product Differentiation (PRD). Dimension-wise, Top Management Leadership (TML), Supplier Quality Management (SQM), Continuous improvement (CNI), Process Management (PRM), Quality of Information Management (QIM), and Organizational Learning (ORL) influenced the PRD. Creating a product differentiation involves a lot of creativity and innovation on the part of the employees and it is impossible unless the TML is supportive. This is because, first of all the organization has to develop its intellectual property, and then, the organizational environment should be congenial to risk taking so that newer products/services can be tried by the employees fearlessly. The SQM also has a bearing on PRD as unless the suppliers innovate with the newer materials little can be done on product/service differentiation. Continuous Improvement (CNI) can also be used as a strategy to create better and more efficient products in the hospitals. Since Hospital is a process-oriented business organization unless the processes of admission of the patient to the discharge after recovery are designed in such a way so as to provide maximum comfort to the patient at minimum cost, success and sustainability is farfetched. To be distinctly different from the rest of the hospitals, the processes should be well-managed and well differentiated from the rest in the trade. Thus, PRD is influenced by the PRM in the hospitals. In today’s information driven world the edge in business is based on the quality information and better the quality information management the better will be the scope for PRD and thus they have been linked.
Finally, unless ORL is supported it is not possible to have PRD. The entire organization should transform itself into a learning organization where the knowledge acquired by the employees while dealing with the service encounter is saved in the central repository and is made available to the future use of the employees and this practice need to be continued on a long term basis as the newer employees replace the older ones. It is this collective knowledge of the employees can lead to PRD and thus the ORL and PRD are linked through the hypothesis testing.

10. The second dimension of Competitive Advantage (CMA) that was considered in this research was Cost Leadership (CSL). It was established through the hypothesis testing that the following dimensions had significant influence on CSL: Top Management Leadership (TML), Customer Management (CMT), Supplier Quality Management (SQM), Continuous Improvement (CNI), Process Management (PRM), Quality Information Management (QIM), and Organizational Learning (ORL). Hospitals render several service/product offerings from dental care to heart care and the CSL is the key to the gaining of the CMA. Thus, the Top management in the hospitals has to practice CSL which will enable them to give a low cost high quality care to its customers which is revealed through the findings of this research. The CMT is the channel to sense the customer needs and requirements in the hospitals and has a crucial role to play in the CSL. So, the findings of the research makes the point clear that with better CMT it is possible to have a better CSL because it would provide the strategic managers with the necessary leads on pricing decisions. The SQM has influence on CSL as cost is an entity which is influenced by the entire supply chain and it is
revealed through the hypothesis test. The CNI also has an influence on CSL as per the finding which is because when the product or the service in a hospital setting undergoes constant improvements, the hospital will be able to produce higher quality at a lower cost through innovative practices thus achieving the CSL in the market with its competitors. The PRM is unavoidable in a service sector like hospitals because it is process-intensive as mentioned before. When PRM is effective the activities will be performed with minimum time consumption at a lower cost, thus leading to CSL in the market. This was observed during the field visits in some specific hospitals where the processes were standardized and they had the CSL in the market. The QIM also has a bearing on CSL as per the findings of this research. The QIM leads to the most recent information available to the employees as and when they require and it would support their initiatives to cut costs, and thus leading to CSL. Finally, as informed in the previous paragraph ORL leads to innovation which is also required to find the methods and means to reduce cost and achieve the CSL in the market.

11. Hypothesis testing had also revealed the influence of TQM dimensions on Business Performance (BNP) dimensions, namely Operational Performance (OPP), Financial Performance (FNP), and Non-financial Performance (NFP). The dimensions of TQM which had influence on OPP were: TML, CMT, SQM, CNI, PRM, QIM, and ORL. Operational performance is technology driven and adoption of newer technology is not possible without the TML and thus TML can have a significant influence on OPP. The CMT reveals certain aspects about the operations which are required to satisfy the customer requirements in the hospitals. As the customers are the end
users of product or service in the hospital they will know to the best extent how the operations need to be sequenced. Thus the CMT influences OPP in the hospital. The SQM also influences OPP as unless the supplier quality is ensured the OPP cannot be guaranteed. The CNI is the key for the improvements in OPP as the operations have to be improved through a number of stages in small steps. The PRM also contributes to the OPP as the processes need to be improved for better OPP. The QIM has an influence on OPP as the information on the operational performance quality would enable the improvements in the OPP. Finally ORL has an influence on OPP because enhancement in the OPP needs knowledge which can be assimilated through the ORL.

12. It was also found that TQM dimensions also influence the Financial Performance (FNP) of the hospitals. Following dimensions of TQM had influence on FNP: CMT, SQM, CNI, PMT, PRM, and ORL. The CMT holds the key in the FNP of business. Customers of the hospitals are the patients and if they are well managed through the CMT techniques they will continue their patronage and thus improve the FNP of the hospitals. The SQM also has influence on FNP of business. The patient care is influenced by the products and the services which are provided by the supply chain associated with the hospital. So, if the SQM is managed well the products and the services received by the patients would be good thus leading to better FNP. The CNI also enhances the FNP of business. The efforts of CNI would ultimately result in producing better services and products through incremental improvements. The PMT has an influence on FNP because with all the technology and the infrastructure ultimately it is the people who drive the service sector such as hospital. If the
PMT is efficient it leads to better quality of service which in turn enhances the customer satisfaction leading to more business and better FNP. The PRM also has an impact on FNP. A well-managed set of processes would lead to better service providing to the patients and thus improve their satisfaction levels leading to more business and the enhancement of FNP. Finally, the ORL has the ability to enhance the FNP. The ORL will lead to better knowledge assimilation in the hospitals and the service providers will know the most effective ways of meeting the patient needs and thus increase their satisfaction level which would lead to better business and thus better FNP.

13. The Non-financial Performance (NFP) was also influenced by the TQM dimensions. The dimensions which influence NFP were: TML, CMT, PMT, PRM, QIM, and ORL. The NFP is characterized by market standing, intellectual capital, and investment in R & D etc., which are not indicated in the financial ratios but influence the business performance in the long run. The TML has a bearing on NFP. This is because unless the TML has the long term vision the organizations cannot develop practices which would support NFP. The CMT also plays its role in the NFP of business. Well managed customers will generate revenue to the organization which can be used for enhancing the NFP. The PMT also enhances the NFP. As stated before it is the people who drive the service sectors such as hospitals and if they are managed well it will enhance the NFP. PRM also influences NFP. If the processes in the hospitals are well managed it will improve the overall performance of the hospital. The QIM has an influence on NFP. Quality information has the ability to improve the knowledge of the employees about customer needs and
likings and thus may contribute to the development of NFP. Finally the ORL has influence on NFP. The NFP is measured through the intellectual property and investment in R &D which can be influenced by the organizational learning that is taking place in the organization and thus the relationship is justified.

Thus through this research it is found that the TQM implementation in the hospitals is well justified as it provides a competitive advantage in the market and enhances the business performance. So those hospitals which have already implemented TQM need to continue with the processes and benchmark them with the best in the trade and those hospitals which are yet to implement need to initiate the process.

6.2.2 Other Findings

The qualitative research findings through survey as well as the semi-structured interviews not only supported the findings of the quantitative analysis in the form of descriptive and inferential statistics but also provided insight into some creative suggestions on how to improve business performance by making TQM more effective. The keen interest in quality oriented service of the private sector against the public sector hospitals was evident during the field visits and interaction with the employees of the hospitals. It was also observed that the quality awards won by the private sector hospitals outnumbered that of the public sector hospitals thus, the revelation of the descriptive statistics that the former were better in terms of TQM implementation, gaining of the competitive advantage, and business performance was substantiated.

