CRITICAL SUCCESS FACTORS FOR TOTAL QUALITY MANAGEMENT IMPLEMENTATION WITHIN THAI PUBLIC HOSPITALS

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A Dissertation Submitted in Partial
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ABSTRACT

Title of Dissertation	Critical Success Factors for Total Quality Management Implementation within Thai Public Hospitals
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The objectives of this research were to examine the critical success factors for total quality management implementation and the hospital accreditation level in Thai public hospitals, and to explore the theoretical linkage between the critical success factors for total quality management and hospital performance. The Pearson's correlation and regression analysis were used to find out the relationship among the variables. The data were collected from Thai public hospitals. The findings showed that 9 critical factors of TQM (leadership, strategy planning, customer focus, workforce focus, technology, process, CQI, KM, and culture) had a positively significant impact on hospital performance, while communication has no significant impact on it. Of the three performance dimensions: hospital management overview, hospital quality system, and customer satisfaction was found to have the most effect on hospital performance.

Based on these research findings, all people who worked in Thai public hospitals understood in the concept of Thailand's healthcare policy implementation accepted it and were well prepared for improving their healthcare services by bettering all critical success factors of TQM that affected hospital performance to gain a higher quality and to provide safety services for patients.

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ABBREVIATIONS AND SYMBOLS

Abbreviations	Terms
%	Percent
$\bar{x}$	Arithmetic Mean
CSF	Critical Success Factors
df	Degree of Freedom
EFQM	The European Foundation for Quality Management
HA	Hospital Accreditation
HAI	The Healthcare Accreditation Institute (Public Organization)
ISO	International Organization for Standardization certification
MBNQA	The Malcolm Baldrige National Quality Award
n	Sample Size
P-value	Probability Value
r	Pearson Product Moment Correlation
R^2	Square Multiple Correlation
S.D.	Standard Deviation
t	t-Distribution
TQA	Total Quality Award
TQM	Total Quality Management
X^2	Chi-Square Test

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Today, all types of organizations are facing challenges, so they have to evaluate their internal and external environment for opportunities and challenges in order to maintain their growth and remain competitive. Intensive global competition and increasing customer demand for better quality have made all organizations provide quality products and services. Many organizations have adopted and implemented the total quality management (TQM) strategy, which is widely recognized as a major factor in the success and survival of the organization. One type of the fastest growing organizations is health care organizations, which have now been restructuring the service delivery system in order to reduce the costs, to increase competitiveness and to survive.

The concept of TQM, including its philosophy and principles, is quite old. It was introduced into the United States around 1980, mainly in response to the challenge of furious competition from Japanese companies. TQM is a very important factor for the long-term success of the organization because it focuses on continuous process improvement within an organization to provide superior value to meet customer needs. TQM was first introduced in manufacturing sector and has quickly spread to the service sector, including healthcare sector. Healthcare organizations adopted TQM in the late 1980, mainly in response to pressure from their patients, employers, employees to offer more efficient health care. Every hospital is trying to improve the quality of service delivery and is making commitment to zero defects.

The TQM strategy can be implemented to secure the market share, increase profits and reduce costs. Several studies have shown that TQM is positively correlated with financial performance and profitability, customer satisfaction, employee satisfaction and employee relations. So performance measurement is very important to

achieve effective enterprise management. According to Deming (1982), improvement of something cannot be made without measurement. Indicators for measuring the performance of the organization are the quality of products / services, relationship with customers; reliability, productivity, durability, response to the customer needs, and the number of non-compliant and the number of complaints. Many organizations use the excellence models and excellence awards to measure and to evaluate service delivery and performance. The major business excellence awards, e.g. ISO9000, Deming Application Prize, the Excellence Quality Award (EQA) and the Malcolm Baldrige Quality Award (MBNQA), are based on a perceived model of business excellence (TQM). The models underpinning the assessment frameworks implicitly recognize that the excellence of the final results is the outcome of complex or integrated processes and employees' efforts. Each self-assessment framework also has its unique categories and emphasis. The Deming Prize addresses factors concerned with the management of facilities, vendors, procurement and service. The EFQM considers the management and provision of resources. The Baldrige Award incorporates projection of the competitive environment, management of data and information and consideration of human resources. Many countries have established their own national awards. For example, Thailand has Thailand Quality award (TQA), Public Management Quality Award (PMQA), and Hospital Accreditation (HA) based on the Malcolm Baldrige National Quality Award (MBNQA) in the United States.

Many scholars conducted research on service quality and found the most important factor for customer satisfaction was competitiveness of the enterprise. It is important for the organization and its leader to determine the critical success factors to achieve high performance and to gain greatest competitive influence. Although thousands of Thai public hospitals have improved the quality of their service delivery by using TQM, they do not provide the same quality service. What has caused their difference? This research aimed to identify the critical success factors that affected hospital performance. Research question is “What are the critical success factors for total quality management implementation within Thai public hospitals?

1.2 Significance of the Problem

Healthcare organizations are highly competitive in the world market. They are one of the fastest growing industries in the service sector. The rapid changes in healthcare organizations are attributed to change in education and standards of living, medical advancement, growth of information availability, the rising cost of healthcare, complexities of diseases, and high customer expectation for quality. Thus healthcare organizations have been reformed to address the quality and patient safety issues. TQM in healthcare organizations provide a better way to resolve the quality problem and to gain patients' satisfaction. It will lead to be excellence in healthcare services at public and private hospitals. Some hospitals have adopted a quality management system and standards and thus have been accredited by quality accreditation agencies. But a large number of hospitals are still providing a lower level of required healthcare services to their patients. MBNQA, EFQM, JCI, MBHCP, and ISO series of standards are quality models specifically used to analyze the information and data available at hospital and to measure the quality of healthcare services to patients through quality management activities with organizational support.

The Quality Malcolm Baldrige National Award (MBNQA) is the award established by the U.S. Congress in 1987. It raises awareness of quality management and recognizes U.S. companies that have implemented successful quality management systems. The MBNQA criteria for performance excellence consist of seven items: leadership, strategy planning, customer focus, measurement analysis and knowledge management, workforce focus, operational focus, and results.

The European Foundation for Quality Management (EFQM) was established in 1991. The EFQM excellence model is also used as a framework for quality performance measurement and this model has been adopted in many countries around the globe. The model is considered as a valid representation of TQM in Europe, consists of nine performance indicators: five enablers (leadership, strategy, people, partnerships & resources, processes, products & services), and four result indicators: (customer, people, society, and business results).

Joint Commission International (JCI) was established in 1997 in order to measure the standard based evaluation of healthcare institutions around the world to

improve the quality of healthcare services, and safety related issues. The JCI standards which are consensus based standards are used to assess the operation and management of all aspects of hospitals. The JCI accreditation standards for hospitals are divided into two broad categories as: 1) patient-centered standards (access to care and continuity of care, patient and family rights, assessment of patients, care of patients, anesthesia and surgical care, medication management and use), 2) health care organization and management standards (quality improvement and patient safety, prevention and control of infections, governance, leadership, and direction, facility management and safety, staff qualifications and education, and management of communication and information).

The Malcolm Baldrige Health Care Criteria for Performance (MBHCP) Excellence Model which was based on MBNQA was introduced in USA in 1995. It was a pilot program to measure the quality and performance of the healthcare institutions. MBHCP is evaluated and updated every year to keep up with the changing global environment. The MBHCP award is considered as the most prestigious award for the performance of healthcare organizations around the globe. It also follows the MBNQA criteria for assessment.

International Organization for Standardization (ISO) is a worldwide alliance of national standards bodies. ISO 9000 standard is an internationally recognized set of guidelines for the setting quality system. The original standard was adopted in 1987. The standard was designed to help companies identify the error, with an emphasis on improving the process of control and documentation for the guaranteed level of quality.

In Thailand the Ministry of Public Heath has continuously implemented a health policy to improve health services and facilities. Hospitals in Thailand have developed and improved their own services to fit health situations and trends. Healthcare managers need to redesign strategies by focusing on patient needs and providing high quality services at reasonable costs. Total Quality Management has been employed to improve the standard and quality service. Hospital Accreditation (HA) was the excellence model for measuring the quality and performance of the healthcare, it was set in Thailand in 2000 based on MBNQA and was managed by Healthcare Accreditation Institute (HAI) which is a formal government agency with

its own governing body accountable to the Minister of Public Health. The purpose of the HAI is to promote quality improvement of healthcare organizations in Thailand, using self assessment and self improvement together with external evaluation and recognition as an incentive.

1.3 Research Questions and Objectives

1.3.1 Research Questions

The research question was “What are the critical success factors for TQM implementation within Thai public hospitals?”

1.3.2 Research Objectives

The objectives of the study were

1) To find out the HA level, along with the HA score, after total quality management implementation of Thai public hospitals.

2) To determine the critical success factors for total quality management implementation in Thai public hospitals.

3) To suggest HAI other criteria for accrediting Thai public hospitals to HAI.

1.4 The Scope of the Study

1) This research focused on not only the performance of public hospitals in Thailand that had been evaluated by HAI but also analysis of key factors influencing the success of public hospitals.

2) The theoretical framework for analyzing the success of public hospitals included the theories concerning the reform of public organizations, such as the theory of total quality management and performance measurement

3) All participants were hospitals the performance of which was evaluated, so the unit of the analysis was at the organizational level.

1.5 Definition of Terms

1) Total Quality Management refers to all the functions that respond to the needs and expectations of the customers and the community and to the objectives of the organization in the most efficient and cost effective manner by maximizing the potential of all the employees in a continuing drive for improvement.

2) Hospital performance means hospital accreditation level granted by HAI in Thailand.

1.6 Organization of the Study

The outline of the dissertation is as follows: Chapter1begins with a brief overview of introduction to the problem and then turns to the significance of the problem, the research question and the objectives, the scope and the benefits of the study. Chapter2 reviews the literature of the previous research on, for example, organization theory, total quality management, performance measurement, followed by conceptual framework and hypothesis development. Chapter3 deals with the research methodology, which included research design, unit of analysis, operational definitions, data collection and analysis, and validity and reliability of the measurement. Chapter4 describes the results of the quantitative analyses, statistical analyses and discussion of the research findings. Chapter5 presents the conclusions, contributions, limitations, and recommendations for further research.

1.7 Summary

This research studied critical success factors for TQM implementation in Thai public hospitals. It was expected to make theoretical contributions to organization theory, total quality management and performance measurement. And this study \also made practical contributions and presented policy implications to the healthcare context in Thailand.

CHAPTER 2

LITERATURE REVIEW

In this chapter the literature on organization theory, performance measurement, and total quality management and previous research studies were reviewed. The researcher explored the major concepts of organization performance and critical success factors of TQM for developing its conceptual framework of the study.

2.1 Organization Theory

Organization theory (OT) has been studied with different perspectives by various researchers for many years. Many articles have written on organization theory and its definitions, structure and design of organization, evaluation and measurement of organizations (Lawrence & Lorsch, 1969; Meyer, 1977; Scott, 1981). Organization theory is the subject, which concerns organization change or the ability of an organization to itself accomplish its main objectives, performance, outcomes and organizational effectiveness (Hellriegel & Slocum, 1973; Bakke, 1959; Hicks & Gullet, 1975). The effectiveness of organization performance is the main theme in organization theory (Robbin, 1990). OT describes how organizations can deal with problems to improve their efficiency and productivity to meet what the stakeholders have expected.

Since there are internal and external organization forces so organizations must change themselves to survive by improving goals, structure, technology and process. Organizational change can be defined as an integrated process to change the present structure to increase organizational effectiveness, efficiency and performance (Burke, 2008). Organizations need to improve their performance for survival and growth by using new methods to utilize resources to create value and to respond to their employees.

Modern organization theory reflects contributions from the contingency approach. It provides a situation-oriented framework and identifies variables which are significant factors contributing to the good or bad structure of the organization (Ivanko, 2013; Chun-Xia, Han-Min, & Xing-Xiu, 2013). The organization needs to be adapted to the environment to sustain high performance. Organizational change and adaptation need to be done effectively by the leaders of organizations. Change is a continuous process so the key leaders need to motivate the employees to change. They must act as role models to increase organizational effectiveness.

Organizational control has a direct effect on organizational performance effectiveness because it is a process that monitors the achievement of the organization's objectives (Ouchi & Maguire, 1975). There are many kinds and levels of control. As different organizations pursue different kinds and levels of control, the efficiency of the control process, such as monitoring of subordinate behavior and outcome, which is employed in an organization will affect organizational performance and effectiveness. Control is the power of leadership, authority coalition, coordination of the employees, hierarchy of organizational structure, and relationship in the organization (Robbins, 1990).

2.2 Performance Measurement

Deming states that measuring is important for any organization because it helps the organization to improve strategy, process, and goals (Åhrén & Parida, 2009). So performance measurement is a critical function to optimize organization management because it links between the strategies of owners or managers and management actions. And performance measurement executes the improvements in the performance of employees or teams to meet the standards (Neely, Gregory, & Platts, 2005).

Business performances involve such financial aspects as profit, market share, and growth. In public organizations there are many tools that help measuring organization performance, Kaplan and Norton's Balanced Scorecard in 1992, for example. Many performance measurement tools have been created by different researchers as shown in table 2.1

Table 2.1 Researchers and Performance Measures

Researchers	**Performance Measures**
Prajogo and Sohal (2001); Feng et al. (2006)	Quality performance Innovation performance
Prajogo and Hong (2008)	Product quality performance Product innovation
Saravanan and Rao (2007)	Quality performance Operational performance
Lin et al. (2005)	Satisfaction level Business results
Fuentes et al. (2006)	Operation performance Market and financial performance Employee performance
Sit et al. (2009)	Customer satisfaction
Ooi et al. (2008)	Job satisfaction
Zakuan et al. (2010)	Employee satisfaction Customer satisfaction .Business results
Sadikoglu (2008)	Employee satisfaction Innovation performance Operating performance Quality performance Customer satisfaction Financial performance

In Table 2.1 performance measures were quality performance, operational performance, innovation performance, customer satisfaction, employee satisfaction and market and financial performance.

Performance measurement should be developed based on the strategy of the organization. It should include many types of data and information on product, customer, process, market, workforce, and financial performance. Many researchers

implied quality management practices or criteria for performance measurement in table 2.2.

Table 2.2 Quality Management Practices According to Performance Measurement

Researchers	**Quality Management Practices**
Quazi and Padibjo (1998)	Leadership; Strategic planning; Human resource utilization Information and analysis; Management of process quality; Quality results; and Customer satisfaction.
Saraph et al. (1989)	Role of divisional top management and quality policy; Role of the quality department; Training; Product/service design; Supplier quality management Process management; Quality data and reporting; and Employee relationships.
Flynn et al. (1995)	Top management support; Quality information; Process management; Product design; Workforce management; Supplier involvement and Customer involvement.
Ahire, Golhar, and Waller (1996)	Employee empowerment; Employee involvement; Employee training; Product quality; and Supplier performance; Top management commitment; Customer focus; Supplier quality management; Design quality management; Benchmarking; Statistical process control usage; Internal quality information usage.
Anderson and Sohal (1999)	Customer focus; Quality of process, product & services; Leadership; Strategy, Policy and planning; Information and analysis; and People.
Zhihaig, Waszink, and Wijngaard (2000)	Leadership; Supplier quality management; Vision and plan statement; Evaluation; Process control and improvement; Product design; Quality system improvement; Employee participation; Recognition and reward; Education and training; and Customer focus.

Table 2.2 (Continued)

Researchers	Quality Management Practices
Arumugam, Ooi, and Fong (2008)	Continual improvement; and People involvement ;Leadership; Process management; Information analysis; Customer focus; Supplier relationship; Quality system improvement

In Table 2.2 quality management practices for performance measurement must cover top management commitment, leadership, human resource results, employee satisfaction, training, customer focus, continuous improvement, strategy quality planning, product innovation and quality process.

There are several approaches and criteria to measure performance and the outputs of the accomplishment (Tan, 2002). The quality model is the other way to measure the organization performance and it is recognized internationally as a model of excellence for an organization to enhance its service and performance excellence. It helps organizations measure and improve their progress through the self-evaluation process. The model of excellence is related to the work of staff at all levels with an aim to improve their performance excellence. The model of performance excellence emphasizes the importance of process management, customer satisfaction, quality, and the success of competitive position (Tan, 2002).