During the repeated field visits an attempt was made to find out why the private sectors had performed well, and several observations were made. The employees of the private sector hospitals had more professional
approach as they had a higher level of motivation in comparison to those in public sectors. As the public sector employees had higher job security they were not having a sense of achievement and lacked in the desire to learn newer concepts. On the contrary, for the private sector employees remaining competitive was a must to retain their job and had demonstrated a much higher level of commitment and had a natural desire to learn and thus built a better set of systems and practices in the organization. This results in better performance of the private sector hospitals.

6.3 Challenges in TQM Implementation

The qualitative component of the research through survey as well as the semi-structured interviews had also enabled the identification of specific problems encountered in TQM implementation in the hospitals and the challenges to overcome. These challenges have been listed below.

- TQM is basically a manufacturing concept and its methods, tools and techniques which have been basically designed for the manufacturing set-up need to be modified to suit to the requirements of a service industry in general and then into the environment of a hospital, which by itself is a challenge to be accepted by the management. Moreover, making quality a top priority in the organization may require changes in goals, guidelines, attitudes, and activities that are often difficult to make. During the field work in this research many of the clinical staff had expressed their inability to understand the management jargons as they did not have a formal education in management. It was also observed during the study that most of the hospitals except a few did not have a separate quality department to deal with the quality issues in their organization. Hospitals with a quality department seem to be functioning in a better way than the hospitals that do not. And
wherever the quality department was functioning, it was being headed by personnel who were not trained in Quality management. And also in most of the hospital the administrator/chief manager role was handled by persons who did not have proper management background and were in the position by virtue of their work experience rather than their academic qualifications. However, the scene is changing slowly as the need is increasing and management specializations have extended to hospitals e.g. MBA Hospital Management /Masters in Hospital Administration (MHA) etc. and many people are now available with these qualifications who can play a key role in TQM implementation. However, it is very difficult to get staff with a rich experience in this field with the dual specialization (medical degree and management background). So, this is the one of the major challenges to be faced by the hospital authorities in the implementation of TQM.

- TQM philosophy will be successful when it receives support from all the employees in the organization and this is possible only through providing adequate training to the employees on the TQM concepts. Providing training involves a lot of planning, designing, and implementation issues by itself and scheduling the clinical and non-clinical employees for training is also a challenge as many hospitals are operating with just adequate staff and deputing them for the training disorganizes the routine work of the staff. So, it creates an additional burden on the management to recruit additional employees which adds to the operating cost. Further, the benefits of TQM may be reaped only after successful implementation and it takes time to prove to the public that the hospital is equipped with quality standards and thus improve its market standing. So, the management
should be ready for this investment and be prepared to wait for a long duration to reap the benefits.

- The development of ‘quality culture’ is found to be a challenge. Managers have expressed that overcoming the resistance to change among the employees is a major challenge. People were used to doing their work in a specific way, but when the quality standards demanded slightly different way of doing things in a quality conscious manner, the employees started offering some ‘resistance to change’. This highlights the importance of imparting good amount of training to the employees before implementing quality centered operational procedures.

- Employee Empowerment at individual level and team level is not fully supported by the top management. There is a sort of fear in the management that giving the complete autonomy to the employees to make decisions could cause some problems and in case the employee makes a wrong decision under time pressure its repercussions could be directly on the customers. So, the management feels that some cushioning time may be required to make the employees totally empowered to do things the way they feel is right. But, unless empowerment is fully practiced TQM implementation will remain incomplete and the desired results cannot be expected.

- Continuous Improvement needs complete dedication from the employees and they need to constantly innovate with their processes and find better ways of doing things which would cut cost, improve quality, save time, provide more patient satisfaction etc., and this demands that clinical and non-clinical employees need to discuss issues together which is not happening to the extend desired. This is
also a challenge to overcome. In fact this point was expressed by the interviewee during the semi-structured interview.

- Customer Management in hospitals is not as easy as it is in other service sectors. The reason is that the customers are patients and the service received is directly related to the well-being of a human being. So, the service provided has more of intangible features than the tangible ones. Human element also plays a major role in customer perception of service quality. Maintaining a long term relation with the patients is also challenging for the hospitals as the patients tend to change the hospitals and the physician from time to time. Moreover capturing the customer (patient) expectations on service is also another challenge for hospitals as there are both clinical and non-clinical (mainly administrative) components of service quality which the patients usually anticipate. The customer needs vary with time and keeping in pace with the changes in expectations from time to time also a challenge. In fact many respondents during the interview had expressed that today’s patients are much different than those from the yesteryears because of IT revolution, they have information available to them about the treatment and even the medicine through the internet and sometimes may even be misinformed and communicating to them becomes very challenging.

- Supplier Quality Management has issues related to purchase, supply and distribution of goods supplied to the hospitals in terms of equipment, drugs, etc. The supply of goods will be delayed many a times and if the goods are rejected which have arrived late, the hospital will be running out of stock on the essential goods. So, in many places compromise has been made, as expressed by the employees, and enforcing very strict quality standards with the
suppliers will not work because only some specialized manufacturers are capable of producing some special medical & surgical equipments. Moreover all public healthcare institutions in the state are obtaining all essential drugs and equipments from a central procurement agency run by the government and sometimes there will be problems related to procurement, indenting, storage, dispensing, pricing, usage of medicines and quality assurance. This was revealed by the employees of the concerned department during the informal discussions.

- Processes in hospitals are not very well-defined and each patient may have to undergo a different process path from the time of entry into the hospital to the discharge from the hospital. Due to this difference, standardization of the processes is not as easy as in other service sectors like banks or hospitality. Again, the processes have clinical and non-clinical components and the unification of which is complicated. This was conveyed by the participant of semi-structured interview.

- Quality Information Management is not as easy as in other service sectors because of the confidentiality issues of the customers who are patients. Quality information is connected to the service provided to the patients during the treatment and it cannot be stored in the public domain of the organization for the use of all the employees. The quality issues related to the treatment of the patients for the same disease could be different as the treatment procedure may vary from patient to patient despite the fact that the disease the same. For example, the treatment for the diabetic and non-diabetic patients for the same disease is different and in addition to these two classes several sub-classes may creep in such as age, background, habits, past
health issues, etc. So, QIM requires huge investment and exceptionally good employees who are knowledgeable about the medical issues as well as information science related issues. In fact getting the right person for the post of quality information manager is also a challenging task.

- Organizational Learning is an excellent concept and the success of which is based on the employees’ willingness to learn and is dependent on his/her demographic variables. For this concept to be successful people should come out from the shells and openly come out to share their knowledge and join in the collective learning. It was observed that there is a general fear in the employees that by sharing knowledge he may be redundant as somebody with whom he has shared the knowledge may rise to higher posts. This type of thinking induces barriers to the free sharing of the ideas which is essential for the survival of the concept. It is the responsibility of the top management to create an environment congenial to learning and attract the right talent to the hospitals who can understand the importance of organizational learning and be a contributing member in it.

Thus, there is a wide scope of improvement for both the private and public sector hospitals through the application of quality management philosophies. But the fruit of success can be tasted if the challenges are given due consideration. Steps should be taken to develop favorable quality culture that can enhance the commitment level of the people working in the organization which ultimately results in gaining of the competitive advantage in the market and improving the business performance of the organization.
6.4 Summary

6.4.1 Background and Objectives

TQM is an emerging and widely used management concept fruitfully and effectively implemented in both manufacturing and service sectors in the world over, and the literature is inundated with research outcomes in the areas of TQM and their chequered. Nevertheless, not many have explored into the area of TQM implementation in hospitals even though many hospitals are today ISO certified and have implemented TQM principles and practices. This study is an attempt in this direction.

The study aimed to seek relationship between TQM implementation and its desirable outcomes. Following were the specific objectives identified for the study.