The Japanese Deming prize was awarded to an organization with best quality management. Rapidly the United States and European country established their own quality award, MBNQA for the US and EFQM for the EU. Later, many countries establish their own national award, which were designed on the basis of MBNQA, EFQM and the Deming Prize.

Table 2.3 Quality Excellence Awards and Measurement Dimensions

Quality Excellence Awards	Measurement Dimensions
MBNQA	Leadership, strategy planning, customer focus, measurement analysis, workforce focus, operational focus, and results.
EFQM	Leadership, strategy, people, partnership and resources, processes, products and services, results.
MBHCP	Leadership, strategy planning, customer focus, measurement analysis, workforce focus, operational focus, and results
ISO series of standards	Top management commitment, human resource, benchmarking, improve in product and service design, develop to record, maintain, data analysis using statistical methods.

International Organization for Standardization (ISO) is a worldwide alliance of national standards bodies. ISO 9000 standard is an internationally recognized set of guidelines for the setting quality system. The original standard was adopted in 1987. The standard was designed to help companies identify the error, with an emphasis on improving the process of control and documentation for the guaranteed level of quality. The new standard is based on principles that focus on the core value and the concept of TQM. The quality management standards focus on management development and development of operating procedures to ensure consistency in production/operation that ultimately helps to ensure the service and product delivery that meets and exceeds customer-stated and implied requirements.

MBNQA is the award offered by the U.S. Congress in 1987. It raises awareness of quality management and recognizes U.S. companies that have implemented successful quality management systems. The MBNQA criterion for performance excellence consists of seven items: leadership, strategy planning, customer focus, measurement analysis and knowledge management, workforce focus, operational focus, and results.

The European Foundation for Quality Management (EFQM) was established in 1991. The EFQM excellence model is also used as a framework for quality performance measurement and this model has been adopted in many countries around the globe. The model, which is considered as a valid representation of TQM in Europe, consists of nine performance indicators: five enablers (leadership, strategy, people, partnerships & resources, processes, products & services) and four result indicators: (customer, people, society, and business results).

Joint Commission International (JCI) was established in 1997 in order to measure the standard based evaluation of healthcare institution around the world to improve the quality of healthcare services and address safety related issues. JCI standards which are consensus-based standards are used to assess the operation and management of all aspects of hospitals. The JCI accreditation standards for hospitals are divided into two broad categories as: 1. patient-centered standards (access to care and continuity of care, patient and family rights, assessment of patients, care of patients, anesthesia and surgical care, medication management), 2.health care organization management standards (quality improvement and patient safety, prevention and control of infections, governance, leadership, and direction, facility management and safety, staff qualifications and education, and management of communication and information.

The Malcolm Baldrige Health Care Criteria for Performance (MBHCP) was introduced in USA in 1995 which was based on MBNQA. It was a pilot program to measure the quality and performance of the healthcare institutions. MBHCP is evaluated and updated every year to keep up with the changing global environment. MBHCP award is considered as the most prestigious award for the performance of healthcare organizations around the globe. It also follows the MBNQA criteria for assessment.

Regarding quality performance excellence in Thailand; Thailand Quality Award (TQA) is determined by the Thailand Productivity Institute (FTPI) and the Office of Science and Technology (NSIDA) in September 1996. Organizations with the best practice and performance excellence can apply for a Total quality award (TQA).

Hospital Accreditation (HA) is the quality performance excellence model for healthcare organizations in Thailand. Hospital Accreditation (HA) in Thailand was set in 2000 based on MBNQA and was managed by the Healthcare Accreditation Institute (Public Organization) or HAI which is a formal government agency with its own governing body accountable to the Minister of Public Health. The purpose of the HAI is to promote quality improvement of healthcare organizations in Thailand, using self assessment and self improvement together with external evaluation, and recognition as an incentive.

2.2.1 Public Organization Performance

In the public sector, the government has implemented necessary measures to handle working conditions, organizational climate, work stress and satisfaction in the workplace and employee communications (Morgan & Murgatroyd, 1994). The evaluation of public organization performance concerns how the organization has performed, or its outcomes, and requires both non financial and financial information for its planning strategy and policy (De Waal, 2010).

Thai public organizations have implemented a performance management system since 2004 and annually use the balanced scorecard to evaluate the performance to improve their strategy and policy for public services in the following year.

The quality award for Thai public organization is the public management quality award (PMQA) which its criteria was adopted from MBNQA.

2.2.2 Performance Measurement in Healthcare Organizations

Being aware of the performance of the hospital becomes more significant. It must adapt itself to an external environment that continuous change, in order to complete its mission even in the newly rising context (Barliba, Andrei, & Silviu-Mihail, 2012).

The performance of hospitals may differ, depending on the accomplishment of specified targets, either clinical or administrative. Ultimately, the goal of health care is better health, but there are many intermediate measures of both the process and the outcome. Targets may be related to customary hospital functions, such as diagnosis,

treatment, care and rehabilitation, in addition to teaching and research. Hospital performance may thus be expected to include elements of community care and public health, plus social and employment function. The concept of hospital performance is a multidimensional one, covering a variety of aspects, such as: evidence-based practice (EBD), continuity and integration in healthcare services, health promotion, orientation towards the needs and expectations of patients (WHO, 2000).

Many hospital performance measurement systems suppose to have a common culture of transparency, professionalism and accountability that motivates cooperation. The design of performance measurement system should aim to improve hospital performance, rather than to identify individual failures. And such a system should not rely on single sources of data but should use a range of information.

Health care criteria are built on a set of organized core values and concepts, visionary leadership, patient-focused excellence, organizational and personal learning, valuing workforce members and partners, agility, focus on the future, managing for innovation, management by fact, societal responsibility and community health, focus on results and creating value, and systems perspective. The criteria have three important roles in strengthening competitiveness: 1) To improve organizational performance practices, capabilities, and results. 2) To facilitate communication and sharing of information on best practices among organizations. 3) To serve as a working tool for understanding and managing performance and for guiding organizational planning and opportunities for learning

At the system level, improvement in such areas as health priority setting, system planning, financing and resource allocation, professional recognition and overall quality management often become important aims of health reforms.

At the global level, findings concerning performance measurement of health systems in 1992 Member States were summarized in the World Health Report 2000. This document sets out a framework for evaluating and improving performance of health systems in four key functions: providing services, creating resources, financing and oversight. There are in principle five different types of measurement of hospital performance: regulatory inspection, surveys of consumers' experiences, third-party assessments, statistical indicators, and internal assessments.

The literature review of systems of the management of performance in hospitals abroad, revealed several main dimensions, clinical efficiency, production efficiency, personnel, social accountability and reactivity, safety, and focus on patient (Table 2.3)

Table 2.4 Main Dimensions and Indicators in Measuring Hospital Performance

Dimension	**Indicators**
Clinical efficiency	Number of complications, re-hospitalization and mortality.
Production efficiency	Average day in hospital, cost, beds occupancy
Personnel	Rate of absent, transfers, number of specialization
Social accountability	Counseled patients, patients with GP/ specialist
Patients focus	Waiting time of patient, percentage of patients informed, patient satisfaction
Safety	Rate of infections, accidents, complications

Performance measurement in Thai healthcare organizations was introduced in 1995 by the Office of the Permanent Secretary to the Ministry of Public Health Thailand for improving health services. All hospitals are new required to develop a systemic approach to monitor and evaluate the quality of their healthcare. Later, Hospital Accreditation (HA) in Thailand which was based on MBNQA was set in 2000 and was managed by the Healthcare Accreditation Institute (Public Organization) or HAI which is a formal government agency with its own governing body reporting directly to the Minister of Public Health. The purpose of the HAI is to promote quality improvement of healthcare organizations in Thailand, using self-assessment and self-improvement together with external evaluation, and recognition as an incentive.

Eight Thai public hospitals started to apply the concept of total quality management and the first hospital standards in 1996. After 3 years 35 public and private hospitals adopted TQM which has later spread to other hospitals. They applied the standard of the Health Systems Research Institute (HSRI), which changed its

name to the Healthcare Accreditation Institute or HAI, in 2009 HAI as a formal government agency is under the Ministry of Public Health. It has its own structure and people. The main objective of the HAI is to promote the high quality of all Thai healthcare organizations.

The HA process in Thailand is divided in 3 steps. The first step is reviewing activities of the organization and to identify how it improves and prevents risk that may be accrued. The second step is assessing quality assurance and quality improvement to fulfill the objective of the hospital. The third step is measuring the full hospital program to see if it meets the HA standard. After applying the HA standard, hospitals need to report to HAI the implementation and the results; review of all medical records, including the data from the interviews of hospital staff and teams, logs of observation, and tracking of methodology. After that the surveyors will be sent to the hospital to conduct a survey and give HA scores to each of the three parts (organization management overview, hospital quality system, and customer satisfaction/patient care), 28 subjects. HA scorings ranges from 1 to 5 (Table 2.5). The surveyors calculated score, reported and suggested a decision to give accreditation award to the HAI Board. The decision has to be made within 90 days after the survey.

Table 2.5 Guidelines for Determining the Maturity Level of Development

Score	Approach	Deployment	Results
1	Reactive	Some areas	Limited
2	Defined	Some key areas	Fair
3	Integrated	Most key areas	Good
4	Refined	All key areas	Very good
5	Innovation	All area	Excellent

Consider the maturity level of development in Table 2.5

Score1 implies the stage of development the analysis, set the team, resources, and the guidelines.

Score 2 implies the stage of development the system and begin to practice.

Score 3 implies the stage of guidelines designed to see early result.

Score 4 implies the stage of a dominant position in certain process.

Score 5 implies a process of evaluation and improvement systems

The surveyors accredited and gave score 1-5 on 28 subjects , calculated score and concluded the results of Hospital Accreditation and the HA level followed HA scorings ranges in Table 2.6

Table 2.6 HA scorings ranges from 1 to 5

The Score	Hospital Performance (HA level)	Results of HA
Between 0.5-2.5	Level 1	No pass
Between 2.5 -3.0.	Level 2	Pass
Between 3.0-3.5.	Level 3	Good
Between 3.5-4.0	Level 4	Very good
More than 4.0.	Level 5	Excellent

The surveyors calculated score, reported and suggested a decision to give accreditation award to the HAI Board. The decision has to be made within 90 days after the survey.

2.3 Total Quality Management

Almost companies are looking for a way to satisfy their needs and expectations by improving product quality and producing innovation. So they improve their old quality systems and implement new way to approach to deliver the customers higher quality goods and services. Quality improvement and innovations have become a main driving force throughout the globe. Total quality management (TQM) is one of important processes running organizations successfully. It has been adopted in many sectors such as banking, education, service, government.TQM is aimed at continuous improvement of the product and service quality process to achieve customer satisfaction (Gorji & Farooquie, 2011). TQM has become a globally strategic force, which may lead to several benefits: improved customer satisfaction,

greater employee focus and motivation, reduced waste and improved overall performance (Juran, 1988).

TQM consists of two processes. The first one is total quality control, the process that ensures a long-term success strategy for organizations and has direct affects on customer satisfaction, employee satisfaction, product quality assurance, product innovation, and continuous improvement. The second one is a quality management process how to plan, organize and direct the organization to excellent at a high level. And TQM brings all people in the organization to improve their product, process, the work environment, and also the culture of the organization.

Table 2.7 The Concept of TQM Defined by Many Researchers

Researcher	**The Concept of TQM**
Oakland (1989)	TQM is an approach to improving the effectiveness and flexibility of business all together. It is basically a way of organizing and involving the whole organization; every department, every activity, every single person at every level.
Zaire and Simintiras (1991)	TQM is the arrangement of the socio-technical process towards doing the right things (externally), everything right (internally) first time and all the time, with economic feasibility considered at each stage of each process.
Pfau (1989)	TQM is an approach for continuously improving the quality of goods and services delivered through the participation of all levels and functions of the organization.
Tobin (1990)	TQM as the totally integrated effort for gaining competitive advantage by continuously improving every facet of organizational culture
Deming (1982)	An operational definition of TQM which gives a motivational meaning to the concept.
Sink (1991)	TQM can be successful only if the operational definition is translated into strategies by the leadership of the organization and which are crystallized into actions and communicated to all the people with conviction and clarity

Table 2.7 (Continued)

Researcher	The Concept of TQM
Oakland (1989)	TQM as a pyramid representing five distinct components– management commitment, customer-supplier chain, quality systems, Statistical Process Control (SPC) tools and teamwork.
Sohal, Tay, and Wirth (1989)	TQM have five elements such as customer focus, management commitment, total participation, statistical quality control and systematic problem solving.
Zaire and Simintiras (1991)	TQM can be formulated in terms of the three important aspects of continuous improvement, value-added management and employee involvement.
Price and Gaskill (1990)	Three dimensions of TQM are: (1) the product and service dimension: the degree to which the customer is satisfied with the product or service supplied; (2) the people dimension: the degree to which the customer is satisfied with the relationship with the people in the supplying organizations; (3) the process dimension: the degree to which the supplier is satisfied with the internal work processes, which are used to develop the products and services supplied to the customers.
Prajogo and Sohal (2001)	TQM is positively related to innovation performance because it establishes a system and culture that will provide a fertile environment for organizations to innovate.

Based on Table 2.6 the concept of TQM includes the following: continuous improvement, process improvement, customer focus, employee involvement, and quality performance.

2.3.1 TQM in the Manufacturing

TQM evolution and its success in the manufacturing sector was recognized by the Japanese manufacturing industry and later admired by the USA in 1980's. Early

work on TQM was developed by Deming in 1986 and brought to manufacturing around the world. For example, Australian and New Zealand manufacturing companies developed an instrument based on MBNQA criteria, empirically tested the reliability and validity of the constructs, and further investigated the relationship between these constructs and operational performance (Samson & Terziovski, 1999). Chinese manufacturing companies implemented TQM in the manufacturing sector and suggested 11 TQM constructs for TQM theory development (Zhang, 2000). Firms in Turkey utilized TQM and many researchers found that different TQM practices affected different performance outcomes (Sadikoglu & Olcay, 2014). Many empirical studies were conducted to establish the relationship among CSFs of TQM or TQM practices and various performance measures and indicated its positive results in the manufacturing sector (Sila & Ebrahimpour, 2002)

2.3.2 TQM in the Service Sector

TQM is not confined only to ensure product quality but it is also equally important to increase the quality of service. Quality of service has become interesting and important for service providers. The application of TQM in the service industry was studied for the first time by Saraph et al. (1989). Studies after that have confirmed that the method can be applied to service organizations (Talib, Rahman, & Qureshi, 2013).

Measuring and determining the quality of service are complex and difficult. It is up to the customers' expectations and perceptions. Therefore, the quality of service is the result of a comparison between the customers' expectations and their perceptions of the quality (Feigenbaum, 1956). There are two ways to measure the quality of service. One was the model offered by Gronroos (1978) and the other was presented by Grönroos (1984)

TQM in the service sector have been examined in many empirical studies. For example, the service sector in Singapore tested 11 constructs for TQM and performance (Brah,Wong, & Rao. 2000), banking industry in Indian 12 dimensions were analyzed a positive impact on performance (Sureshchandar & Anantharaman, 2001). In the UK selected 11 critical success factors (CSFs) of TQM in service organizations were selected and it was found that focus on customers was the most important factor and suppliers the least important (Tsang & Antony, 2001). In Greece,

CSFs of TQM in service companies were divided into soft (quality management principles) and hard (quality tools and techniques) parts and a significant positive relationship was found between TQM and performance (Fotopoulos & Psomas, 2010). In 2013Talib et al. investigated the relationship between TQM practices and quality performance in Indian service companies and found that the quality culture was perceived as the dominant TQM practice in quality performance.

2.3.3 TQM in Healthcare Organization

Like other sectors, importance of quality in the healthcare sector has been recognized quite lately. It may be due to the complexity and nature of services delivered by the health care institutions. However, quality has been an integral part of health care service since it is linked with the life of the patient. As the service delivery system must have zero defects, hospitals need improvement. In the late 1980 healthcare organizations first adopted TQM in response to the pressure from employers, purchasers, and payers to get more cost-effective healthcare. TQM has become a globally strategic force, which may lead to several benefits: improved customer satisfaction, greater employee focus and motivation, reduced waste and improved overall performance (Juran, 1988).