1. To understand the concepts, rationale and the relevance of TQM in health care entities.
2. To identify the dimensions which constitute TQM practices, Competitive Advantage (CMA) in business, and Business Performance (BNP).
3. To establish the interrelationships between the dimensions of the above constructs in the form of a hypothetical model.
4. To empirically investigate the significance of interrelationships between these constructs.
5. To make suggestions and recommendations to the strategic managers in the hospitals to improve upon the TQM implementation based on the empirical findings.
6. To develop a TQM implementation model to the hospitals and provide the operationalization procedure.
6.4.2 Methods

On the basis of the stated objectives the study was conducted in 6 private sector hospitals and 4 public sector hospitals in the state of Kerala, where TQM principles and practices were in operation. Mixed methods was the approach adopted in the study. Non Experimental hypothesis testing research was the design used for the study. Both qualitative and quantitative data were collected through semi structured interview and with a pretested self- administered questionnaire. Stratified random sampling was used to select the sample hospitals and the respondents were the top and the middle level managers who had sufficient knowledge about the TQM implementation in their respective entities. The collected data were tabulated and analyzed with the help of statistical tools. Statistical analysis was used to empirically test the theoretical relationships established through the meta-analysis of literature. Thus through the study the researcher had made an earnest attempt to answer the research questions.

6.4.3 Findings

Findings included the findings from both the literature review and the empirical investigation.

Objective 1: To understand the concepts, rationale and the relevance of TQM in health care entities.

As per the literature review, TQM is basically a concept which was borrowed from manufacturing industries into the service sectors and very recently into hospitals which constitutes an important service organization. According to the literature, the core focus of TQM is meeting the customers' needs and ensuring their satisfaction. Literature review had revealed the fact that TQM is quite relevant to hospitals because quality is of paramount importance in this sector as it is directly connected to human well-being. The
customer of hospitals is mainly patients and the utmost satisfaction of the patients is quite essential for the sustainability of the hospital. The review had made the point clear that TQM has a great potential to address quality problems in various healthcare entities and improve the performance. Thus the literature review conducted in this research revealed that, theoretically speaking, TQM has influence on the Competitive Advantage (CMA) and Business Performance (BNP) of the organization and this research made an attempt to provide an empirical support in the context of hospitals.

**Objective 2: To identify the dimensions which constitute TQM practices, Competitive Advantage (CMA) in business, and Business Performance (BNP)**

The meta analysis of the literature identified the key dimensions of basic research constructs in this research i.e., TQM, CMA and BNP and also the indicators of these dimensions which are relevant in the context of hospitals. Analytical hierarchy process was used to identify these dimensions. While the literature review had revealed that there are 21 dimensions which define the TQM, in this research the ones most relevant to the healthcare industry were considered and this included: Customer management (CMT), Top management leadership (TML), People management (PMT), Organizational learning (ORL), Process management (PRM), Continuous improvement (CNI), Quality information management (QIM) and Supplier quality management (SQM). The dimensions of competitive advantage included Product differentiation (PRD) and Cost leadership (CSL). In this research, Operational Performance (OPP) and Organizational Performance (OGP) were considered as the two main dimensions of BNP and the organizational performance was considered to have two dimensions: Financial Performance (FNP) and Non-financial Performance (NFP).
Objective 3: To establish the interrelationships between the dimensions of the above constructs in the form of a hypothetical model.

The aim of this research is to study and explore the influence of TQM implementation on the gaining of competitive advantage (CMA) and Business Performance (BNP). Literature review provided ample evidence for the linkage of TQM to CMA and BNP. In this research an attempt was made to establish the linkage between eight dimensions of TQM with the dimensions of competitive advantage the hospital can gain in the market and the enhancement in the business performance. This linkage development led to the development of a hypothetical research model which formed the basis of this study. Several views and opinions of the researchers in the field had enabled the building of the relationship which was portrayed in the hypothetical research model.

Objective 4: To empirically investigate the significance of interrelationships between these constructs.

In this research hypothesis testing had resulted in the identification of the relationships between the variables of research interest ie., TQM, CMA and BNP.

1. The main hypothesis testing through regression analysis revealed that TQM implementation on the whole had a significant influence on the two dimensions of Competitive Advantage (PRD and CSL) and all the three dimensions of Business Performance (OPP, FNP, and NFP).

2. It was also found that on the overall basis TQM had a significant influence on Product Differentiation (PRD). Dimension-wise, Top Management Leadership (TML), Supplier Quality Management (SQM), Continuous Improvement (CNI), Process Management (PRM), Quality of Information Management (QIM), and Organizational
Learning (ORL) influenced the PRD.

3. Cost Leadership (CSL), the second dimension of Competitive Advantage (CMA) was also influenced by the following TQM dimensions ie., Top Management Leadership (TML), Customer Management (CMT), Supplier Quality Management (SQM), Continuous Improvement (CNI), Process Management (PRM), Quality Information Management (QIM), and Organizational Learning (ORL).

4. TQM dimensions also had a significant influence on Business Performance (BNP) dimensions, namely Operational Performance (OPP), Financial Performance (FNP), and Non-financial Performance (NFP). The dimensions of TQM which had influence on OPP were: Top Management Leadership (TML), Customer Management (CMT), Supplier Quality Management (SQM), Continuous Improvement (CNI), Process Management (PRM), Quality Information Management (QIM), and Organizational Learning (ORL).

5. TQM dimensions also had influence on the Financial Performance (FNP) of the hospitals. Following dimensions of TQM had influence on FNP: Customer Management (CMT), Supplier Quality Management (SQM), Continuous Improvement (CNI), People Management (PMT), Process Management (PRM), and Organizational Learning (ORL).

6. The Non-financial Performance (NFP) was also influenced by the TQM dimensions. The dimensions which influenced NFP were: Top Management Leadership (TML), Customer Management (CMT), People Management (PMT), Process Management (PRM), Quality Information Management (QIM), and Organizational Learning (ORL).
6.4.4 Implications to the Strategic Planning Managers

Objective 5: To make suggestions and recommendations to the strategic managers in the hospitals to improve upon the TQM implementation based on the empirical findings.

Based on the research findings, the following suggestions are recommended to the strategic planning managers in the hospitals to improve upon the TQM.

- The inter-sector comparison had shown that the private sector hospitals had outshined the public sector hospitals in TQM implementation, CMA and BNP. It is suggested that the public sector hospitals have to benchmark their TQM implementation strategy with that of the private hospitals. Benchmarking is always with the best in the trade and the public sector hospitals have to judiciously select the best of the private hospitals and benchmark their policies, procedures, systems and practices against those in the private hospital so that the best practices can be either emulated or suitably modified to suit to their requirements. The main purpose of benchmarking is to search for the best practices that would lead to superior performance (Ungan, 2007). So, the public sector hospital managers should explore this possibility to enhance their TQM implementation through Benchmarking.

- Applying the principles of Analytical Hierarchy Process (AHP) (Table 6.1) for the results of the hypotheses testing, it was observed that Process Management (PRM) and Organizational Learning (ORL) were the dimensions which had influence on all the dimensions of CMA and BNP. The TML, SQM, CNI and QIM influenced both the dimensions of gaining of the CMA, and CMT had influence on all the dimensions of BNP.
Table 6.1: Analytical Hierarchy of the TQM dimensions

<table>
<thead>
<tr>
<th>Dimension</th>
<th>TML</th>
<th>CMT</th>
<th>SQM</th>
<th>CNI</th>
<th>PMT</th>
<th>PRM</th>
<th>QIM</th>
<th>ORL</th>
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<tbody>
<tr>
<td>Product differentiation</td>
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Through the AHP applied to the dimensions of TQM on their influence on the dimensions of CMA and BNP it is imperative that the strategic managers of the hospitals should consider TQM implementation seriously and strengthen its individual dimensions. The following suggestions are recommended to strengthen these critical dimensions.