TQM is a paradigm shift in the management of health care organizations. They have committed to shared responsibility, to contributions, to continuous improvement and to flexible objectives and plans. TQM calls for changes based on the needs of the customer, not the provider. It requires the involvement of staff and quick and careful responses from the top management. TQM in the health sector focuses on patient satisfaction, continuous improvement, teamwork, process management, organizational culture and the commitment of the management and leadership support (Talib, Rahman, & Qureshi, 2013).

Many health care institutions have successfully implemented of TQM in health care institutions. Health care organizations in the United States have applied TQM in order to be more competitive. Hospital Corp. of America (HCA) has been a leader in the application of ideas to improve the quality. A survey of hospital administrators in the United States and Canada found that continuous quality improvement (CQI) was not just a fad, but was essential for the survival of their organizations.

Some studies show the positive aspects of the TQM philosophy, such as improving financial performance, increasing competitive advantage and the commitment of the staff in various health care organizations. For example, in 2006, Jeffrey Irvine Alexander found that hospitals which applied quality improvement efficiently could be expected to improve their financial performance and reduce the cost, or at least the hospitals had less risk after investing in quality improvement. In 2005, Mustafa Dilber et al. conducted a study of TQM in the health care industry in Turkey and found two dimensions of hospital performance: financial and non-financial factors. Irfan (2012) found that performance measurement increased flexibility, improved quality of services, reduced service time and increased efficiency.

2.3.4 TQM in Thai Healthcare Organizations

In 1999 the Thai government enabled Thai people to access standard healthcare. The government set a policy to better many aspects of the health system including the quality of care. The Thai Medical Council was the first agency that set a short list of hospital standards. A set of hospital standards developed by the Social Security Office in 1991 aimed to approve and audit hospitals. Later in 1995, the Ministry established the central authority to resolve the conflict in the healthcare quality and cost between providers and consumers.

All hospitals in the provinces applied for hospital accreditation to show their commitment to providing quality services for health and safety of patients. Hospitals have chosen to open their doors and invite certified evaluators to inspect them. The Certificate Services sent a team of inspectors to hospitals and made an observation for a period of weeks or months. The results of the inspection were sent back to the hospitals. These results concerned general administration, patient care, and treatment quality. The hospital level (HA level) was also ranked.

2.3.5 Critical Success Factors of TQM

Critical success factors (CSFs) of TQM can be applied to a number of areas that help to provide satisfactory results and to increase performance as well as competitiveness (Joyce, Green, & Winch, 2006). They are implemented to achieve the

vision, goals, and mission by examination and categorization of their impacts (Oalkland, 1989).They are set of enablers or variables that make sure the success of organizations as well as managers in those critical areas that require special and continual attention to gain high performance (Boynton & Zmud, 1984).

Many researchers stress that CSFs of TQM are critical for the success of an organization that provides services in the healthcare sector. (Irfan, 2014; Saraph, Benson, & Schroeder, 1989; Sureshchanda, Rajendran, & Anantharaman, 2001; Talib & Rahman, 2010). CSFs include the commitment of senior management, leadership role, human resource, improvement in product and service designing, data analysis using statistical methods and utilization of the results to make improvement at all levels. Many research studies on CSFs were for example, research by Saraph, Benson, and Schroeder (1989), Flynn, Schroeder, and Sakakibara (1995), Motwani, Mahmoud, and Rice (1994), Badri, Davis, and Davis (1995), Powell (1995), Black and Porter (1995), Ahire, Golhar, and Waller (1996), Madu, Kuei, and Jacob (1996), Flynn, Schroeder, and Sakakibara (1995), Saraph et al. (1989) and Sila and Ebrahimpou (2002). Many studies recommended the evaluation of critical success factor of TQM and the results (Arshida & Agil, 2013). But most studies had been proven in non-healthcare organizations. The researcher therefore decided to study TQM activities, the critical success factors and organization performance in Thai public hospitals. The finding will be beneficial to hospital administrators.

2.3.5.1 Leadership

In the literature of many researchers such as Rabih (1998), Dilber et al. (2005), Mosadeghrad and Yarmohammadian (2006) and Schmitt (2012) has indicated that leadership is an important factor for organizational success. Leadership is the behavior of guiding workers to reach the target and encouraging the staff to develop them. Many studies have shown that leadership is a major force for improving the performance of the company. Leadership has a direct impact on customer satisfaction, employee satisfaction and financial performance. It is universally described as a process of one person influencing others to accomplish the goals. Leadership roles are administrative, managerial, and educational. Although some scholars think that leadership improves the performance of the organization, there are other arguments.

Gaps and questions to be answered remain. This study thus aimed to reexamine the leadership and hospital performance.

2.3.5.2 Strategy Planning

Many researchers found that strategy planning affected organization performance and the information system. Caldwell (2008) showed strategic planning was directly related to patient satisfaction in healthcare organizations. Naranjo-Gil (2004) found the prospector strategy could affect the accounting information system. The hospital quality strategy will increase the safety of patients and staff and improve hospital performance. But there is a lack of strong evidence about the effects of hospital quality strategy on improvement of the quality of individual hospitals. The gap made this study aim to re-examine the relationship between strategy planning and hospital performance.

2.3.5.3 Customer Focus

Customer focus is the extent to which the organization continues to meet the needs and expectations of customers (Zhu, Lin, Tsai, & Wu, 2010), which are considered as one of the basic dimensions of TQM. The organization which has focused on serving external clients should know its customers' expectations and needs. Some scholars have found that the TQM increase customer satisfaction (Steven, Dong, & Dresner, 2012) and improve organizational performance (Mokhtar, 2013; Sun & Kim, 2013). Health care organizations are believed to be more customer-oriented than all other organizations. The quality of their services is important to the patients and the community. Patients are now regarded as healthcare customers, recognizing that individuals consciously make the choice to purchase the services. Related to this, healthcare quality and patient satisfaction are two important health outcomes. The delivering better service quality leads to gaining highly profitability and customer satisfaction.

Therefore, many hospitals are looking for ways to transform the delivery of patient care through TQM. The satisfaction of all stakeholders as well as the staff has to fulfilled continuously by assessing, monitoring and improving performance (Sun & Kim, 2013; Cai, 2009; Gorji & Farooquie, 2011). Some scholars find that customer focus in TQM increases customer satisfaction (Lee & Lee, 2013; Liu, Luo, & Shi, 2002) and improve organizational performance (Irani, Beskese, &

Love, 2004; Powell, 1995) such as operational performance, inventory management performance, employee performance, innovation performance, customer satisfaction, sales, and aggregate firm performance. This study aimed to investigate the relationship between customer focus in TQM and hospital performance.

2.3.5.4 Technology

The information technology (IT) system is an accessible and reliable backup system. The role of information and control systems put in hospital can offer for a better performance. There was a positive relationship between implementation of information technology and the effective use of the management accounting systems. Many researchers studied technology that supported organizational development and innovation. Innovation leads to new dimensions of organizational performance and it is important for all aspects of the operations and systems and work processes. But few studies were made to find out about the impact of innovation on hospital performance of hospitals. Therefore, researchers wanted to determine whether or not it is an important factor

2.3.5.5 Workforce

Workforce or employees are the most important asset for any company because they provide support to enhance its productivity and performance. (Elarabi & Fuadah, 2014). Human resource management is very important in healthcare organizations. The senior management in hospitals should have a clear strategic direction and clear objectives to improve the management of employees and staff in the hospital. Employees must be trained to upgrade their skills and abilities to improve their work. Delaney, Lewin, and Ichniowski (1989) found that human resource strategies positively impacted the performance of an organization's quality management system. Freeman, Kleiner, and Ostroff (1997) found that employees' training and participation in decision making and information sharing help maximize the efficiency of the organization. Schuler and MacMillan (1984) found that training and development increased employee loyalty and empowered to change in the process of continuous improvement that would ultimately enhance organizational performance. Lack of knowledge, covering topics of human resource management for the quality of health care could affect the strategic development of the healthcare sector of any country and improper education in this field might lead the weak

performance of the hospital. So this study would determine the relationship between workforce and hospital performance.

2.3.5.6 Work Process Management

Process management is a set of activities, methods and behaviors. It includes preventive and proactive approaches to quality management and product quality improvement. (Sadikoglu & Olcay, 2014; Reed, Lemak, & Montgomery, 1996; Ahire & Dreyfus, 2000.). The corporate healthcare management process delivered value to patients and other customers and to the success of the organization. Process management strives to have the best practice, being world-class in productivity and quality and continuously identifying opportunities for future improvement (De Waal, 2010). The organization can stimulate cross-functional and cross-organizational collaboration through encouragement of teamwork for the performance of the organization and by developing a team sharing through the creation of team commitment and establishing shared responsibility (De Waal, 2010). There are many studies about process management and performance of enterprises in the manufacturing sector but few in the field of healthcare. Therefore this research aimed to determine whether the work process or the work system was a critical factor of TQM that affected hospital performance.

2.3.5.7 Culture

Culture is a faith around the world that guides the actions and decisions in a variety of situations. The value of sharing information as a best practice is a tool for understanding and an approach to planning and organizational learning. Organizations with high-performance value and behavior focus on inspiring loyalty from employees who wants to stay and be part of a team.

Today work force is composed of people from different nationalities, cultures, religions, ages, educational levels, socioeconomic statuses and marital statuses. These people enter the work force with different backgrounds, values, goals, and perceptions of acceptable behaviors. They think about the consequences of work not only for themselves but also for their peers and social groups. Coping with ethical dilemmas requires interpersonal and negotiation skills as well as good application of work skills such as honesty, ability to work, cooperation, respect for others, pride in one’s work, willingness to learn, dependability, responsibility for one’s actions,

integrity and loyalty. Therefore, organizations and enterprises have developed labor-related vision and values in the interactive discussion and decision-making process. Parmelli et al. (2011) suggested effective of strategies in changing corporate culture to improve the performance of healthcare organizations and to meet the changing organizational culture that impact on workplace, personal outcomes and clinical outcomes.

There have been many studies about the relationship of culture and organizations performance. For example Scott, Mannion, Davies, and Marshall (2003) examined the relationship between corporate culture and hospital performance, Palmier, Peterson, Pesta, Flit, and Saettone (2010) studied the intersection of culture and health care safety by analyzing the theoretical underpinnings of safety culture and drawing a conclusion about safety culture from psychological, sociological, organizational perspectives and human factors. So the researcher would study culture as a critical factor of TQM that affected hospital performance.

2.3.5.8 Continuous Quality Improvement

Continuous quality improvement (CQI) is used interchangeably with TQM. It is used as a tool in clinical development because hospitals continue to do everything in power to meet this unique strategy and there is an opportunity for improvement in every step and every occasion. It simplifies and improves the consistency of the ongoing process to improve the ability to respond to incidents more effectively and efficiently and to eliminate unnecessary steps in work and information overload. In many hospitals, quality assurance (QA) programs generally focus on issues recognized by accreditation organizations, such as checking documentation, reviewing the work of oversight committees, and studying credentialing processes. CQI also measures and reports everything in an organization, so it's important to measure progress in compliance with the goals and confront the brutal facts. CQI reports these facts not only to management but also to everyone in the organization so that all organizational members have the financial and non financial information needed to drive improvement at their disposal. People in the organization feel a moral obligation to continuously strive for the best results. The organization continuously innovate products, processes and services, constantly creating new sources of competitive advantage by rapidly developing new products and services to respond to

market changes. The researcher wanted to know the continuous quality improvement of TQM was an important factor affecting the performance of the hospital.

2.3.5.9 Knowledge Management

Effective knowledge management ensures that employees obtain reliable, consistent, accurate, and necessary data and information as they need them to do their job effectively and efficiently in the firm. KM in organizations can result in enhancing value to customers through new and improved products and customer services, in developing new business opportunities, in developing new and improved processes or business models, in reducing errors, defects, waste, and related costs, in improving responsiveness and cycle time performance in increasing productivity and effectiveness in the use of all your resources and in enhancing your organization's performance in fulfilling its societal responsibilities.

Previous studies found that KM affected inventory management innovation, social responsibility, customer competitive advantage, results of operations, financial condition and results of operations of the company. Stefanelli (2004) conducted a survey of knowledge management in medical care that could lead organization to high performance. Lifvergren (2012) found that knowledge could lead to a major change and development. Researchers wanted to know KM is an critical success factor affecting hospital performance.

2.3.5.10 Communication

Today organizational communication has become not only far more complex and varied but also an important factor for the performance of the overall organization or for the organization's success. Organization communication plays an important role in building employee motivation and performance as real change takes place in the modern enterprise faced with the new reality of a more stringent workloads, longer hours and increased emphasis on performance and flexibility (Rajhans, 2012). A manager should indemnify that each employee is aware of the standards and expectations for the employee's position, as well as the work standards and practices that apply to employees in that department. A continuous flow of open communication between managers and employees is essential to a healthy workplace. As soon as managers become aware of a problem, they should bring it to the employees' attention so that it can be resolved at the earliest possible opportunity. Communication gives

the employee the guidance and direction to make a positive change and correct the situation, and helps to prevent future performance and disciplinary problems. If people feel that the communication from management to be effective, they will have a feeling of job satisfaction and will increase trust in the workplace.

Ongoing open communication between managers and employees is essential for healthcare organizations. Regular communication of information on quality improvement and the patient safety program to the staff is also essential. Powerful communication channels are, for example, newsletters, storyboards, staff meetings, and human resources processes. The information can be about new or recently completed improvement projects, progress in meeting the International Patient Safety Goals, the results of the analysis of sentinel and other adverse events, or recent research or benchmark programs, among others.

Based on the literature review the researcher want to know if communication was a critical factor of TQM that affected performance in Thai healthcare organization.

2.4 TQM and Organization Performance

There has been a lot of research work that examined the relationship between TQM and organizational performance. The role of TQM is clear in organizational performance to encourage business practices that will satisfy customers, quality of output, productivity and reduce costs. In addition, several studies have showed that TQM is associated positively with performance outcomes, financial performance, profitability, human outcomes, employee and customer satisfaction, and employee relations (Samson, & Terziovski, 1999; Prajogo, 2003).

There have been contain a considerable number of studies that measure business performance of both the manufacturing and the service sector through total quality management criteria (Samson & Terziovski, 1999; Flynn, Schroeder, & Sakakibara, 1995; Wilson & Collier, 2000; Fynes & Voss, 2001; Flynn & Saladin, 2001; Montes, Jover, & Fernandez, 2003; Benson, Saraph, & Schroeder, 1991; Stein, 1998; Choi & Eboch, 1989). The quality management practices or critical success

factors are drawn from CQI, TQM, Six Sigma, and the MBNQA approaches and adapted recently to healthcare.

Most studies have confirmed that TQM adoption will finally add value to the organizations. For example, Ittner and Larcker (1996) provided evidence to show the effective TQM implementations should improve long-term profitability and stock returns. Schmenner (1988) confirmed that TQM could lead to time reduction, improved quality and inventory reduction all productivity. Kim and Miller (1992) based on a survey of the manufacturing strategies of 111 firms in the U. S. A. and showed that activities associated with TQM (such as performance quality, product reliability, on-time delivery) together with price were the most important capabilities for manufacturing firms in the 1990s. Miyagawa and Yoshida (2010) made a conclusion that the implementation of TQM factors including leadership, quality of information, implementation of the strategies, human resource management & meeting expectation of the customers has a significant effect on the performance. Asikhia (2010) showed the importance of the customer direction that provides the firm a better understanding of the market and the needs of the customer and concluded that performance of the firm depends on how well they see their customers. Valmohammadi (2011) study on the manufacturing sector concluded that the TQM factors such as customer focus, leadership, and process management affect on the organization performance. Fotopoulos and Psomas's (2010) concluded that TQM elements like customer focus and satisfaction and employee involvement positively and significantly relate to the performance of the firm. Tan et al. (1998) examined that the use of TQM practices and management commitment positively affect performance. Woon (2000) TQM implementation relating to the productivity leadership, process management, customer focus have a positive effect to organizational performance. Khan' (2011) recent study showed that performance could be predicted by the TQM elements, and these elements improve the performance of the firm. Salaheldin (2009) showed that TQM strategic tactical and operational factors have a positive impact on organization performance but also to the financial performance of the firm. Abdullah, Tari, and Akhtar (2010) found that overall performance of the firm was significantly affected by the soft factor of TQM like management commitment, customer focus, people management and relationship with the employees. All the

above studies show the positive relationship between TQM and the organizational performance.

Results of organization after TOM implementation are measured in non-financial and financial outcomes in table 2.6

Table 2.8 Organization Performance and Researchers

Organization Performance	Researchers
Financial performance	Ittner et al. (1996), Salaheldin (2008), Kaplan (1996)
Quality performance	Schmenner (1988)
Time reduction	Schmenner (1988)
Product reliability	Kim and Miller (1992)
On time delivery	Kim and Miller (1992)
Price	Kim and Miller (1992)
Customer satisfaction	Hall (1990), Miyagawa and Yoshida (2010), Asikhia (2010), Fotopoulos and Psomas (2010)
Work force commitment	Tan (2001)

2.5 Reviews Conceptual Framework

The literature reviews has been carried out to select a suitable TQM frameworks for this study. Researches about TQM have identified many critical factors that affect organization performance .Most of the recent articles on CSFs utilized some factors from Flynn et al. (1995) and Powell (1995). The researcher selected from lectures quality awards. Ten selected critical factors of TQM for the development of the framework for the Thai public hospitals were namely: leadership, strategic planning, customer focus, process management, workforce focus, technology, knowledge management, continuous improvement, culture, and communication. And HA scoring, HA level (Thailand) were used as the measurement of organizational performance.

Table 2.9 Relationship between Dependent and Independent Variable

Researcher	Dependence variable	Mediating variable	Independence variable	Figure in Appendix C
Prajogo and Sohal (2003)	Leader, customer, information, people, process		Quality performance Innovation performance	Figure 1
Lin et al. (2005)	Leadership, training, design, supplier, process, data, employee, customer, benchmark	Supplier participation, Supplier selection	Business results, Customer satisfaction	Figure 2
Arumugam et al. (2008)	Leader, process management, information analysis, customer focus, supplier relationship, quality system improvement, people involvement		Quality performance	Figure 3
Zakuan et al. (2010)	Leadership, Customer focus, Information analysis, HRD, Process management,		Business results, Satisfaction level	Figure 4
Raju and Lonial (2002)	Role of top management, Process management, Data reporting, employee relation		Financial performance , Non financial performance	Figure 5
Sila (2007)	Leadership, Strategy planning, Customer focus, Information and analysis, HRM, Process management, Supplier management		HR result, Customer result, Organization effectiveness, Financial and market result	Figure 6

Table 2.9 (Continued)

Researcher	Dependence variable	Mediating variable	Independence variable	Figure in Appendix C
Hassan et al. (2012)	Commitment to quality, Employee involvement, Customer focus , Fact based management , Process management and control , Incentive & Recognition system , Continuos improvement orientation		Quality performance, Business performance, Organization performance	Figure 7
Sadikoglu and Olcay (2014)	Overall TQM Practices, leadership, Knowledge and process management, Training, Supplier quality management, Customer focus Strategic quality planning		Firm performance, Operational Performance, Inventory Management Performance, Employee Performance, Innovation Performance, Social responsibility, Customer results, Market and financial performance	Figure 8

Table 2.9 (Continued)

Researcher	Dependence variable	Mediating variable	Independence variable	Figure in Appendix C
Hassan et al. (2012)	leadership, people management, process management, customer focus, information & analysis and strategic planning		customer satisfaction, employee morale, productivity, quality of output and delivery performance	Figure 9
Kamyar (2014)	TQM practices Management leadership Employee involvement Employee empowerment Information & analysis Training & education Customer focus Continuous empowerment		innovation and customer satisfaction	Figure 10

2.6 The Conceptual Model in this Research

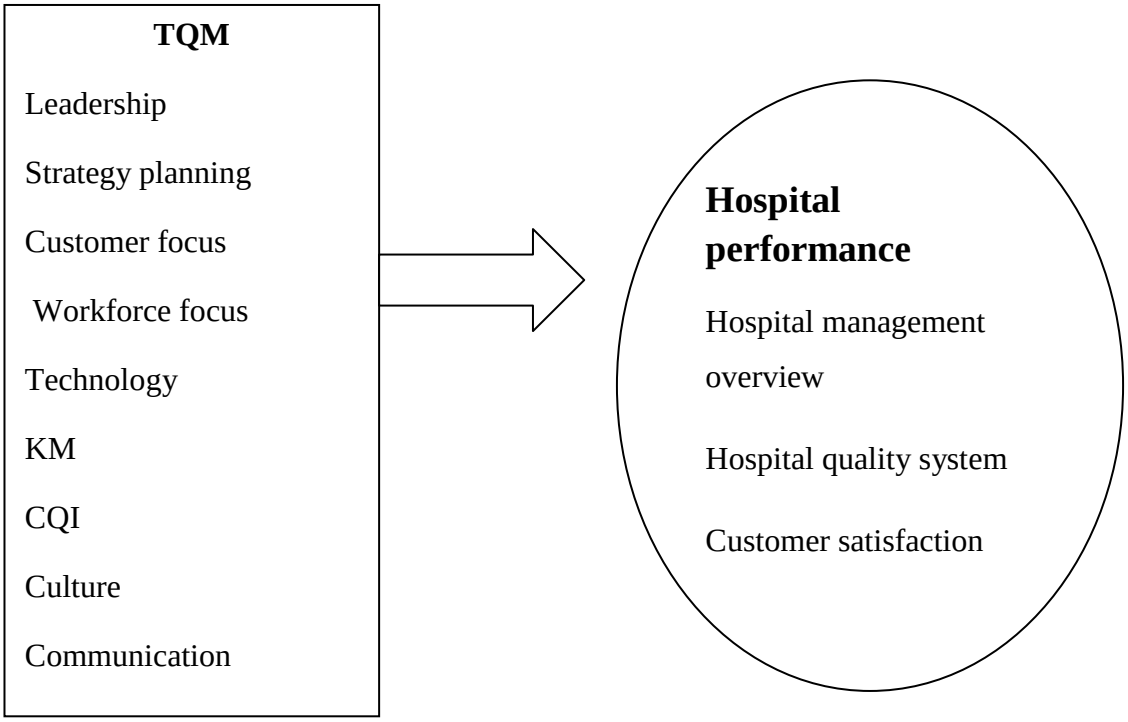

Figure 2.1 Conceptual Model in this Research

2.7 Hypothesis

H1: TQM has a positive effect on hospital performance in Thai public hospitals.

H2: TQM has a positive effect on hospital performance in large-sized hospitals.

H3: TQM has a positive effect on hospital performance in medium-sized hospitals.

H4: TQM has a positive effect on hospital performance in small-sized hospitals.

H5: Leadership has a positive effect on hospital performance.

H6: Strategy planning has a positive effect on hospital performance.

H7: Customer focus has a positive effect on hospital performance.

H8: Workforce focus has a positive effect on hospital performance.

H9: Technology has a positive effect on hospital performance.

H10: Work process has a positive effect on hospital performance.

H11: Knowledge management has a positive effect on hospital performance.

H12: Continuous quality improvement has a positive effect on hospital performance.

H13: Culture has a positive effect on hospital performance.

H14: Communication has a positive effect on hospital performance.

H15: Leadership has a positive effect on hospital management overview.

H16: Strategy planning has a positive effect on hospital management overview.

H17: Customer focus has a positive effect on hospital management overview.

H18: Workforce focus has a positive effect on hospital management overview.

H19: Technology has a positive effect on hospital management overview.

H20: Work process has a positive effect on hospital management overview.

H21: Knowledge management has a positive effect on hospital management overview.

H22: Continuous quality improvement has a positive effect on hospital management overview.

H23: Culture has a positive effect on hospital management overview.

H24: Communication has a positive effect on hospital management overview.

H25: Leadership has a positive effect on hospital quality system.

H26: Strategy planning has a positive effect on hospital quality system.

H27: Customer focus has a positive effect on hospital quality system.

H28: Workforce focus has a positive effect on hospital quality system.

H29: Technology has a positive effect on hospital quality system.

H30: Work process has a positive effect on hospital quality system.

H31: Knowledge management has a positive effect on hospital quality system.

H32: Continuous quality improvement has a positive effect on hospital quality system.

H33: Culture has a positive effect on hospital quality system.

H34: Communication has a positive effect on hospital quality system.

H35: Leadership has a positive effect on customer satisfaction.

H36: Strategy planning has a positive effect on customer satisfaction.

H37: Customer focus has a positive effect on customer satisfaction.

H38: Workforce focus has a positive effect on customer satisfaction.

H39: Technology has a positive effect on customer satisfaction.

H40: Work process has a positive effect on customer satisfaction.

H41: Knowledge management has a positive effect on customer satisfaction.

H42: Continuous quality improvement has a positive effect on customer satisfaction.

H43: Culture has a positive effect on customer satisfaction.

H44: Communication has a positive effect on customer satisfaction.

2.8 Summary

This chapter reviews the literature on organization theory, performance measurement, total quality management, and critical success factors in order to developing the conceptual framework and hypothesis for testing.

CHAPTER 3

RESEARCH METHODOLOGY

This chapter describes how to conduct the research. The first part introduces the research design, unit of analysis, operational definitions, research instruments, and method of data collection. And the last section concerns the data analysis.

3.1 Research Design

The research was based on quantitative techniques that are commonly used to describe, analyze, and predict the phenomenon of interest, using numerical data from a large sample presented in the form of tables, charts and graphs. The method is best used for measuring the event or phenomenon of research hypotheses. This method adopts the positivism or positivist paradigm, which states that social research, should adopt a scientific approach that includes stringent testing of hypotheses. In this study, the quantitative method was used to describe critical factors related to high performance in Thai public hospitals. The data were collected at one time. The data analysis include data collected in the survey to answer research questions, or statistical hypothesis testing.

The TQM framework in this study was developed based on literature review to identify critical success factors which affected organizational performance. A series of factors proposed in the literature were rarely checked empirically. The implementation of total quality management has existed in different countries (Crosby, Deming, Irfan, Juran, and Ishikawa). Widely known quality awards in the world are Malcolm Baldrige National Quality Award (MBNQA), European Foundation Quality Award (EFQM) Award and Deming Prize.

Ten critical success factors have been selected for the development of the framework of the study of public hospitals in Thailand. The statistical analysis was made by using the SPSS program. The variables were entirely measured by the

questionnaire survey. The questionnaire was composed of: 1) Demographic data of the respondents 2) Questions on the factors related to high performance and 3) Questions on performance of the organization.

3.2 The Unit of Analysis

This study aimed to find out the relationship between TQM and performance of healthcare organizations. The researcher selected Thai public hospitals under the Ministry of Public Health in Thailand as the population. The unit of analysis was hospital whose size depends on the number of patient beds. Therefore, the unit of analysis was at the organization level. The questionnaire concerned the success factors for TQM implementation in hospitals accredited by HAI and their organization performance. The data were collected by a mail survey from December 2015 to January 2016. The sizes of hospitals grouped by number of beds are shown in Table 3.1. The total number of hospitals was 830.

Table 3.1 The Population of the Study (830 Hospitals)

Size of Hospitals	**Number of Hospitals**
200 beds up (Central hospital)	25
100 beds up	112
60 beds up	180
30 beds up	429
10 beds up	84

3.3 Operational Definition

Table 3.2 Definition and Measurement of Dependent Variables

Variables	**Definition**	**Measurement**
Hospital performance	Outputs and outcomes of hospitals obtained from processes, health care services, and patients and stakeholders that permit the organization to evaluate and compare its results relative to performance projections, standards, past results, goals, and the results of other organizations. This study used the results of hospital accreditation from HAI Thailand (HA level)	Hospital management overview, Hospital quality system, Customer satisfaction
Hospital management overview	Refers to organization management in administrative section. Such as administration, finance management, human resource department .It is relative to effectiveness, efficiency, and accountability measures. This study used the results of hospital accreditation from HAI Thailand (HA level) in part 1.	Cycle time, productivity, waste reduction, workforce turnover, workforce cross-training rates, accreditation results, regulatory compliance, fiscal accountability, strategy accomplishment, community involvement, and contributions to community health.

Table 3.2 (Continued)

Variables	Definition	Measurement
Hospital quality system	Refers to results from all treatment system. This study use the results of hospital accreditation from HAI Thailand (HA level) in part2	Risk, Safety, & Quality Professional Governance Environment of Care Infection Control Medical Record System Medication Management Diagnostic Investigation Disease & Hazard Surveillance Working with Community
Customer satisfaction	Refers to performance relative to measures and indicators of patients' and stakeholders' perceptions, reactions, and behaviors. Examples include patient loyalty, complaints, and survey results.	Access & Entry Patient Assessment Planning Patient Care Delivery Education & Empowerment Continuity of Care

3.4 Measurement

This study examined 10 factors for quality management and organization performance in Thai public hospitals. Measurement for each factor was identified by earlier studies (in Appendix C). Ten scores levels were used to measure the level of agreement to each questions related to each factor. The 10 factors for TQM that affected the performance were namely leadership, strategic planning, customer focus, workforce focus, technology, process management, KM, culture, CQI and

communication. The performance dimensions consisted of hospital management overview, hospital quality system, customer satisfaction and hospital performance (HA level) which were measured and accredited by HAI. The questionnaire contained 3 sections 1) Demographic data of the respondents, 2) Questions on the factors related to high performance, and 3) Questions on performance of the organization.

3.4.1 Validity

Validity refers to the extent to which a concept truly measures what it is intended to measure. It indicates the correctness and the truthfulness of the research results. In terms of accuracy, it means that measure covers the range of meanings within a concept. It is a general form of validity evaluation (Babbie, 2001).

To establish content validity, the items for each variable are reviewed and discussed by researchers and practitioners (Babbie, 2001). Before real usage, this research study also employed another technique to ensure the research validity by pretesting of the questionnaires. Construct validity of measurement can be considered as validity measurements.

The independent variables in this study were chosen based on the literature review. Factor analysis was a statistical technique used to determine the weight of each variable. It helped not only to reduce the number of variables in the analysis, making the interpretation more meaningful and useful but also to confirm the measurements. In this study 10 factors of TQM were analyzed by the SPSS program. The value closer to 1 indicated that the variable that is associated with the construct. The results of the Factor Loading in this study were shown in Table 3.2

Table 3.3 Validity Test on Factor Loading

Construct/ Label Item	Mean	S.D.	Factor Loading	L^2_i	Cronbach's Alpha
Leadership	7.94	1.40			0.947
led1	8.22	1.527	.865	0.75	
led2	8.03	1.507	.899	0.81	

Table 3.3 (Continued)

Construct/ Label Item	Mean	S.D.	Factor Loading	L^2_i	Cronbach's Alpha
led3	8.00	1.510	.928	0.86	
led4	7.64	1.736	.805	0.65	
led5	8.00	1.597	.899	0.81	
led6	7.77	1.601	.815	0.66	
Strategy planning	7.61	1.38			0.948
plan1	7.78	1.424	.864	0.75	
plan2	7.86	1.519	.837	0.70	
plan3	7.77	1.452	.862	0.74	
plan4	7.30	1.624	.927	0.86	
plan5	7.37	1.573	.933	0.87	
Customer focus	7.79	1.23			0.911
cus1	7.85	1.417	.853	0.73	
cus2	8.15	1.304	.805	0.65	
cus3	7.91	1.365	.879	0.77	
cus4	7.78	1.249	.792	0.63	
cus5	7.29	1.797	.754	0.57	
Workforce focus	7.73	1.32			0.943
emp1	7.73	1.447	0.91	0.83	
emp2	7.40	1.628	.803	0.64	
emp3	7.71	1.477	.839	0.70	
emp4	7.90	1.530	.900	0.81	
emp5	8.17	1.436	.844	0.71	
emp6	7.53	1.524	.807	0.65	
Technology	7.82	1.37			0.960
it1	7.82	1.422	.891	0.79	

Table 3.3 (Continued)

Construct/ Label Item	Mean	S.D.	Factor Loading	L^2_i	Cronbach's Alpha
it2	7.87	1.426	.847	0.72	
it3	7.74	1.429	.914	0.84	
it4	7.79	1.554	.962	0.93	
it5	7.88	1.582	.930	0.86	
Work process	7.64	1.39			0.930
proc1	7.46	1.595	.831	0.69	
proc2	7.62	1.507	.924	0.85	
proc3	7.69	1.552	.905	0.82	
proc4	7.81	1.460	.853	0.73	
Knowledge management	7.71	1.36			0.950
km1	7.75	1.341	.919	0.84	
km2	7.80	1.427	.970	0.94	
km3	7.61	1.514	.904	0.82	
CQI	7.54	1.46			0.953
dev1	7.74	1.468	.869	0.76	
dev2	7.44	1.566	.971	0.94	
dev3	7.46	1.550	.960	0.92	
Culture strength	7.78	1.32			0.959
cult1	8.22	1.522	.852	0.73	
cult2	8.12	1.489	.826	0.68	
cult3	7.50	1.446	.910	0.83	
cult4	7.89	1.522	.878	0.77	
cult5	7.34	1.573	.859	0.74	
cult6	7.54	1.473	.923	0.85	
cult7	7.56	1.499	.886	0.78	

Table 3.3 (Continued)

Construct/ Label Item	Mean	S.D.	Factor Loading	L^2_i	Cronbach's Alpha
cult8	8.15	1.486	.781	0.61	
Communication	7.76	1.53			0.966
comm1	7.91	1.581	.917	0.84	
comm2	7.69	1.611	.949	0.90	
comm3	7.81	1.633	.950	0.90	
comm4	7.63	1.617	.930	0.86	

Table 3.2 showed the mean, S.D., and the Factor Loading ranging from 0.75 to 0.95, which is closer 1. This meant that each item was highly correlated with the construct. Considering that the L^2_i which is determined on the basis of indicators that could explain the variability of the construct much. And this study L^2_i was more than 0.5 which showed the validity of this construct.