**Process Management (PRM):** While there are several methods to improve PRM, Brock, Schmiedel, Peter, Mertens & Viaene (2014) have filtered all the existing options and come out with ten basic principles which would enhance the efficiency of PRM in a business environment. These principles with little modification are applicable to the hospitals also. First of all the processes must be fit into the context of hospital and awareness should be created among the employees that they are serving in the hospital which is a top notch service sector which deals with the human lives and top priority should be given to safety of the patients during the execution of the processes. Any process that is designed or redesigned should be on a permanent basis and not a stop gap process. Modifications of the processes could be undertaken but the processes
should be well-established. In fact many middle level managers in the hospitals had conveyed that there were no robust processes in the organization and in some cases such as inventory management and procurement was sometimes taking place on ad-hoc basis. This should be completely avoided. No process should have an isolated operation but should be considered as a part of the whole which contributes to the overall functioning of the hospital. The processes should be institutionalized which means that they should be reflected in the organizational structure of the hospital through some means. One more important aspect is that all the stakeholders of the hospitals should be involved in the process building operation and their suggestions should be considered if found worthwhile. There should be a collective understanding of the processes which means there should be a joint understanding of the processes by the entire organization. The processes must be simplified to the extent possible so that there are no ambiguities and could be understood easily. They should also be economical and not over complicated. Finally, in today’s world technology is the key driver of any business. The edge is provided through the use of appropriate technology wherever possible and hospitals should not be left behind in this process. So, if a process can be technology driven, then appropriate initiatives must be taken to absorb the latest technology to drive the process.

**Organizational Learning (ORL):** Organizational learning is an important dimension of TQM as it has influence on all the dimensions of gaining of the competitive advantage and enhancing business performance. The suggestion to the strategic managers is that the hospital should focus on the antecedents of ORL if it has to be promoted. The organization culture is an important antecedent of ORL and among the various culture types it has been found that Adhocracy, a system of flexible and informal organization and management promotes ORL to the maximum extent (Julia, Daniel, Laureano & Perez,
2011) whose main values are entrepreneurship, openness, risk-taking, continuous change orientation and flexibility. Thus, in order to foster ORL the hospitals must make efforts to develop an adhocracy culture. Following specific measures may be adopted to enhance ORL which have proved results in other service sectors:

- The employees must realize that ORL is much more than the individual learning that the employees get indulged in, and here collective memory of the organization is given importance and team learning must take place.
- The hospitals should strengthen their information gathering practices in the internal and external environments.
- There should be an awareness created among the employees on performance gaps so as to encourage learning.
- There should be a measurement instrument to measure key factors that determine the needs and outcomes of learning.
- The culture should support experimentation.
- There must be a climate of openness in the hospital.
- The importance of continuous education must be realized by the employees.
- There must be variety of methods, procedures, practices, and systems available for the employees to choose from while an activity has to be performed.
- The top level leaders must be involved to the extent possible and participative management must be practiced.
- Interdependence of the organizational units has to be explained and people should willingly contribute in problem solving.
Top Management Leadership (TML): Without top management support no business can prosper. Strictly speaking, in terms of TQM, the TML refers to the level of all senior managers. The TML should be focused more towards the organizational performance. It should take lead in creating a climate of risk taking, communicating vision, preparing employees for change, providing individual support for growth and development, and setting high performance expectations. All this was totally missing in most of the hospitals visited. Leadership should also promote modernization particularly the IT support. This is particularly important in case of public sector hospitals. The TML should initiate the process of team building and developing second line leadership which is totally missing in the hospitals. The team building process should also be directed towards supporting innovation. Top management of the healthcare organization must trust in the success of TQM implementation and the trust must be transferred to the employees by explaining the reasons behind the adoption of TQM. The TML should also set the principles and policies of quality. The traditional organizational culture has to be changed to become quality-oriented and customer-oriented. This change must be initiated by the top management and the management must listen to the internal customers, participate in teams, and offer practical support to TQM programs. The top management and its partners in the change must try to correctly instill new concepts of quality by making quality as the core of meetings. The TML should indulge in providing intensive training programs that aim at the education of the employees on quality concepts. Finally, the TML should practice transformational and situational leadership style to make the organization respond to the changing needs of the community.

Supplier Quality Management (SQM): In the context of hospitals, the supplier quality management plays an important role in the reduction of costs and improved service delivery. The supply chain consists of manufacturers of
drug, surgical instruments, device manufacturers and so on, which sell their products to the end user which is ultimately the patient. During the interaction with the purchasing department managers in the hospitals it was observed that the concept of Supplier Quality management is not paid much attention yet in most of these hospitals. The weak positioning of the purchasing department in the value chain of health service delivery and resulting low attention on the part of the hospitals ‘management is one of the problem areas which needs immediate attention. And moreover, most of the time hospital buyers are expected to attain the best price for the needed goods and therefore the trust between the buyer and supplier is weak and the relationship is often adversarial. In order to overcome these challenges the Hospital Purchasing department has to integrate internal consumers as well as the external suppliers through cooperation coordination and communication.

**Cooperation** - The hospitals have to develop a strong network and interactions with their key suppliers and establish a long term relationship. This will result in a win–win relationship where both parties benefit.

**Coordination** - There should be coordination of procurement process and monitoring of quality consistency of different suppliers. Suppliers need to be integrated into the procurement processes. There should be continuous analysis and control of procurement processes and supplier performance. Hospitals should undertake supplier audit and the audit must include supplier prioritization, supplier liaison, legal approval, and supplier history review. The audit should follow with the report preparation, content review, and corrective action and closure. Mapping of the entire process may be necessary for process optimization. The supplier audit must be used as a risk management tool by the future users.

**Communication** - Adoption of electronic services (Information systems) to store the supplier data is vital in SQM as it saves the cost of the preparation and
transmission of paper requests and invoices and eliminates errors from manual data entry by connecting ordering systems with delivery systems. This integration of supplier data is already a mature concept successfully used in the manufacturing as well as some service industries and has to be brought to the hospitals.

**Quality Information Management (QIM):** QIM has not been effective in most of the hospitals and the general awareness of the usefulness of QIM is lacking and it has to be improved considerably. While product quality information management system focus on being free from error, concise representation, completeness, and consistent representation, service quality information management systems should focus on timeliness and security. The Quality information must be easy to access and interpret, and objective as well as dependable. The believability, accessibility, and ease of operation play an important role which has to be considered by the hospital authorities. The data collection in the QIM must be made simple and the data quality should be improved in terms of timeliness, correctness, consistency and completeness. To enhance the performance of QIM it is important for the hospital authorities to check if the existing information systems allow monitoring of the quality and performance on a continuing basis across the health system. It is also important to check if information about quality and performance is made widely available to the interested parties, including patients and communities, as part of the general approach to quality improvement. The QIM must have a provision to respond to future demands in quality improvement. An appropriate investment in the human resources which are needed to maintain and operate information systems, and to analyze and interpret the information being produced is to be ensured. The QIM must provide all health workers an easy access to current evidence of best practice in their field. The health workers must have appropriate access to these systems which guide their practice. The health
workers should find it easy to pool information about patients across organizational boundaries and across a continuum of care. The health-service providers should supply information to individual patients and their relatives in ways which maximize their understanding.