3.4.2 Reliability

Reliability is a matter of whether a particular technique applied repeatedly to the same object. It provides the same result each time, whereas validity refers to the extent to which an empirical measure adequately reflects the real meaning of the concept under consideration (Babbie, 2001).

As for reliability, internal consistency is considered a form of assessment of the credibility of the instrument. The Cronbach alpha is the indicator of this testing approach. It measures the internal consistency of a single factor by the level of correlation between the indicator variables that describe the factor (Babbie, 2001). The results of the testing were shown in Table 3.3

Table 3.4 Reliability Testing and Cronbach's Alpha

Variable	No. of Items	Cronbach's Alpha
Leadership	6	0.947
Strategy planning	5	0.948
Customer focus	5	0.911
Workforce focus	6	0.943
Technology	5	0.960
Work design, systems, process	4	0.930
Knowledge management	3	0.950
Continuous improvement	3	0.953
Culture strength	8	0.959
Communication	3	0.966

Table 3.3 shows the reliability of variables (Cronbach's alpha), which is to say that the query tool was a reliable measure of parameters. The higher the value, the more reliable the tools are to measure the variables. This table shows that the Cronbach's alpha of each factor of TQM (from 0.91 to 0.97), was very high; therefore, the variables were reliable.

3.5 Data Collection

The mail survey is low in cost, geographically flexible, and able to reach a large diverse audience. A letter, along with a questionnaire, and a return envelope, was sent to the director of hospital medicine/chief of hospital quality improvement in 830 Thai public hospitals under the Ministry of Public Health in Thailand. The questionnaire was written in both English and Thai. The duration for reply and returned was one month. All the non-respondents were called to remind them to return the questionnaire after one month. The totals of 452 copies of the questionnaire, or 54.5 percent, were returned.

Table 3.5 Mail Survey Results by Sized Hospitals

Size of hospital	No. of mailed	No. of replies	Replies percentage in each size	Replies percentage in total
200 beds up	25	16	64	3.5
100 beds up	112	74	66	16.4
60 beds up	180	140	77	31.0
30 beds up	429	204	47	45.1
10 beds	84	18	21	4.0
Total	830	452		100

3.6 Methods of Data Analysis

The data analysis was accomplished with the SPSS Program for Windows. The demographic data of the respondents were presented by mean, standard deviation, frequency and percentage. Confirmatory factory analysis was used to test the validity of the constructs. The Pearson correlation analysis and regression analysis were used to analyze the association among the variables to test the hypotheses.

3.7 Data Analysis Procedures

The data analysis is presented in parts as follows:

Part 1: The characteristics of respondents are presented by number and percentage

Part 2: ANOVA was used to compare hospitals of different sizes and their performance.

Part 3: Confirmatory factor analysis for testing the validity of the variables.

Part 4: Cronbach's alpha test for reliability testing.

Part 5: Correlation analysis for testing the relationship between variables

Part 6: Regression analysis for testing hypotheses

3.8 Summary

Research based on quantitative techniques. The unit of analysis is 830 Thai public hospitals. This research studies 10 factors and performance from CEO or top management's perceptions of Thai public hospitals by questionnaire survey. The SPSS program analyzed the data by using descriptive analysis, confirmatory factory test, ANOVA test, Cronbach's alpha test, Correlation analysis, and Regression analysis.

CHAPTER 4

RESEARCH RESULTS

This chapter shows the results of the hypothesis testing. The first section describes the characteristics of the respondents and organizations. The second section describes the measurement of hospital performance. The third section presents the descriptive statistics of all research variables. The next section presents the statistical assumption testing and the results of the hypothesis testing. The last section summarizes the results.

4.1 Characteristics of the Respondents

Table 4.1 The Demographic Characteristics of the Respondents

Classified by	200 beds	100 beds	60 beds	30 beds	10 beds	Number	Percent
Gender							
Male	12	34	64	102	4	216	47.8
Female	4	40	76	102	14	236	52.2
Age							
20-29	0	2	6	24	2	34	7.52
30-39	0	4	16	54	2	76	16.81
40-49	8	34	54	76	4	176	38.94
50-59	8	34	64	50	10	166	36.73
Education Background							
Certification	0	4	6	2	0	12	2.6
Bachelor degree	8	26	64	122	10	230	50.9
Master degree	4	40	70	76	6	196	43.4

Table 4.1 (Continued)

Classified by	200 beds	100 beds	60 beds	30 beds	10 beds	Number	Percent
Doctoral degree	4	4	0	4	2	14	3.1
No. of service years in the organization							
<1year	0	0	2	6	4	12	2.7
1-5years	0	8	16	62	0	86	19.0
6-10years	2	4	12	32	0	50	11.1
11-15years	2	4	32	32	2	72	15.9
16-20years	6	22	20	22	2	72	15.9
21years up	6	36	58	50	10	160	35.4
Position in organization							
Director of hospital	2	12	50	110	4	178	39.4
Chief of hospital quality improvement	8	30	36	24	0	98	21.7
Head staff	6	24	46	60	12	148	32.7
Other	0	8	8	10	2	28	6.2
Years in the current position							
<1 year	0	2	6	22	4	34	7.5
1-5years	10	26	34	84	0	154	34.1
6-10years	4	12	28	30	2	76	16.8
11-15years	2	26	32	32	2	94	20.8
16-20years	0	6	14	20	8	48	10.6
21 years up	0	2	26	16	2	46	10.2

Table 4.1 shows that 48.2 percent of the respondents were male and 51.2 percent were female. That is more women worked in a leadership position than men.

When the respondents were divided into four-age groups, it was found that and the leaders in hospitals of all sizes were 40 years old or more. They earned at least a Bachelor's degree and those in large sized hospitals had a higher education in than those in small sized hospitals. Most of the respondents had more than 21 service years. This implied that the respondents in the leading position had a lot of experience. About 39.4 percent of the respondents were hospital directors. This suggested the person who knew the quality of the organization well was the director of the hospital. In large-sized hospitals, chief of the hospital quality improvement sector was an important person who knew quality management in the hospital, whereas in small-sized hospitals the director was. The system, process, and workforce in small-sized hospitals were simple and there was no the quality department, but large-sized hospitals needed to set up the department for controlling hospital quality. Most of the respondents (34.1%) worked in their current position for 1-5 years.

4.2 The Measurement of Hospital Performance

The hospital performance has been showed in this part. Findings in this section were summarized in the form of tables. The number, percentage, mean, and standard deviation were used to describe the data.

Table 4.2 The Number and the Percentage of Mail Questionnaires

Hospital size	Number of the mail questionnaires	Number of the returned questionnaires	Percentage of the returned questionnaires
200 beds up	25	16	64
100 beds up	112	74	66
60 beds up	180	140	77
30 beds up	429	204	47
10 beds	84	18	21
Total	830	452	54.46

In Table 4.2, most respondents were in the group of 30-beds-up hospitals. The percentage returned questionnaires were 54.46 %. Most feedback came from the group of 60-beds-up.

Table 4.3 The Number and Percentage of the Respondents Classified by Quality Evaluation

Quality evaluation	200 beds	100 beds	60 beds	30 beds	10 beds	Number	Percent (%)
Yes	16	74	140	204	18	452	100
No	0	0	0	0	0	0	0
Total						452	100

Table 4.3 shows that 100 percent of Thai public hospitals have internal and external auditing. They have developed quality services, in line with the government policy that healthcare organizations must have good performance and meet the established standard.

Table 4.4 The Number and Percentage of the Respondents Classified by Quality Award

Type of quality evaluation	200 beds	100 beds	60 beds	30 beds	10 beds	Number	Percent
HA	4	10	16	46	2	78	17.3
HPH	0	0	2	4	0	6	1.3
HA&HPH	8	38	98	130	10	284	62.8
HA&HPH&ISO	4	22	28	24	6	84	18.6
PMQA	0	0	0	0	0	0	0
TQA	0	0	0	0	0	0	0
ISO	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
Total	16	70	144	204	18	452	100

Table 4.4 shows that Thai public hospitals are standardized hospitals. Almost all get both HA and HPH.

Table 4.5 The Number and Percentage of the Respondents Classified by the History of Accreditation by HAI

Accredited by HAI	200 beds	100 beds	60 beds	30 beds	10 beds	Number	Percent
Yes	16	70	132	198	19	435	96.24
No	0	0	6	6	5	17	3.76
Total	16	70	138	204	24	452	100

Table 4.5 shows that 435 hospitals (96.24%) have been evaluated by HAI. Only 17 hospitals (3.76%) have not been evaluated by HAI. It means that Thai public hospitals use the quality excellence model and the quality award to improve hospital performance.

Table 4.6 The Number and Percentage of the Respondents Classified by Frequency of Getting HA

Number of years	200 beds	100 beds	60 beds	30 beds	10 beds	Number	Percent
No	0	0	6	8	2	16	3.54
0-2	2	20	38	86	4	150	33.19
3-5	4	18	26	50	6	114	25.22
6-8	2	10	36	38	2	88	19.47
9-11	8	16	20	14	2	60	13.27
11 ups	0	6	10	6	2	24	5.3
Total	16	70	138	204	18	452	100

Table 4.6 shows that Thai public hospitals have used the quality excellence model and frequency of getting the quality award for hospital performance improvement.

Table 4.7 The Number and Percentage of the Respondents Classified by the Level of HA

Level	**200beds**	**100beds**	**60beds**	**30beds**	**10beds**	**Number**	**Percent**
No passed	0	0	0	4	2	6	1.3
	0	0	0	2%	11.1%		
1	0	0	0	0	0	0	0
	0	0	0	0	0		
1 Expired	0	0	2	4	0	6	1.3
	0	0	1.4%	2%	0		
2	2	2	26	56	6	92	20.4
	12.5%	2.7%	18.6%	27.5%	33.3%		
2 Expired	0	4	2	2	0	8	1.8
	0	5.4%	1.4%	1%	0		
3	8	56	106	126	10	306	67.7
	50%	75.7%	75.7%	61.8%	55.6%		
3 Expired	6	12	4	12	0	34	7.5
	37.5%	16.2%	2.9%	5.9%	0		
Total	16	74	140	204	18	452	100
	100%	100%	100%	100%	100%		

Table 4.7 shows that most Thai public hospitals have tried to improve their quality service to achieve the high standard. When hospitals of the same size were compared, it was found that large-sized hospitals (200 and 100 beds up) had passed to level 3.The level 3 that are the best in terms of in performance. Large-sized hospitals

were found to have developed better quality services than small-sized hospitals because they have more resources, money, manpower, and materials.

Table 4.8 The Number and Percentage of the Respondents Classified by Frequency of Reaccreditation

Time	**200 beds**	**100 beds**	**60 beds**	**30 beds**	**10 beds**	**Number**	**Percent**
0	0	14	30	72	0	116	26.2
	0 %	20 %	21 7 %	52 2 %	0		
1	2	16	32	50	0	100	22.6
	12.5 %	22.9 %	23.2 %	36.2 %	0		
2	10	22	48	48	0	128	29.0
	62.5 %	31.4 %	34.8 %	22 %	0		
3	0	12	16	14	0	42	9.5
	0%	17.14%	11.59%	6.42%	0		
3 UP	4	6	12	32	2	56	12.7
	25%	8.57%	8.69%	14.67%	0		
Total	16	70	138	218	2	442	100
	100 %	100 %	100 %	100%	0		

Note: Ten Hospitals Gave no Answer.

Table 4.8 shows that the accreditations of most Thai public hospitals have been renewed and hospitals of all sizes have been reaccredited. It means that Thai public hospitals have made continuous quality improvement to maintain the standard. When hospitals of the same size were compared it was found that large-sized hospitals are reaccredited than small-sized hospitals. In short, large-sized hospitals have continuously made quality improvement.

Table 4.9 The Number of the Respondents Classified by the HA Score of Each Hospital

Size of Hospital	Score of HA				Total	Mean	S.D
	0-0.99	2-2.99	3-3.99	4-4.99			
200 beds up hospital	0	2	14	0	16	3.88	.354
100 beds up hospital	0	20	52	2	74	3.76	.495
60 beds up hospital	0	44	86	10	140	3.76	.576
30 beds up hospital	2	76	124	2	204	3.61	.566
10 beds up hospital	0	10	8	0	18	3.44	.527
Total	2	152	284	14	452	3.68	.554

Note: F-Statistics = 1.62, p-value = 0.170

Table 4.9 shows the score of 3-3.99 for all Thai public hospitals. There was no significant difference among hospital sizes (F-Statistics = 1.62, p-value = 0.170) .

Table 4.10 The Number and Percentage of the Respondents Classified by Scoring HA of Each Performance Dimension

Variable	Score						Mean	S.D.
	0-0.99	1-1.99	2-2.99	3-3.99	4-4.99	5		
Hospital performance	2	0	152	284	14	-	3.68	0.54
	0.4%	0.0%	33.6%	62.8%	3.1%	-		
Hospital management overview	2	4	148	268	30	-	3.71	0.62
	0.4%	0.9%	32.7%	59.3%	6.6%	-		
Customer satisfaction	2	2	148	270	30	-	3.72	0.61
	0.4%	0.4%	32.7%	59.7%	6.6%	-		
Hospital quality system	2	6	150	266	28	-	3.69	0.63
	0.4%	1.3%	33.2%	58.8%	6.2%	-		

In Table 4.10 shows that each performance dimensions had a score between 3-3.99. The mean score was 3.7, which indicated Thai public hospitals had a high score in every performance dimension.

Table 4.11 Mean Score of Hospital Performance Classified by Size of Hospitals

		Mean	S.D.	F-statistics	p-value
Hospital performance				1.621	.170
	200 beds	3.88	.354		
	100 beds	3.76	.495		
	60 beds	3.76	.576		
	30 beds	3.61	.566		
	10 beds	3.44	.527		
	Total	3.68	.554		

In Table 4.11shows no difference in the mean score and no statistical significance. It meant that the hospital performance of each hospital did not differ.

Table 4.12 Mean Score of Hospital Management Overview Classified by Size of Hospitals

		Mean	S.D.	F-statistics	p-value
Hospital management overview				1.254	.289
	200 beds	3.88	.354		
	100 beds	3.78	.534		
	60 beds	3.79	.635		
	30 beds	3.61	.632		
	10 beds	3.78	.833		
	Total	3.71	.621		

Table 4.12 shows no difference in the mean score and no statistical significance. It meant that the hospital management overview of each hospital did not differ.

Table 4.13 Mean Score of Customer Satisfaction Classified by Size of Hospitals

		Mean	**S.D.**	**F-statistics**	**p-value**
Customer satisfaction				.799	.527
	200 beds	3.50	.535		
	100 beds	3.73	.508		
	60 beds	3.80	.580		
	30 beds	3.69	.629		
	10 beds	3.56	1.014		
	Total	3.72	.611		

Table 4.13 shows no difference in the mean score and no statistical significance. It meant that the customer satisfaction of each hospital did not differ.