**Customer Management (CMT):** CMT is a business strategy with the goal of reducing costs, increasing revenue, identifying new opportunities and channels for expansion, and improving customer value, satisfaction, profitability, and retention and the hospitals need to focus on all these components. This term has to be looked as Patient Management in the context of hospitals and deserves greater level of commitment. First of all the CMT tools must be integrated with the workflow of the hospital units. By doing this, the relationship management with the patients becomes a part of the process of providing service. During the field visits the health workers had expressed that they do communicate to the patients and manage relationships with them so that they may have a long term patronage. But the success or failure will also be dependent upon how the patients comprehend what was communicated to them. So, in such case to facilitate the communication a sub-process may be introduced. The idea is to capture the knowledge creation that takes place during the communication which may go unrecorded. When the physician communicates to the patients, the administrative staff can conceptualize the issue by capturing the knowledge that gets generated and that are uploaded into the organizational memory which can be used for follow-up or future use to improve the communication with the patients. It helps to analyze why CMT was a success or what measure may be necessary to make it more effective. A follow-up system can be developed to keep track of the relationship building with the patients. The data base so created can also be used to benchmark the hospital with its counterparts. The CMT systems should integrate personal health records of the patients with the hospital’s data to provide a system for managing care-related activities, costs
and benefits, and enabling patients to have better online access to enhance the management of their healthcare. Online access to their data is yet to be provided to the patients by hospitals. The CMT system should be built with an ability to analyze the performance of routine processes over time (such as admissions, discharges, transfers and referrals) in order to eliminate unnecessary steps. It should enable proactive management of chronically ill patients (e.g., diabetes, cancer, and congestive heart failure) to target them with communications about the offerings and remind them of ways to manage their illness. The CMT system should improve care coordination and reduce the risk of readmission. The system should be successful in reducing costs by consolidating systems and pooling resources to obtain economies of scale, improving utilization of appropriate healthcare resources and understanding the cost of treatments to drive business planning. It should also prevent and minimize medical errors by integrating CMT system data with medical history and clinical data. The hospitals should fully exploit the advent of electronic medical records and the CMT software that is prevailing in the market.

**Continuous Improvement (CNI):** Improving the quality and safety of patient care is the main focus of healthcare entities nowadays. Therefore application of Continuous Improvement (CNI) philosophy in these entities is crucial. CNI is a quality management strategy that encourages all health care team members to continuously improve their practices. Continuous improvement efforts in the hospitals may result in either incremental or breakthrough improvement of hospitals as it improves the products, services and the processes of the organization. Therefore, the Hospital authorities need to take firm steps to create inquisitive Continuous Quality Improvement culture in the organization. Continuous improvement practices in the hospitals begins with the culture of improvement for the patient, the practice, and the population in general. Besides creating this inquisitive Continuous Improvement culture in an organization, the
strategic managers of the hospitals need to use a structured planning approach to evaluate the current practice, processes and improve systems and processes to achieve the desired outcome and vision for the desired future state. It is the key to any CNI initiative as it enable team members to assess and improve health care delivery and services. The following steps may be taken by the managers to improve the Healthcare Services rendered by these healthcare entities

1. Identify the critical areas which have bearing on service quality and suggest measures to observe the processes and suggest improvements.

2. Establish and monitor metrics to evaluate improvement efforts and outcomes routinely.

3. Ensure that patients, families, providers, and care team members are involved in CNI activities.

4. Ensure all staff members understand the metrics for success.

5. Optimize use of Health information Technology and see if the patient data generation can be made faster by and accessible to the healthcare team whenever necessary.

6. Encourage the culture of research, experimentation and innovation

7. Place suggestion boxes in strategic points and take customer feedback and see if small improvements can be made at regular intervals.
6.4.5 The TQM implementation model for Hospitals

Objective 6: To develop a TQM implementation model to the hospitals and provide the operationalization procedure.

It was observed that TQM implementation was considered by most of the hospitals in Kerala State however, there was no specific model which was available for TQM implementation. Having realized the need, this research has developed a full-fledged holistic model for the TQM implementation in hospitals (Figure 6.1). This model is generic and is applicable to both the private and the public sector hospitals. In the proposed model there are two distinct environments namely, the Hospital Environment and the TQM Environment which need to be aligned with each other for gaining the competitive advantage in business and enhancing the business performance. Since, TQM implementation is not a standalone process, it has to be aligned to these two managerial environments which are described in the following sections.
Figure 6.1: The TQM Model for Hospitals
The Hospital Environment

Vision: The hospital environment is mainly oriented toward the realization of its Vision. In this context, every hospital has a distinctly different vision and has a set of mission statements to realize the vision into reality, and accordingly the objectives have to be accomplished. The vision is about the future state of the hospital that is shared by those working within the organization to the public. The vision of the hospital is developed to inspire the stakeholders to focus work towards the realization of it. The vision is collectively decided by the stakeholders of the hospital and not just decided by the top management and dictated on the employees. However, communicating the vision continuously to all the employees should be the responsibility of the leaders of the organization. Thus, every activity in the organization should be oriented towards the vision of the hospital.

Mission: The second in the line is the mission statements of the individual departments which define how the vision is realized. Mission is also a statement about why the hospital exists. While vision states what is to be achieved, the mission explains how it is to be accomplished. In the setting of the hospital, a mission statement can generally include statements on how patient-centric care can operate in the hospital and process on a daily operational basis. The mission should have clarity, should be simple and easily executable by the concerned sections. Following guidelines may be used by the hospitals to develop the mission statements.

• Identify a patient advisor (or a stakeholder) and frontline staff member of the hospital who have experience in health service providing and invite them to participate in all mission statement planning meetings and activities.
• Brief the patient advisor and staff member on the purpose of a mission statement and orientate them to the health service strategic plan.

• In the meetings the health service opportunities, the business means, the community expectations of the health service and the guiding principles that might underpin the organization should be discussed.

• The information to be consolidated and key words to be identified. Based on the key words the statement have to be written in consultation with the Board of Directors, executives, patient advisor, and staff members. The staff members should include the representatives from all the different ranks across the departments.

• The draft Mission Statement should be circulated out to consumers and frontline staff for comments and feedback. Finally the Board of Directors and the executive committee of the hospital should fine tune the mission statements.

• After necessary changes are made, the final versions of the Mission Statement should be circulated throughout the organization.

• The hospitals should identify the champions to promote the mission to the entire employees and explain the importance of each of them and establish commitment to work towards the mission.

These mission statements are important for the success of TQM implementation because the accomplishment of mission statements has to be supported by the TQM practices. This is because mission statements will give rise to objectives and finally into processes and the TQM can be used to check if there is any deviation from the set standard of the process.
Objectives: Based on the mission statement the hospital should work on the Objectives in alignment to the mission statements. Objectives are the milestones which indicate the series of activities to be completed to accomplish the mission. Objectives are manageable stepping stones to achieve the mission, thus make the vision a reality. They must be specific and measurable. Objectives should provide the basis for assessing the actual versus the desired performance. The objectives provide feedback to the managers on how much of the tasks have been accomplished. So objectives must fit into a given time frame. The objectives also provide the managers with the corrective action to be taken if the tasks are not accomplished on time.

TQM is basically composed of three important activities: Benchmarking, Re-engineering, and Empowerment and Training on a continuous basis are going to be essential to make the employees aware of the quality issues. These activities must be oriented towards the vision, mission and the objectives.

Benchmarking: Benchmarking made its first appearance in the healthcare system in 1990 with the requirements of the Joint Commission on Accreditation of Healthcare Organizations (JCAHO) in the United States, which defined it as a measurement tool for monitoring the impact of governance, management, clinical, and logistical functions (Ettorchi-Tardy, Levif & Michel, 2012). Benchmarking is an important aspect of the TQM. According to ASQ benchmarking is a technique in which a company measures its performance against that of best in class companies, determines how those companies achieved their performance levels and uses the information to improve its own performance. Subjects that can be benchmarked include strategies, operations and processes (Russel, 2014). Benchmarking is setting a standard and checking the state of the hospital with the standard, so benchmarking should always be against the best in the
trade. In the context of hospitals it is not enough to look only into the healthcare industry but a lot need to be looked in service industry too.