Table 4.14 Mean Score of Hospital Quality System Classified by Sized of Hospitals

		Mean	**S.D.**	**F-statistics**	**p-value**
Hospital quality system				1.573	.197
	200 beds	3.88	0.354		
	100 beds	3.81	0.569		
	60 beds	3.74	0.582		
	30 beds	3.60	0.678		
	Total	3.69	0.627		

Table 4.14 shows the mean score of hospital quality system of each hospital. The test results showed no difference in the mean score. There was no statistical significance, indicating that the hospital quality system of each hospital was not different.

4.3 The Descriptive Statistics of all the Variables

Table 4.15 The Number and Percentage of the Respondents in the Leadership Dimension

Variable	Agreement										Mean	S.D
	1	2	3	4	5	6	7	8	9	10		
Leadership											7.94	1.40
set clear directions	-	2	2	8	14	24	64	144	80	114	8.22	1.53
	-	0.4 %	0.4 %	1.8 %	3.1 %	5.3 %	14.2 %	31.9 %	17.7 %	25.2 %		
.Provide employees with a vision and sense of mission	-	2	2	4	24	30	74	142	90	84	8.03	1.51
	-	0.4 %	0.4 %	0.9 %	5.3 %	6.6 %	16.4 %	31.4 %	19.9 %	18.6 %		
Set achievable plans, milestones, and goals	-	2	4	2	16	44	80	134	86	84	8.00	1.51
	-	0.4 %	0.9 %	0.4 %	3.5 %	9.7 %	17.7 %	29.6 %	19.0 %	18.6 %		
Grow leaders from within	2	4	4	8	34	50	86	116	80	68	7.64	1.74
	0.4 %	0.9 %	0.9 %	1.8 %	7.5 %	11.1 %	19.0 %	25.7 %	17.7 %	15.0 %		
Stimulate change and improvement.	-	4	2	2	28	40	66	124	100	86	8.00	1.6
	-	0.9 %	0.4 %	0.4 %	6.2 %	8.8 %	14.6 %	27.4 %	22.1 %	19.0 %		
Assemble a diverse and complementary management team and workforce.	2	-	4	8	22	46	104	116	78	72	7.77	1.6
	0.4 %	-	0.9 %	1.8 %	4.9 %	10.2 %	23.0 %	25.7 %	17.3 %	15.9 %		

Table 4.15 presents the number and percentage of the respondents in leadership dimension. The mean score of leadership was 7.94, the highest mean (8.22) belonged to the dimension that the leader set a clear direction, followed by providing employees with a vision and sense of mission, setting achievable plans, milestones, and goals, growing to be leaders from within the organization, stimulating change and

improvement, assembling a diverse and complementary management team and workforce), respectively. The findings indicated that leadership was important in management.

Table 4.16 The Number and Percentage of the Respondents in Strategy Planning Dimension

Variable	**Agreement**										**Mean**	**S.D.**
	1	2	3	4	5	6	7	8	9	10		
Strategy planning											7.61	1.38
Aligns strategy, goals, and objectives with the demands of the external environment and adaptive plans to achieve these.	-	-	4	6	20	44	88	164	70	56	7.78	1.42
	-	-	0.9 %	1.3 %	4.4 %	9.7 %	19.5 %	36.3 %	15.5 %	12.4 %		
Has balance long-term focus and short-term focus.	-	2	4	6	16	50	80	142	84	68	7.86	1.52
	-	0.4 %	0.9 %	1.3 %	3.5 %	11.1 %	17.7 %	31.4 %	18.6 %	15.0 %		
Has measurable and achievable goals	-	-	6	6	18	42	102	144	80	54	7.77	1.45
	-	-	1.3 %	1.3 %	4.0 %	9.3 %	22.6 %	31.9 %	17.7 %	11.9 %		
Employees know about organization’s strategy	-	4	10	6	38	58	124	122	46	44	7.3	1.62
	-	0.9 %	2.2 %	1.3 %	8.4 %	12.8 %	27.4 %	27.0 %	10.2 %	9.7 %		
. Employees follow the strategic plan.	2	-	8	6	38	54	122	128	52	42	7.37	1.57
	0.4 %	-	1.8 %	1.3 %	8.4 %	11.9 %	27.0 %	28.3 %	11.5 %	9.3 %		

Table 4.16 presents the number and percentage of the respondents in the strategy planning dimension. The mean score of strategy planning was 7.61, the highest mean (7.86), having balance long-term focus and short-term focus, followed by aligning strategic, goals and objectives and adaptive plans to achieve, having measurable and achievable goals, employees knowing about organization's strategy, employees following the strategic plan, respectively. The finding showed the strategy planning was a factor affecting the success of organization.

Table 4.17 The Number and Percentage of the Respondents in Customer Focus Dimension

Variable	Agreement										Mean	S.D.
	1	2	3	4	5	6	7	8	9	10		
Customer focus											7.79	1.23
Aware of how satisfied internal customers are.	-	-	4	10	10	32	116	140	80	60	7.85	1.42
	-	-	0.9 %	2.2 %	2.2 %	7.1 %	25.7 %	31.0 %	17.7 %	13.3 %		
Aware of how satisfied our external customers are.	-	-	-	6	8	28	88	136	112	74	8.15	1.3
	-	-	-	1.3 %	1.8 %	6.2 %	19.5 %	30.1 %	24.8 %	16.4 %		
Develop special processes for our best customers.	-	-	6	2	16	28	100	152	96	52	7.91	1.37
	-	-	1.3 %	0.4 %	3.5 %	6.2 %	22.1 %	33.6 %	21.2 %	11.5 %		
Have flexible procedures and policies that act as guidelines in meeting customer needs.	-	-	-	6	16	38	104	174	76	38	7.78	1.25
	-	-	-	1.3 %	3.5 %	8.4 %	23.0 %	38.5 %	16.8 %	8.4 %		
Give rewards to employees who take risks to better serve customers.	4	-	16	10	46	46	94	128	66	42	7.29	1.8
	0.9 %	-	3.5 %	2.2 %	10.2 %	10.2 %	20.8 %	28.3 %	14.6 %	9.3 %		

Table 4.17 presents the number and percentage of the respondents in the customer focus dimension. The mean score of customer focus was 7.79, the highest mean (8.15), being aware of how satisfied our external customers, followed by developing special processes for our best customers, being aware of how satisfied internal customers, having flexible procedures and policies that act as guidelines in meeting customer needs, and giving rewards to employees who take risks to better serve customers, respectively. The finding showed the customer focus was a factor affecting the success of organization.

Table 4.18 The Number and Percentage of Respondents in Workforce Focus Dimension

Variable	Agreement										Mean	S.D.
	1	2	3	4	5	6	7	8	9	10		
Workforce focus											7.73	1.32
Has information and knowledge to do job.	-	2	6	6	16	42	94	160	84	42	7.73	1.45
	-	0.4 %	1.3 %	1.3 %	3.5 %	9.3%	20.8 %	35.4 %	18.6 %	9.3 %		
Promote the person who has the best skills	2	4	10	8	20	66	96	136	82	28	7.4	1.63
	0.4 %	0.9 %	2.2 %	1.8 %	4.4 %	14.6 %	21.2 %	30.1 %	18.1 %	6.2 %		
Empower employees to use their own judgment to meet customer needs.	-	2	8	2	26	36	88	166	82	42	7.71	1.48
	-	0.4 %	1.8 %	0.4 %	5.8 %	8.0%	19.5 %	36.7 %	18.1 %	9.3 %		
Concern about employees	-	4	6	4	14	42	70	150	104	58	7.9	1.53
	-	0.9 %	1.3 %	0.9 %	3.1 %	9.3%	15.5 %	33.2 %	23.0 %	12.8 %		
Focus on safety-conscious.	-	-	6	4	10	32	64	136	118	82	8.17	1.44
	-	-	1.3 %	0.9 %	2.2 %	7.1%	14.2 %	30.1 %	26.1 %	18.1 %		
Creates innovative approaches to increase employee effectiveness	-	-	10	12	24	34	128	128	80	36	7.53	1.52
	-	-	2.2 %	2.7 %	5.3 %	7.5%	28.3 %	28.3 %	17.7 %	8.0 %		

Table 4.18 presents the number and percentage of the respondents in the workforce focus dimension. The mean score of the workforce focus was 7.73, the highest mean (8.17), being focused on safety-conscious, followed by concerning about employees, having information and knowledge to do job, respectively. The findings showed that the workforce focus was another factor contributing to success of organization management.

Table 4.19 The Number and Percentage of the Respondents in the Technology/ Analysis

Variable	Agreement										Mean	S.D.
	1	2	3	4	5	6	7	8	9	10		
Technology/ analysis											7.82	1.37
Your organization-wide performance measures match the organization's strategy.	-	-	6	10	8	42	90	156	92	48	7.82	1.42
	-	-	1.3 %	2.2 %	1.8 %	9.3%	19.9 %	34.5 %	20.4 %	10.6 %		
Your organization use technology for management.	-	-									7.87	1.43
			4	12	2	46	96	152	76	64		
	-	-	0.9 %	2.7 %	0.4 %	10.2 %	21.2 %	33.6 %	16.8 %	14.2 %		
Develop performance measurement and evaluation	-	-	4	10	14	40	112	154	60	58	7.74	1.43
	-	-	0.9 %	2.2 %	3.1 %	8.8%	24.8 %	34.1 %	13.3 %	12.8 %		
Measure, analyze organization performance for improvement	-	4	4	10	18	32	94	146	86	58	7.79	1.55
	-	0.9 %	0.9 %	2.2 %	4.0 %	7.1%	20.8 %	32.3 %	19.0 %	12.8 %		
Manage by facts	-	4	6	4	26	24	84	142	96	66	7.88	1.58
	-	0.9 %	1.3 %	0.9 %	5.8 %	5.3%	18.6 %	31.4 %	21.2 %	14.6 %		

Table 4.19 presents the number and percentage of the respondents in the technology/analysis dimension. The mean score of technology/analysis was 7.82, the highest score (7.88), managing by facts. The findings showed that the technology/analysis was another factor contributing to success of organization management.

Table 4.20 The Number and Percentage of the Respondents in the Work Process Dimension

Variable	**Agreement**										**Mean**	**S.D.**
1	2	3		4	5	6	7	8	9	10		
Work design, systems, process											7.64	1.39
Has a clearly defined and well-followed process to resolve disagreements.	-	2	12	8	24	58	98	142	68	40	7.46	1.6
	-	0.4 %	2.7 %	1.8 %	5.3 %	12.8 %	21.7 %	31.4 %	15.0 %	8.8 %		
Internal processes are designed to enable us to work together as well as possible.	-	2	10	6	20	40	102	152	84	36	7.62	1.51
	-	0.4 %	2.2 %	1.3 %	4.4 %	8.8 %	22.6 %	33.6 %	18.6 %	8.0 %		
Has cross-functional and cross-organizational collaboration	-	-	8	10	24	46	84	136	98	46	7.69	1.55
	-	-	1.8 %	2.2 %	5.3 %	10.2 %	18.6 %	30.1 %	21.7 %	10.2 %		
Be simplify and flatten the organization	-	-	6	8	22	34	84	150	104	44	7.81	1.46
	-	-	1.3 %	1.8 %	4.9 %	7.5 %	18.6 %	33.2 %	23.0 %	9.7 %		

Table 4.20 presents the number and percentage of the respondents in the work process dimension. The mean score of work process dimension was 7.64, the highest score (7.81), being simplify and flatten the organization, followed by cross-functional and cross-organizational collaboration, having clearly defined and well-followed process to resolve disagreements, respectively. The findings showed that work process was another factor contributing to success of organization management

Table 4.21 The Number and Percentage of the Respondents in Knowledge Management Dimension

Variable	Agreement										Mean	S.D.
	1	2	3	4	5	6	7	8	9	10		
Knowledge management											7.71	1.36
Organization has the information and knowledge to do job.	-	-	4	6	18	30	114	166	70	44	7.75	1.34
	-	-	0.9 %	1.3 %	4.0 %	6.6 %	25.2 %	36.7 %	15.5 %	9.7 %		
. Learning and developing activities have helped to improve performance.	-	-	4	10	14	40	96	152	84	52	7.8	1.43
	-	-	0.9 %	2.2 %	3.1 %	8.8 %	21.2 %	33.6 %	18.6 %	11.5 %		
Foster organization-wide sharing of information, boundaries and barriers between and around units.	-	-	8	10	20	48	104	152	58	52	7.61	1.51
	-	-	1.8 %	2.2 %	4.4 %	10.6 %	23.0 %	33.6 %	12.8 %	11.5 %		

Table 4.21 presents the number and percentage of the respondents in the KM dimensions. The mean score of KM dimension was 7.71, the highest score of KM (7.8), learning and developing activities have helped to improve performance, followed by having the information and knowledge to do job, sharing of information, respectively. The findings showed that KM was another factor contributing to success of organization management

Table 4.22 The Number and Percentage of the Respondents in Continuous Quality Improvement Dimension

Variable	Agreement										Mean	S.D.
	1	2	3	4	5	6	7	8	9	10		
Continuous improvement											7.54	1.46
In the organization processes are continuously improved.	-	2	4	2	30	40	86	158	80	50	7.74	1.47
	-	0.4 %	0.9 %	0.4 %	6.6 %	8.8 %	19.0 %	35.0 %	17.7 %	11.1 %		

Table 4.22 (Continued)

Variable	Agreement										Mean	S.D.
	1	2	3	4	5	6	7	8	9	10		
The organization continuously innovates its core competencies	-	4	6	4	42	42	118	132	64	40	7.44	1.57
	-	0.9 %	1.3 %	0.9 %	9.3 %	9.3 %	26.1 %	29.2 %	14.2 %	8.8 %		
The organization continuously innovate its products, processes and services.	2	2	6	2	36	54	102	146	64	38	7.46	1.55
	0.4 %	0.4 %	1.3 %	0.4 %	8.0 %	11. 9%	22.6 %	32.3 %	14.2 %	8.4 %		

Table 4.22 presents the number and percentage of the respondents in the CQI dimensions. The mean score of CQI dimension was 7.54, the highest score (7.7) was organization processes are continuously improved, following by continuously innovating its products, processes and services and continuously innovating its core competencies. The findings showed that CQI was another factor contributing to success of organization management

Table 4.23 The Number and Percentage of the Respondents in the Culture Dimension

Variable	Agreement										Mean	S.D.
1		2	3	4	5	6	7	8	9	10		
Culture strength											7.78	1.32
Everyone working together cohesively is the most important value	-	2	2	8	14	28	64	116	120	98	8.22	1.52
	-	0.4 %	0.4 %	1.8 %	3.1 %	6.2 %	14.2 %	25.7 %	26.5 %	21.7 %		
Organizational culture is externally focused on our customers, markets, and competitors.	-	-	4	10	12	36	60	126	128	76	8.12	1.49
	-	-	0.9 %	2.2 %	2.7 %	8.0 %	13.3 %	27.9 %	28.3 %	16.8 %		
Organization emphasizes readiness to meet new challenges.	-	2	6	2	34	50	108	142	82	26	7.5	1.45

Table 4.23 (Continued)

Variable	Agreement										Mean	S.D.
1		2	3	4	5	6	7	8	9	10		
	-	0.4 %	1.3 %	0.4 %	7.5 %	11.1 %	23.9 %	31.4 %	18.1 %	5.8%		
Organization together is loyalty to the organization	-	2	8	2	12	52	76	134	104	62	7.89	1.52
	-	0.4 %	1.8 %	0.4 %	2.7 %	11.5 %	16.8 %	29.6 %	23.0 %	13.7 %		
Organization together is commitment to innovation	4	-	6	12	30	48	132	124	68	28	7.34	1.57
	0.9 %	-	1.3 %	2.7 %	6.6 %	10.6 %	29.2 %	27.4 %	15.0 %	6.2%		
There is good teamwork &cooperation in your organization	-	-	6	8	28	56	98	148	70	38	7.54	1.47
	-	-	1.3 %	1.8 %	6.2 %	12.4 %	21.7 %	32.7 %	15.5 %	8.4%		
Empower people and give them freedom to decide and act.	-	-	6	8	32	52	94	138	86	36	7.56	1.5
	-	-	1.3 %	1.8 %	7.1 %	11.5 %	20.8 %	30.5 %	19.0 %	8.0%		
Develop and maintain a performance-driven culture.	-	2	6	2	10	34	70	126	118	84	8.15	1.49
	-	0.4 %	1.3 %	0.4 %	2.2 %	7.5 %	15.5 %	27.9 %	26.1 %	18.6 %		

Table 4.23 presents the frequency and the percentage of the respondents in the culture dimensions. The mean score of culture dimension was 7.78, the highest score (8.22) was everyone working together cohesively, following by developing and maintaining a performance-driven culture, being focused on customers, markets, and competitors, respectively. The findings showed that culture was another factor contributing to success of organization management

Table 4.24 The Number and Percentage of the Respondents in the Communication Dimension

Variable	Agreement										Mean	S.D.
	1	2	3	4	5	6	7	8	9	10		
Communication											7.76	1.53
Communicated current values and beliefs to employee.	-	2	8	4	20	36	86	118	110	68	7.91	1.58
	-	0.4 %	1.8 %	0.9 %	4.4 %	8.0 %	19.0 %	26.1 %	24.3 %	15.0 %		
Communicates effectively and in a timely manner to employees.	-	2	6	12	28	32	96	142	72	62	7.69	1.61
	-	0.4 %	1.3 %	2.7 %	6.2 %	7.1 %	21.2 %	31.4 %	15.9 %	13.7 %		
There is a two way communication between employee and employer	2	2	2	10	26	42	74	132	96	66	7.81	1.63
	0.4 %	0.4 %	0.4 %	2.2 %	5.8 %	9.3 %	16.4 %	29.2 %	21.2 %	14.6 %		
There is a two way communication between organization and stakeholder.	2	2	4	8	36	36	88	148	76	52	7.63	1.62
	0.4 %	0.4 %	0.9 %	1.8 %	8.0 %	8.0 %	19.5 %	32.7 %	16.8 %	11.5 %		

Table 4.24 presents the frequency and the percentage of the respondents in the communication dimension. The mean score of communication dimension was 7.76. The highest score (7.91) belonged to communicating current values and beliefs to employee, followed by two way communication between the employee and the employer, communicating effectively and a timely to employees, respectively.