There are certain aspects related to benchmarking which need to be defined beforehand. First of all who performs the benchmarking is an important issue to be decided by the hospital authorities. While outsourcing to a reputed agency is an option for better results, a group of representatives of all the relevant professions from the hospital (Hospital management, Medical and Paramedical services, IT department, IT users) who have undergone training in TQM would be an ideal choice. The advantage of using an interdisciplinary team is that, a diversified set of viewpoints can be generated which are pooled from the different sections of the hospital, which can be then integrated to develop the benchmarking criteria.

During benchmarking the hospitals should compare the indicators (structure, activities, processes and outcomes) against best practitioners, identify differences in outcomes through inter-organizational visits, seek out new approaches in order to make improvements that will have the greatest impact on outcomes, and monitor the indicators. Following nine steps are recommended during the benchmarking which the hospitals may consider (Pitarelli & Monnier, 2000):

1. Select benchmarking area (the service or activity to be improved).
2. Identify benchmarking partners (reference points).
3. Collect and organize data internally.
4. Identify the competitive gap by comparing against external data.
5. Set future performance targets (objectives).
6. Communicate the benchmarking results to the employees.
7. Develop action plans.
8. Take concrete action (project management).


**Reengineering:** Reengineering in this context is basically the Business Process Reengineering. Reengineering is to discover the best processes for performing work, and that these processes are reengineered to optimize productivity (Weicher, Chu, Lin & Yu, 1995; Kumar, Shim & Phe, 2008). Hammer and Champy (1993) state that BPR refers to the fundamental rethinking and radical redesign of business processes to achieve dramatic improvements in critical, contemporary measures of performance, such as cost, quality and speed. Business processes are sequences and combinations of activities that deliver value to a customer. A core business process usually creates value by the capabilities it give to the organization for its competitiveness. A limited number of such core business processes can be identified in any organization, and enhancing those processes can lead to business improvement.

Reengineering may have to be performed section-wise. For example operating theatre management often involves human resources, information systems, finance, physical plant design and utilization, capital equipment, clinical quality and efficiency and regulatory system. A team may be activated to study the processes in-depth to check the performance can be enhanced to reduce cost, enhance quality and create more value to customer. Tools such as modeling and simulation, scheduling, sequencing etc., have been used in advanced countries successfully to optimize resources. For example, operation theatre management may involve the scheduling of the doctors and nurses and optimum utilization of the machines and other resources. The aforementioned tools may be handy in finding the most
optimum utilization of the resources and accordingly the process may be reengineered to increase the productivity.

**Empowerment & Training:** Empowerment can bring the best of every employee and team empowerment can promote collaboration which can bring out innovation that in turn contributes to the gaining of the competitive advantage (Kennedy & Schleifer, 2006). Empowerment is a concept that links individual strengths and competencies, natural helping systems and proactive behaviour to social policy and social change. In other words, empowerment links individual and his or her well-being to wider social and political environment in which he or she functions (Hamburger, Mckenna& Tal, 2008). Primary objective of empowerment is to create teams which are highly creative and productive which contribute to the vision of the organization. Successful implementation of total quality management depends heavily on changes in employee attitude and activities. The employees who are exposed to TQM concepts need to be empowered both at the individual and at the group level to perform their assigned duties without any interference from anybody. However, the leaders should monitor the skills continuously required for carrying out the ever-changing complexity of jobs of the teams. The management must be willing to help the teams when they are unable to solve issues. The responsibilities of the management are to control the processes and not the individual team members. Following measures may be necessary to support empowerment in the hospitals:

- Authorities should listen to the employees when they have concerns about performing the job.
- The recommendations given by a team for process improvement should be considered proactively.
- Invest time and money on process improvements as requested by teams.
• The management should be prepared to wait for the success of the teams and not pressurize them to achieve results immediately.

• Spend more time with the teams at the initial stages and listen to the problems encountered by them.

• The problems faced during the execution if any need to be solved through mutual discussions.

• The team producing better results need to be recognized and rewarded.

• Information technology based communication systems must be provided at all the levels and the technology has to be updated regularly.

No matter what standards are set or what tools and techniques are used, unless the employees are trained well on the usage of technology and motivated to perform, all the efforts put will go in vain and the system will not be effective. So, in order to realize the vision of the hospital with its mission and the objectives, the employees need to be trained on TQM concepts so that they may practice in alignment with the vision. Training the employees on quality issues is the primary responsibility of the management.

Training in the context of TQM in hospitals need to focus both on “soft” aspects of TQM, such as teamwork and interpersonal skills, as well as to the extent possible on “hard” aspects, such as statistical tools and techniques. Training could be in relation to all the TQM concepts and may cover issues such as empowerment, multi-skilling, interpersonal skills, patient-care, quality and teamwork. A strong emphasis on implementation of what is learnt through training is required.
Thus, oriented towards the vision, mission, and objectives of the hospital Benchmarking, Reengineering, Empowerment and Training has to be performed.

**The TQM Environment**

This is the component which is in terms of the TQM dimensions that drive the TQM implementation in the hospital. The model emphasizes the need of Top Management Leadership as the foundation for the TQM implementation in the hospital. There should be a Quality Steering Committee (QSC) which is a dedicated committee directly reporting to the Top management and play the role of liaison between the Top management and the employees. The Top Management has to closely monitor all the dimensions of TQM, through the Quality Steering Committee (QSC) particularly the Customer Management, Process Management, and Supplier Quality Management. The support should be in terms of the providing of the infrastructure support and timely supply of all the physical and human resources necessary for successful implementation of the TQM. The Quality Information Management plays an anchoring role to provide the quality data to all layers of management at the right time, in the right place, and in the right form. The dimension of Organizational Learning is a philosophy where the whole organization transforms itself into a Learning Organization where all the knowledge is captured and stored in the repository of the hospital in the form of knowledge management system which continuously grows in terms of the quantity and quality of data, information, and knowledge about the improvement of the product and service offering of the hospital. Continuous improvement dimension of TQM improve the level of service at all levels in the form of small improvements on a continuous basis. These dimensions are explained in detail in the following paragraphs.
Top Management Leadership (TML): The TML has the sole responsibility to drive TQM and provide all the technology support and infrastructure required for the implementation of TQM. The TML competencies in the form of knowledge, skills, abilities, and attributes of the leaders to motivate the employees towards quality consciousness play a very vital role in the success of TQM. The three roles played by the leaders i.e., setting a direction, aligning people, and motivating and inspiring people at all levels (clinical as well as non-clinical staff of the hospital) are essential for the successful TQM implementation in a healthcare setting. The TML is considered important for several reasons, including the fact that they give direction, they set measurable objectives, and they are important for the learning to take place continuously which is essential for quality improvement. Global mindset may be required in the environment of the hospital and knowledge and expertise seeking beyond boundaries and draw information from many sources in many ways will be essential. Dealing with high ambiguity and uncertainty, taking risk initiatives, experiencing new things, and engaging in personal transformation will be necessary. Focus on continual quality improvement will be necessary to get results, and manage strategy to action by stressing the importance of achievement of goals. The interpersonal skills that help them in bringing out the best in people, increasing their capability for cooperation and team building, attracting and developing talent, motivating and aligning people to one vision, and communicating in both oral and written form is vital on the part of the TML. When the TML is good there will be sound knowledge available at all levels to perform the organizational tasks. This will enable the organization to stay abreast of world standards of competition and know what it takes to match and beat those standards through top quality products and services required in providing the best possible health service.
Customer Management (CMT): Customer management in the context of this model includes domains such as Customer Relationship Management (CRM), Customer Service Management (CSM), Customer-Centric Knowledge Management (CCKM) and so on, all with specific reference of patient as the customer. Customer/Patient orientation is one of the most important principles of TQM and that is the reason it has influence on all the dimensions of business performance as revealed in the hypothesis testing of this research. In the health care service, there is a need to create a culture of achieving business excellence through patient satisfaction as there is more of personalized service which is provided in the hospitals. Ultimately, the patients should continue to use the services of the hospitals for maintenance of health and provide repeated patronage and also recommend the hospital for others and it can happen only if the patients are satisfied with the product or service they have received. CRM is also a widely practiced concept in CMT and it start with the development of a vast amount of patient data which the hospitals are supposed to maintain in order to serve the patients better during their future visits. In the setting of the hospitals this data need to be stored and organized in digital form for future use. Customer-Centric Knowledge Management (CCKM) is also essential for the hospitals in order to know the customers and construct a good relationship and to maintain customer satisfaction and loyalty. It includes the management of processes and techniques used to collect information regarding customers’ needs, wants, and expectations for the development of new and/or improved products and services.