Table 4.25 Mean ($\overline{X}$) and Standard Deviation (S.D.) of TQM's Factors

Variable	Mean ($\bar{X}$)	Standard deviation (S.D.)
TQM		
Leadership	7.94	1.40
Strategy planning	7.61	1.38
Customer focus	7.79	1.23
Workforce focus	7.73	1.32
Technology	7.82	1.37
Work design, systems, process	7.64	1.39
Knowledge management	7.71	1.36
Continuous improvement	7.54	1.46
Culture strength	7.78	1.32
Communication	7.76	1.53
Organization Performance		
Hospital performance	3.68	0.55
Hospital management overview	3.71	0.62
Customer satisfaction	3.72	0.61
Hospital quality system	3.69	0.63

Table 4.25 shows that the mean scores of factors of TQM were between 7.5 and 8.0.Standard deviations (SD) ranged from 1.3 to 1.6. Leadership had the highest mean score. The mean score of the customer satisfaction was 3.72, hospital management overview was 3.71, hospital quality system was 3.69, and hospital performance was 3.68.

4.4 The Statistical Testing

Table 4.26 Correlation Coefficient for Thai Public Hospitals

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Hospital Performance	1													
2. Hospital management overview	.646**	1												
3. Customer satisfaction	.757**	.637**	1											
4.Hospital Quality system	.713**	.521**	.722**	1										
5. LED	.178**	.156*	.165*	.150*	1									
6. PLAN	.175**	.142*	.176**	.219**	.883**	1								
7. CUS	.176**	.161*	.153*	.166*	.814**	.835**	1							
8. EMP	.184**	.126	.185**	.192**	.848**	.871**	.879**	1						
9. IT	.186**	.140*	.192**	.201**	.820**	.848**	.801**	.833**	1					
10. PROC	.169*	.145*	.172**	.125	.852**	.823**	.780**	.848**	.821**	1				
11. KM	.171**	.139*	.174**	.156*	.831**	.845**	.807**	.856**	.829**	.829**	1			
12. CQI	.241**	.217**	.207**	.204**	.823**	.835**	.783**	.837**	.774**	.789**	.863**	1		
13. CULT	.209**	.187**	.206**	.173**	.840**	.841**	.845**	.881**	.818**	.841**	.885**	.880**	1	
14. COMM	.096	.087	.105	.103	.850**	.819**	.817**	.844**	.795**	.849**	.834**	.795**	.877**	1

Note: ** Correlation is Significant at the 0.01 Level. *. Correlation is Significant at the 0.05 Level

From Table 4.26 shows the correlation between variables in all sizes of hospitals. The relationship between 10 factors of TQM was quite high correlation with the value of 0.8.Continuous improvement was the most critical success factors for hospital performance (HA level), followed by hospital management overview, customer satisfaction, and hospital quality system, respectively.

Table 4.27 Correlation Coefficient for Large Sized Hospitals (200 and 100 Beds up)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Hospital Performance	1													
Hospital management overview	.382**	1												
Customer satisfaction	.552**	.193	1											
Hospital Quality system	.651**	.202	.621**	1										
Leadership	.170	.269	.136	.056	1									
Strategy plan	.292	.271	.213	.197	.833**	1								
Customer	.295*	.280	.197	.118	.796**	.773**	1							
Employee	.342*	.274	.258	.210	.831**	.889**	.877**	1						
Information/ Technology	.386**	.375*	.343*	.269	.738**	.841**	.826**	.843**	1					
Process	.233	.272	.176	.109	.882**	.858**	.842**	.853**	.823**	1				
Knowledge Management	.264	.167	.273	.201	.702**	.785**	.786**	.876**	.812**	.781**	1			
CQI	.196	.133	.113	.144	.766**	.869**	.773**	.913**	.758**	.795**	.854**	1		
Culture	.270	.239	.256	.160	.827**	.863**	.800**	.899**	.817**	.848**	.867**	.874**	1	
Communication	.215	.180	.128	.097	.900**	.800**	.796**	.806**	.734**	.910**	.675**	.777**	.836**	1

Note: ** Correlation is Significant at the 0.01 Level (2-tailed).*. Correlation is Significant at the 0.05 Level (2-Tailed).

From Table 4.27 shows the correlation between variables in large-sized hospitals. The relationship between the 10 factors of TQM was quite high correlation. Technology was the most significant factor for hospital performance (HA level), followed by hospital management overview, and customer satisfaction, respectively.

Table 4.28 Correlation Coefficient for Medium Sized Hospitals (60 Beds up)

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Hospital Performance	1													
Hospital mgt overview	.768**	1												
Customer Result	.807**	.788**	1											
Hospital Quality system	.719**	.555**	.790**	1										
Leadership	.321**	.277*	.357**	.356**	1									
strategy plan	.300*	.222	.394**	.385**	.894**	1								
customer	.319**	.288*	.385**	.325**	.892**	.893**	1							
employee	.303*	.239*	.372**	.350**	.890**	.909**	.929**	1						
Information Technology	.292*	.216	.351**	.328**	.872**	.874**	.893**	.894**	1					
Process	.310**	.284*	.385**	.330**	.899**	.868**	.868**	.919**	.883**	1				
Knowledge Management	.362**	.330**	.419**	.362**	.870**	.883**	.911**	.891**	.890**	.865**	1			
CQI	.388**	.372**	.436**	.380**	.866**	.850**	.841**	.891**	.857**	.842**	.884**	1		
Culture	.397**	.366**	.489**	.418**	.860**	.863**	.907**	.913**	.885**	.870**	.908**	.895**	1	
Communication	.316**	.302*	.387**	.356**	.880**	.876**	.923**	.924**	.892**	.871**	.938**	.880**	.924**	1

Note: ** Correlation is Significant at the 0.01 Level (2-Tailed). *. Correlation is Significant at the 0.05 Level (2-Tailed).

From Table 4.28 shows the correlation between variables in medium-sized hospitals. The relationship between 10 factors of TQM was quite high correlation. Culture strength was the most significant factors for Hospital Performance (HA level), hospital quality system and customer satisfaction. CQI was the most significant factors for hospital management overview.

Table 4.29 Correlation Coefficient for Small Size Hospitals (30 and 10 Beds up)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Hospital Performance	1													
Hospital management overview	.624**	1												
Customer satisfaction	.791**	.665**	1											
Hospital Quality system	.720**	.566**	.723**	1										
Leadership	.100	.062	.074	.062	1									
Strategy plan	.055	.057	.045	.126	.891**	1								
Customer	.038	.040	.003	.083	.758**	.807**	1							
Employee	.050	.005	.054	.089	.826**	.835**	.837**	1						
Information Technology	.063	.032	.074	.109	.800**	.825**	.719**	.782**	1					
Process	.058	.018	.043	.012	.800**	.775**	.683**	.787**	.774**	1				
Knowledge Management	.025	.015	.016	.033	.845**	.836**	.732**	.824**	.787**	.821**	1			
CQI	.149	.133	.101	.112	.807**	.807**	.735**	.764**	.708**	.742**	.853**	1		
Culture	.041	.035	.003	.012	.835**	.818**	.805**	.848**	.763**	.812**	.879**	.872**	1	
Communication	-.080	-.072	-.072	-.032	.805**	.785**	.742**	.800**	.743**	.802**	.811**	.737**	.858**	1

Note: ** Correlation is Significant at the 0.01 Level (2-Tailed).

From table 4.29 shows the correlation between variables in small-sized hospitals. Ten factors of TQM were related to each other quite at high correlation, but they were not significant by related to hospital performance, hospital management overview, hospital quality system, and customer satisfaction.

Table 4.30 The Result of the Regression Analysis of the Relationship between the Independent Variables (TQM Practices) and the Dependent Variable (Performance) in all Sizes of the Hospitals

Independent Variable	**Dependent Variable : Hospital Performance**					**R^2**	**F**
	β	T	P	Beta	Result		
TQM	0.084	2.942	.004	.193	Significant	0.037	8.66**
Leadership	0.070	2.707	.007	0.178	Significant	0.032	7.32**
Strategy planning	00.07	2.663	.008	0.175	Significant	0.031	7.09**
Customer focus	0.079	2.679	.008	0.176	Significant	0.031	7.17**
Workforce focus	0.077	2.806	.005	0.184	Significant	0.034	7.87**
Technology	0.075	2.838	.005	0.186	Significant	0.035	8.05**
Work process	0.067	2.563	.011	0.169	Significant	0.029	6.56*
KM	0.070	2.599	.010	0.171	Significant	0.029	6.75**
CQI	0.091	3.712	.000	0.241	Significant	0.058	13.78***
Culture	0.087	3.203	.002	0.209	Significant	0.044	10.26**
Communication	0.035	1.451	.148	0.096	Insignificant	0.009	2.11

Table 4.30 indicates that there were nine factors that affected Hospital Performance (HA Level) of Thai public hospitals, when regression analysis was made. Continuous improvement was the most influential and communication is the least.

Table 4.31 The Result of the Regression Analysis of the Relationship between the Independent Variables (TQM Practices) and the Dependent Variable (Performance) in Large-sized Hospitals (200 and 100 Beds up)

Independent Variable	**Dependent Variable : Hospital Performance**					**R^2**	**F**
	β	T	P	Beta	Result		
TQM	.120	1.965	.056	.287	Insignificant	.082	3.860
Leadership	0.067	1.134	0.263	0.170	Insignificant	0.029	1.285
Strategy planning	.116	2.000	.052	.292	Insignificant	.085	3.999
Customer focus	.128	2.024	.049	.295	Significant	.087	4.096*
Workforce focus	.139	2.389	.021	.342	Significant	.117	5.707*
Technology	.163	2.743	.009	.386	Significant	.149	7.527**
Work process	.082	1.574	.123	.233	Insignificant	.054	2.478
KM	.104	1.797	.079	.264	Insignificant	.070	3.230
CQI	.071	1.308	.198	.196	Insignificant	.038	1.710
Culture	.104	1.839	.073	.270	Insignificant	.073	3.383
Communication	.071	1.446	.155	.215	Insignificant	.046	2.091

Table 4.31 shows three factors that affected Hospital Performance (HA level) in large-sized Thai public hospitals. Technology was the most influential.

Table 4.32 The Result of the Regression Analysis of the Relationship between the Independent Variables (TQM Practices) and the Dependent Variable (Performance) in Medium-sized (60 Beds up) Hospitals

Independent Variable	**Dependent Variable : Hospital Performance**					**R^2**	**F**
	β	T	P	Beta	Result		
TQM	.135	3.072	.003	.349	Significant	.122	9.437**
Leadership	.114	2.800	.007	.321	Significant	.103	7.839**
Strategy planning	.109	2.590	.012	.300	Significant	.090	6.709*
Customer focus	.132	2.775	.007	.319	Significant	.102	7.698**
Workforce focus	.116	2.624	.011	.303	Significant	.092	6.883*
Technology	.108	2.514	.014	.292	Significant	.085	6.319*
Work process	.112	2.687	.009	.310	Significant	.096	7.221**
KM	.142	3.199	.002	.362	Significant	.131	10.233**
CQI	.135	3.467	.001	.388	Significant	.150	12.023***
Culture	.146	3.566	.001	.397	Significant	.158	12.717***
Communication	.103	2.748	.008	.316	Significant	.100	7.552**

Table 4.32 shows that all factors influenced Hospital Performance (HA level) in medium-sized Thai public hospitals when regression analysis was made. Culture was the most influential.

Table 4.33 The Result of the Regression Analysis of the Relationship between the Independent Variables (TQM Practices) and the Dependent Variable (Performance) in Small-sized Hospitals (30 and 10 Beds up)

Independent Variable	**Dependent Variable : Hospital Performance**					**R^2**	**F**
	β	T	P	Beta	Result		
TQM	.026	.574	.567	.055	Insignificant	.003	.330
Leadership	.043	1.047	.297	.100	Insignificant	.010	1.097
Strategy planning	.023	.575	.567	.055	Insignificant	.003	.331
Customer focus	.018	.393	.695	.038	Insignificant	.001	.155
Workforce focus	.022	.523	.602	.050	Insignificant	.003	.273
Technology	.026	.656	.513	.063	Insignificant	.004	.430
Work process	.026	.611	.543	.058	Insignificant	.003	.373
KM	.010	.264	.792	.025	Insignificant	.001	.070
CQI	.060	1.569	.120	.149	Insignificant	.022	2.460
Culture	.019	.425	.672	.041	Insignificant	.002	.181
Communication	-.032	-.835	.405	-.080	Insignificant	.006	.698

Table 4.33 shows that all factors did not influence Hospital Performance in small-sized Thai public hospitals.

Table 4.34 The Result of the Regression Analysis of the Relationship between Independent Variable (TQM Practices) and Dependent Variable (Hospital Management Overview) in all Sizes of the Hospitals

Independent Variable	**Dependent Variable : Hospital Management Overview**					**R^2**	**F**
	β	T	P	Beta	Result		
TQM	.079	2.457	.015	.162	Significant	0.026	6.04*
Leadership	0.069	2.369	.019	0.156	Significant	0.024	5.61*
Strategy planning	0.064	2.154	.032	0.142	Significant	0.020	4.64*
Customer focus	0.081	2.440	.015	0.161	Significant	0.026	5.95*
Workforce focus	0.059	1.904	.058	0.126	Insignificant	0.016	3.62
Technology	0.063	2.109	.036	0.14	Significant	0.020	4.44*
Work process	0.065	2.190	.030	0.145	Significant	0.021	4.79*
KM	0.063	2.097	.037	0.139	Significant	0.019	4.39*
CQI	0.092	3.321	.001	0.217	Significant	0.047	11.03**
Culture	0.088	2.846	.005	0.187	Significant	0.035	8.10**
Communication	0.035	1.305	.193	0.087	Insignificant	0.008	1.70

In Table 4.34 there were eight factors that affected hospital management overview in Thai public hospitals. CQI was the most influential. Two factors did not affect hospital management overview were workforce focus and communication.