Process Management (PRM): The PRM deals with the application of the principles of management so that the processes in the hospital are under control through clear instructions, constant monitoring, inspection, and standardization. The TQM must have a series of processes and these processes
must be so designed to have a quality focus. Success can be achieved more through its features comprising process improvement and measurement methods. This calls for an efficient PRM with a clear process map and in-built checks and balances in both clinical and non-clinical operations of the hospital. Quality improvements are found mainly by changing processes rather than people, and that the key is to develop co-operative teamwork through empowerment. A shift away from the traditional focus on results towards processes and individual recognition towards group recognition may be important in the context of the hospital as a service sector.

**Supplier Quality Management (SQM):** Marketing, purchasing, service providing, and management in the setting of a hospital requires a number of inputs from both internal and external suppliers and the quality of the service or product offerings of the hospital will be a function of the input quality of all the suppliers. Thus, SQM becomes very important in the context of hospital TQM. This is because the output of the hospital product or service can be as good as the input received for these services or products. When the hospital purchases goods and services from its suppliers, unpredictable events may occur anywhere in the process of acquisition, delivery, and use. The possibility of unexpected events injects an element of uncertainty into the whole process that can compromise an organization’s ability to produce quality products/services and accomplishment of its vision. Quality-related risks exist in supply chains commonly because suppliers fail to maintain capital equipment, to comply with regulations or quality standards, to deliver parts and materials that conform to quality standards, to protect against damage in transit, and to maintain a safe work environment at the supplier site (Zsidisin & Smith 2005; Tapiero & Kogan, 2007). Unless these deviations from the standards are rectified on the spot, TQM will not be successful and thus an efficient SQM is required in the hospital. The quality
team need to check the input quality of the product or service received, maintain a constant relationship with the suppliers by conducting frequent meetings in which the vision and mission of the hospital is shared with the suppliers, the issues related to poor quality if any or the lead times issues are discussed, and a close contact is maintained with all the key suppliers to the hospital. It is also important to receive their inputs to improve the product or service quality of the hospital.

**Quality Information Management (QIM):** The success of TQM is also dependent on how the Quality information is managed. The Quality data in the hospital should be managed centrally by the Quality Steering Committee (QSC) and should have an IT team to provide the technical expertise. There is a need to have the quality related information available to the employees in the hospital as and when required. In the context of the hospital there is also a need to have the quality data pertaining to one department available to the other. For example, the marketing department may need the quality data of a clinical section to market their quality standards to the public. So, the quality data and information may be required at any time by any department for any purpose. It should be made available for the use of the realization of the objectives of the hospital and should be made available at real time for the success of the TQM. Quality data could be on satisfaction with office visit, laboratory services, radiological services, hospitalization services, waiting time, cost of service, ambulance service, primary care service, geographic accessibility, economic aspects, cultural issues, drugs and surgical materials, complaints handling, structural condition of the health care unit, reception service, service hours, etc. Ultimately, the Quality information system of the hospital should have all the quality data in place for any verification or improvement and should be effective in terms of providing of accurate, dependable and authentic quality data.
Organizational Learning (ORL): The ORL is the process of forming and applying the collective knowledge of the entire organization to manifest the vision of the organization into reality. So, it has two distinct phases of operation: first is to establish the processes of ORL and the second apply the outcome of the processes for organizational benefit. The ultimate goal of TQM is to support continuous improvement in the system in a structured and systematic manner. This is possible only through the effective management of ORL. In fact, ORL is the ultimate purpose of TQM because when the organization transforms itself into a learning organization by promoting the ORL, the TQM principles get imbibed in the system and the checks and balances to measure the deviation from quality standards will automatically come into existence and the organization strives towards excellence. While TQM is mainly an internal system which is reactive towards deviation from quality standards and ensures corrective action, the ORL will ensure that the deviations do not occur in the future as the learning through the past mistakes will eliminate the causes of deviation from the source. Thus all the continuous improvement activities undertaken in TQM contribute towards the ORL. So, in one sense ORL is more of futuristic approach which promotes innovation and creativity and looks for better ways of doing things at minimum cost and maximum efficiency. So, the hospital should establish a team which will ensure the organizational learning. The team should again be under the direct supervision of QSC and establish systems and practices which promote ORL. To promote ORL following specific constructs are recommended.

1. **Management Commitment** – Management should be supportive to shared vision and team learning and permit the QSC to create a knowledge culture so as to create, identify, generate, assimilate, validate, store, disseminate, and apply knowledge for the realization of the vision and mission of the hospital.
2. **Systems Perspective** – Management permit the systemic approach in the organization and the people based approach should be discouraged. Robust systems and practices must be generated which run with little or no interference of people wherever applicable. There is no doubt about the fact that in a knowledge intensive service sector like hospital people are indispensable but, the right systems must be in place so that people failure should not cause damage to the smooth functioning of the hospital.

3. **Culture Promoting Innovation** – In a hospital which is looking forward for being unique in terms of its product and service offerings, TQM should also support innovation. So the culture of research, experimentation and innovation must be encouraged by the management.

4. **Knowledge Management System** – The hospital must establish Knowledge Management Systems (KMS) which can store the knowledge related to the patient care so that the service providers know where the knowledge is available when a problem is encountered. The central repository of the KMS should constantly be updated so that the latest knowledge in the field is available to the employees. There should be mechanisms to transform the tacit knowledge (knowledge based on intuition, hunch, gut feeling etc., developed through experience and training) into explicit knowledge (knowledge that can be codified). The KMS will provide the infrastructure to transform the organization into a learning organization.

**Measurement and Continuous Improvement (CNI):** Continuous Improvement is another important component of Total Quality Management
(TQM). This dimension of TQM aims to improve the level of service at all levels in the form of small improvements on a continuous basis. CNI aims to reduce errors, eliminate waste and simplifying all processes from time to time. In a service industry like hospital CNI has to be practiced across the departments to produce the desired results. Since TQM is a continuous process, for its successful implementation CNI has to be applied to the processes in the hospital. This requires constant improvement in all the related policies, procedures and controls laid down by the hospital management. The employees should be trained adequately to develop and provide newer services regularly and continuously. The management should provide adequate resources so that the level of service quality would increase. Finally, in order to check on the success of its continuous improvement initiatives the hospital should measure the performance at regular intervals and based on the results need to review its quality plans.

While the aforementioned dimensions of the TQM given in the model are important to make TQM implementation systematic there are certain steps which may be necessary for the successful implementation of the TQM implementation model:

1. **Design** – Even though the model is generic with the hospital as the focal service industry, each hospital need to design the organizational structure for quality improvement in its own way as demanded by its vision. The key role is to be played by the Quality Steering Committee (QSC) which is a dedicated committee to look into the TQM implementation and directly reporting to the Board of Directors (BOD) and play the role of liaison between the BOD and the employees. While on one side the QSC must ensure the management commitment on the other side it should also closely monitor the employees on the TQM implementation strategies. The QSC should
constitute one Quality Resource Group (QRG) whose role is to ensure that the necessary resources for the implementation of TQM is provided to each department and the QRG may comprise of members from different professional groups working in the hospital eg., Administrative staff, Suppliers, Doctors, Nurses and other paramedical staffs. The presence of these members in the QRG is very much necessary because the quality initiatives must be known by all the employees of the organization irrespective of their department or cadre. The QRG will liaise between the QSC and the process management committee.

2. **Awareness and Training** – There is no substitute for training in the success of TQM. It has to be a continuous and never ending process in the hospital. Quality jargons, standards, policies, procedures and practices must be known by all the employees and the changes have to be communicated to them on a regular basis.

3. **Quality Framework** – It is the responsibility of the QRG to develop a framework of quality management in tune with the vision and mission of the hospital. The framework should be refined and approved by the QSC and discussed during the training programmes. This framework should define the scope of the quality initiatives and the boundary of operations.

4. **Quality Practices** – The quality practices may be unique to the given hospital, however, some common practices may exist. The Process Management team at the department level on a regular basis recommends small but incremental quality enhancing changes in the process and once these changes have been accepted by the QSC it must be practiced by the employees. The improvements should be
effected after a systematic process of problem identification, problem analysis, scope for improvement, evaluation, and the result. The end result should be in the form of specific change in the former process which has to be a new practice. Any such practice which records improvement must be shared during the meetings across the departments during the sharing of the best practices session so that it could be emulated by the other departments.

5. **Customer Involvement** – The customers of the hospital who are essentially the patients must also be involved regularly in the meetings after their successful discharge from the hospital so that their suggestions can also be incorporated when found worthwhile. The ultimate decision makers about the quality of the hospitals are the patients so without their inputs into the system of quality improvement nothing much can be achieved. Meetings may be arranged on a regular basis and if possible they may even be invited to a couple of quality meetings.

**Competitive Advantage (CMA)**

TQM has significant influence on the CMA on the overall basis as revealed through the hypothesis testing in this research. Further, TML, SQM, CNI, PRM, QIM, and ORL influence both the dimensions of CMA whereas, CMT influence Cost Leadership. Thus, during the TQM implementation if the organization is very particular about improving both the dimensions of Competitive Advantage i.e., Product Differentiation and Cost Leadership they need to strengthen the dimensions TML, SQM, CNI, PRM, QIM, and ORL to the extent possible. If the objective is to only gain Product Differentiation then they need to give special attention to TML, SQM, CNI, PRM, QIM and ORL. If the hospital is looking for Cost Leadership then they
need to focus on all the dimensions of TQM except PMT. The hospitals have their resource allocation plans based on their priorities and accordingly as suggested in the TQM implementation model they may pool their resources on these dimensions indicated above.

**Business Performance (BNP)**

The hypothesis testing undertaken in this research has shown that on the overall basis TQM has a significant influence on the BNP of the hospitals. If the hospital is looking for enhancing their Operational Performance in the hospital they need to strengthen all the dimensions of TQM except PMT which may be a bit relaxed. If Financial Performance enhancement is the objective of the hospital at any point in time, then they need to focus on high level of performance on CMT, SQM, CNI, PMT, PRM, and ORL, whereas, if their objective is to enhance Non-financial Performance then they need to give special attention to TML, CMT, PMT, PRM, QIM, and ORL. During the budget allocation the hospitals may divert more resources in physical and human forms and give close attention to these dimensions based on their priority during the TQM implementation in the hospitals.

The TQM implementation model gives the key dimensions of the TQM which need to be focused in alignment with the vision of the hospital and also shows the linkages between these constructs and their linkage with the Business Performance and gaining of the Competitive Advantage. Thus TQM has to be considered as an enabler which facilitates the hospital in producing quality oriented healthcare service as well as product offerings. Its purpose will be defeated if it does not provide a competitive advantage in business over others in the market and enhances the business performance. As the model is build based on the empirical evidence established through
this research it is expected to provide a clear-cut TQM implementation plan and the factors to be considered during the implementation.

6.5 Areas for future Research

The present study throws open many avenues for research related to TQM. First of all, this research had studied the influence of TQM implementation on the gaining of competitive advantage in business and enhancement of business performance. However, the dimensions and the establishment of linkages between them were based on the literature review and the researcher’s experience in the field of healthcare. There could be other dimensions of TQM which have been extraneous to this study but have influence on the endogenous variables. So, future researchers may consider these dimensions to the same set of constructs and may extend this research further.

The instrument developed by the researcher was tested in ten health care organizations. It has been demonstrated that this instrument will be a very useful tool for organizations practicing TOM. This instrument can be used to give periodical feedback regarding areas of strength and weaknesses as regards to TQM practices in hospitals and also can be used for benchmarking organizations to assess the competitive advantage and improvement in business performance gained through TQM implementation. It is suggested that the instrument may be administered in large number of organizations for modifications and final corrections.

Finally, this research is undertaken in a hospital, which is essentially a service sector and the results can be generalized to some extent to other service sectors. Thus, there is scope to use the metric and the methodology adopted in this research to other similar service sectors.
6.6 Conclusion

In this research the main purpose was to identify the issues and challenges in TQM implementation in hospitals in Indian context. From the findings of the present study it could be concluded that Private Sector Hospitals had better TQM implementation strategies than their Public sector counterparts as indicated through the dimensional perception of the employees for all the dimensions except People Management in which both the sectors were equal. Accordingly, the Competitive Advantage and Business Performance of the Private sector hospitals were higher than that of the Public sector hospitals. Through regression analysis it could be concluded that TQM had a significance influence on both the gaining of CMA and enhancement in BNP. This necessitated the application of second generation statistical analysis through Structural Equation Modeling (SEM) using Partial Least Square Method (PLSM) to obtain the results of significance of association of the dimensions of exogenous and endogenous variables. This led to the development of relationships between the dimensions of TQM and those of CMA and BNP. Using these relationships, a model was developed for the implementation of TQM in hospitals which can provide a framework to the policy makers to implement TQM which has the ability to promote the gaining of the competitive advantage in the market and enhance the business performance.

The qualitative analysis also led to some insight gaining conclusions. Through the qualitative questions asked in the questionnaire survey and also through the semi structured interviews, specific suggestions were obtained from the respondents, which were used in the implications of the study directed to the strategic managers in the hospitals and also in the model development. The difficulties encountered by the employees in the implementation of TQM and the challenges in making TQM successful were
also obtained. It could be clearly concluded that successful TQM has the potential to have a significant positive influence on CMA and BNP, however, the implementation is not easy due to the complicated working environment of the hospitals and also the heterogeneous mixture of employees (clinical and the non-clinical employees) working in these hospitals. Here lies the significance of the TQM model developed in this research. The Model can be used by both the hospitals which have already implemented TQM to fine tune their TQM dimensions and the hospitals which are planning to implement the TQM as it provides a clear understanding about the dimensions which need to be considered during the TQM implementation.

Thus this research had focused on the TQM implementation issues as well as it’s bearing on the gaining of competitive advantage through TQM and increasing the business performance. And through the research, the researcher is able to understand the great relevance of TQM in service sector, especially in the Hospitals. She is convinced of the fact that if systematically implemented TQM results in the enhancement of business performance and helps the concerned healthcare entities to gain competitive advantage in business. Therefore, it can be concluded that TQM is vital for healthcare entities to ensure continuous progress and enable them to the dizzy heights. And as such the model developed in this research can be used to guide its effective implementation.