Table 4.35 The Result of the Regression Analysis of the Relationship between Independent Variable (TQM Practices) and Dependent Variable (Hospital Management Overview) in Large-sized Hospitals

Independent Variable	**Dependent Variable : Hospital Management Overview**					**R^2**	**F**
	β	T	P	Beta	Result		
TQM	.119	1.801	.079	.265	Insignificant	.070	3.242
Leadership	0.113	1.832	0.074	0.269	Insignificant	0.072	3.355
Strategy planning	.116	1.848	.072	.271	Insignificant	.074	3.414
Customer focus	.130	1.910	.063	.280	Insignificant	.078	3.647
Workforce focus	.119	1.870	.068	.274	Insignificant	.075	3.498
Technology	.169	2.655	.011	.375	Significant	.141	7.049*
Work process	.102	1.852	.071	.272	Insignificant	.074	3.430
KM	.070	1.113	.272	.167	Insignificant	.028	1.239
CQI	.052	.883	.382	.133	Insignificant	.018	.779
Culture	.099	1.611	.114	.239	Insignificant	.057	2.597
Communication	.063	1.197	.238	.180	Insignificant	.032	1.432

In Table 4.35 technology was only one factor affecting Hospital management overview in large-sized Thai public hospitals.

Table 4.36 The Result of the Regression Analysis of the Relationship between Independent Variable (TQM Practices) and Dependent Variable (Hospital Management Overview) in Medium-sized Hospitals

Independent Variable	**Dependent Variable : Hospital Management Overview**					**R^2**	**F**
	β	T	P	Beta	Result		
TQM	.131	2.654	.010	.306	Significant	.094	7.043**
Leadership	.108	2.381	.020	.277	Significant	.077	5.671*
Strategy planning	.089	1.875	.065	.222	Insignificant	.049	3.514
Customer focus	.132	2.484	.015	.288	Significant	.083	6.168*
Workforce focus	.101	2.031	.046	.239	Significant	.057	4.124*
Technology	.088	1.822	.073	.216	Insignificant	.047	3.319
Work process	.113	2.446	.017	.284	Significant	.081	5.983*
KM	.165	3.810	.000	.419	Significant	.176	14.515***
CQI	.143	3.308	.002	.372	Significant	.139	10.943**
Culture	.148	3.246	.002	.366	Significant	.134	10.535**
Communication	.109	2.612	.011	.302	Significant	.091	6.824*

In Table 4.36 there were eight factors that affected hospital management overview in medium-sized Thai public hospitals. KM had the most impact. Two factors that had no effect on hospital management overview were strategy planning and technology.

Table 4.37 The Result of the Regression Analysis of the Relationship between Independent Variable (TQM Practices) and Dependent Variable (Hospital Management Overview) in Small-sized Hospitals

Independent Variable	**Dependent Variable : Hospital Management Overview**					**R^2**	**F**
	β	T	P	Beta	Result		
TQM	.020	.374	.709	.036	Insignificant	.001	.140
Leadership	.030	.645	.520	.062	Insignificant	.004	.417
Strategy planning	.028	.598	.551	.057	Insignificant	.003	.357
Customer focus	.022	.418	.677	.040	Insignificant	.002	.175
Workforce focus	.002	.050	.960	.005	Insignificant	.000	.003
Technology	.015	.339	.735	.032	Insignificant	.001	.115
Work process	.009	.190	.849	.018	Insignificant	.000	.036
KM	.007	.161	.872	.015	Insignificant	.000	.026
CQI	.062	1.398	.165	.133	Insignificant	.018	1.954
Culture	.019	.368	.714	.035	Insignificant	.001	.135
Communication	-.033	-.757	.451	-.072	Insignificant	.005	.572

From table 4.37 all factors had no effect on hospital management overview in small-sized Thai public hospitals when regression analysis were made.

Table 4.38 The Result of the Regression Analysis to Find out the Relationship between Independent Variable (TQM Practices) and Dependent Variable (Customer Satisfaction) in all Size Hospitals

Independent Variable	**Dependent Variable : Customer Satisfaction**					**R^2**	**F**
	β	T	P	Beta	Result		
TQM	.090	2.856	.005	.187	Significant	0.035	8.16**
Leadership	0.072	2.500	.013	0.165	Significant	0.027	6.25*
Strategy planning	0.078	2.680	.008	0.176	Significant	0.031	7.18**
Customer focus	0.076	2.319	.021	0.153	Significant	0.023	5.37*
Workforce focus	0.085	2.818	.005	0.185	Significant	0.034	7.93**
Technology	0.085	2.934	.004	0.192	Significant	0.037	8.61**
Work process	0.075	2.612	.010	0.172	Significant	0.030	6.81**
KM	0.078	2.651	.009	0.174	Significant	0.030	7.02**
CQI	0.086	3.159	.002	0.207	Significant	0.043	9.98**
Culture	0.095	3.151	.002	0.206	Significant	0.042	9.92**
Communication	0.042	1.578	.116	0.105	Insignificant	0.011	2.48

In Table 4.38 there were nine factors that affected customer satisfaction in Thai public hospitals. CQI had the most effect and. communication was only one factor that had no effect on customer satisfaction.

Table 4.39 The Result of the Regression Analysis of the Relationship between Independent Variable (TQM Practices) and Dependent Variable (Customer Results) in Large-sized Hospitals

Independent Variable	**Dependent Variable : Customer Satisfaction**					**R^2**	**F**
	β	T	P	Beta	Result		
TQM	.103	1.511	.138	.225	Insignificant	.050	2.282
Leadership	0.058	0.903	0.372	0.136	Insignificant	0.019	0.815
Strategy planning	.093	1.428	.160	.213	Insignificant	.045	2.040
Customer focus	.094	1.319	.194	.197	Insignificant	.039	1.739
Workforce focus	.114	1.749	.087	.258	Insignificant	.066	3.059
Technology	.158	2.398	.021	.343	Significant	.118	5.752*
Work process	.067	1.173	.247	.176	Insignificant	.031	1.375
KM	.117	1.861	.070	.273	Insignificant	.075	3.462
CQI	.045	.748	.459	.113	Insignificant	.013	.559
Culture	.108	1.737	.089	.256	Insignificant	.066	3.019
Communication	.046	.846	.402	.128	Insignificant	.016	.716

In Table 4.39 there were nine factors that had no effect on customer satisfaction in large-sized Thai public hospitals. Technology was the only one factor that affected customer satisfaction.

Table 4.40 The Result of the Regression Analysis of the Relationship between Independent Variable (TQM Practices) and Dependent Variable (Customer Satisfaction) in Medium-sized Hospitals

Independent Variable	**Dependent Variable : Customer Satisfaction**					**R^2**	**F**
	β	T	P	Beta	Result		
TQM	.164	3.813	.000	.420	Significant	.176	14.539***
Leadership	.127	3.154	.002	.357	Significant	.128	9.950**
Strategy planning	.145	3.536	.001	.394	Significant	.155	12.506***
Customer focus	.161	3.443	.001	.385	Significant	.148	11.855***
Workforce focus	.143	3.307	.002	.372	Significant	.139	10.935**
Technology	.132	3.096	.003	.351	Significant	.124	9.586**
Work process	.140	3.443	.001	.385	Significant	.148	11.854***
KM	.165	3.810	.000	.419	Significant	.176	14.515***
CQI	.153	4.000	.000	.436	Significant	.190	15.997***
Culture	.181	4.621	.000	.489	Significant	.239	21.352***
Communication	.127	3.457	.001	.387	Significant	.149	11.948***

In Table 4.40 all factors were found to affect customer satisfaction. Culture was the most influential.

Table 4.41 The Result of the Regression Analysis of the Relationship between Independent Variable (TQM Practices) and Dependent Variable (Customer Satisfaction) in Small-sized Hospitals

Independent Variable	**Dependent Variable : Customer Satisfaction**					**R^2**	**F**
	β	T	P	Beta	Result		
TQM	.021	.396	.693	.038	Insignificant	.001	.157
Leadership	.037	.774	.440	.074	Insignificant	.005	.599
Strategy planning	.023	.472	.638	.045	Insignificant	.002	.223
Customer focus	.002	.033	.974	.003	Insignificant	.000	.001
Workforce focus	.028	.563	.575	.054	Insignificant	.003	.317
Technology	.036	.771	.442	.074	Insignificant	.005	.595
Work process	.023	.454	.651	.043	Insignificant	.002	.206
KM	.008	.165	.869	.016	Insignificant	.000	.027
CQI	.048	1.058	.292	.101	Insignificant	.010	1.119
Culture	.002	.029	.977	.003	Insignificant	.000	.001
Communication	-.034	-.750	.455	-.072	Insignificant	.005	.562

In Table 4.41 all factors had no effect on customer satisfaction in small-sized Thai public hospitals.

Table 4.42 The Result of the Regression Analysis of the Relationship between Independent Variable (TQM Practices) and Dependent Variable (Hospital Quality System) in all Size Hospitals

Independent Variable	**Dependent Variable : Hospital Quality System**					**R^2**	**F**
	β	T	P	Beta	Result		
TQM	0.90	2.773	.006	.182	Significant	0.033	7.69**
Leadership	0.067	2.264	.025	0.150	Significant	0.023	5.12*
Strategy planning	0.099	3.365	.001	0.219	Significant	0.048	11.32**
Customer focus	0.084	2.522	.012	0.166	Significant	0.028	6.36*
Workforce focus	0.09	2.920	.004	0.192	Significant	0.037	8.52**
Technology	0.091	3.064	.002	0.201	Significant	0.040	9.38**
Work process	0.056	1.883	.061	0.125	Insignificant	0.016	3.54
KM	0.072	2.363	.019	0.156	Significant	0.024	5.58*
CQI	0.088	3.124	.002	0.204	Significant	0.042	9.75**
Culture	0.082	2.623	.009	0.173	Significant	0.030	6.87**
Communication	0.042	1.543	.124	0.103	Insignificant	0.011	2.37

In Table 4.42 there were eight factors that affected the hospital quality system in Thai public hospitals. Strategy planning had the highest effect on the hospital quality system. In contrast, work process and communication are had no effect.

Table 4.43 The Result of the Regression Analysis of the Relationship between Independent Variable (TQM Practices) and Dependent Variable (Hospital Quality System) in Large-sized Hospitals

Independent Variable	**Dependent Variable : Hospital Quality System**					**R^2**	**F**
	β	T	P	Beta	Result		
TQM	.080	1.116	.270	.168	Insignificant	.028	1.246
Leadership	0.025	0.371	0.713	0.056	Insignificant	0.003	0.137
Strategy planning	.089	1.319	.194	.197	Insignificant	.039	1.738
Customer focus	.059	.783	.438	.118	Insignificant	.014	.612
Workforce focus	.097	1.406	.167	.210	Insignificant	.044	1.978
Technology	.129	1.833	.074	.269	Insignificant	.072	3.360
Work process	.044	.721	.475	.109	Insignificant	.012	.519
KM	.089	1.343	.186	.201	Insignificant	.040	1.803
CQI	.059	.957	.344	.144	Insignificant	.021	.916
Culture	.070	1.063	.294	.160	Insignificant	.026	1.131
Communication	.036	.639	.527	.097	Insignificant	.009	.408

In Table 4.43 all factors had no effect on the hospital quality system in large-sized Thai public hospitals.

Table 4.44 The Result of the Regression Analysis of the Relationship between Independent Variable (TQM Practices) and Dependent Variable (Hospital Quality System) in Medium-size Hospitals

Independent Variable	**Dependent Variable : Hospital Quality System**					**R^2**	**F**
	β	T	P	Beta	Result		
TQM	.148	3.381	.001	.379	Significant	.144	11.429***
Leadership	.127	3.145	.002	.356	Significant	.127	9.894**
Strategy planning	.142	3.444	.001	.385	Significant	.149	11.861***
Customer focus	.136	2.833	.006	.325	Significant	.106	8.028**
Workforce focus	.135	3.080	.003	.350	Significant	.122	9.484**
Technology	.123	2.863	.006	.328	Significant	.108	8.195**
Work process	.120	2.883	.005	.330	Significant	.109	8.312**
KM	.143	3.204	.002	.362	Significant	.131	10.269**
CQI	.134	3.385	.001	.380	Significant	.144	11.456***
Culture	.155	3.795	.000	.418	Significant	.175	14.404***
Communication	.117	3.138	.003	.356	Significant	.126	9.846**

In Table 4.44 all factors had an effect on hospital quality system. In medium-sized Thai public hospitals culture had the highest effect.

Table 4.45 The Result of the Regression Analysis of the Relationship between Independent Variable (TQM Practices) and Dependent Variable (Hospital Quality System) in Small-sized Hospitals

Independent Variable	**Dependent Variable : Hospital Quality System**					**R^2**	**F**
	β	T	P	Beta	Result		
TQM	.038	.702	.484	.067	Insignificant	.004	.493
Leadership	.032	.647	.519	.062	Insignificant	.004	.418
Strategy planning	.065	1.328	.187	.126	Insignificant	.016	1.764
Customer focus	.047	.866	.388	.083	Insignificant	.007	.750
Workforce focus	.047	.938	.350	.089	Insignificant	.008	.880
Technology	.054	1.143	.255	.109	Insignificant	.012	1.307
Work process	.006	.122	.903	.012	Insignificant	.000	.015
KM	.017	.346	.730	.033	Insignificant	.001	.120
CQI	.054	1.172	.244	.112	Insignificant	.012	1.373
Culture	.07	.129	.898	.012	Insignificant	.000	.017
Communication	-.015	-.336	.738	-.032	Insignificant	.001	.113

In Table 4.45 all factors had no effect on the hospital quality system in small-sized Thai public hospitals.

The following conclusion could be drawn from Tables 4.28 to 4.45:

1) In small-sized Thai public hospitals, all factors had no effect on the overall performance.

2) In medium-sized Thai public hospitals ten factors affected the hospital quality system, customer satisfaction, and hospital performance and eight factors affected hospital management overview.

3) In large-sized Thai public hospitals, almost all the factors had no effect on the overall performance. Technology was the one factor that affected hospital management overview and customer satisfaction.

4) In Thai public hospitals of all sizes, there were nine factors affecting hospital performance and customer satisfaction. There were eight factors that affected hospital management overview and the hospital quality system. CQI had the highest impact on Hospital performance (HA level), hospital management overview and customer satisfaction. Strategy planning had the highest effect on the hospital quality system. Communication had no effect on the overall performance.

4.5 Results of Hypothesis Testing

Table 4.46 The Results of Hypothesis Testing

Hypothesis	***β***	**T**	**P**	**Beta**	**Result**	**R^2**	**F**
H1: TQM has a positive effect on hospital performance in Thai public hospitals.	.084	2.942	.004	.193	Significant	.037	8.66**
H2: TQM has a positive effect on hospital performance in large-sized hospitals.	.120	1.965	.056	.287	Insignificant	.082	3.860
H3: TQM has a positive effect on hospital performance in medium-sized hospitals.	.135	3.072	.003	.349	Significant	.122	9.437**
H4: TQM has a positive effect on hospital performance in small-sized hospitals.	.026	.574	.567	.055	Insignificant	.003	.330
H5:Leadership has a positive effect on hospital performance.	0.070	2.707	.007	0.178	Significant	0.032	7.32**
H6:Strategy planning has a positive effect on hospital performance.	00.07	2.663	.008	0.175	Significant	0.031	7.09**
H7: Customer focus has a positive effect on hospital performance.	0.079	2.679	.008	0.176	Significant	0.031	7.17**

Table 4.46 (Continued)

Hypothesis	β	T	P	Beta	Result	R^2	F
H8:Workforce focus has a positive effect on hospital performance.	0.077	2.806	.005	0.184	Significant	0.034	7.87**
H9:Technology has a positive effect on hospital performance.	0.075	2.838	.005	0.186	Significant	0.035	8.05**
H10:Work process has a positive effect on hospital performance.	0.067	2.563	.011	0.169	Significant	0.029	6.56*
H11:KM has a positive effect on hospital performance.	.070	2.599	.010	0.171	Significant	0.029	6.75**
H12: CQI has a positive effect on hospital performance.	0.091	3.712	.000	0.241	Significant	0.058	13.78***
H13: Culture has a positive effect on hospital performance.	0.087	3.203	.002	0.209	Significant	0.044	10.26**
H14: Communication has a positive effect on hospital performance.	0.035	1.451	.148	0.096	**Insignificant**	0.009	2.11
H15: Leadership has a positive effect on hospital management overview.	0.069	2.369	.019	0.156	Significant	0.024	5.61*
H16:Strategy planning has a positive effect on hospital management overview.	0.064	2.154	.032	0.142	Significant	0.020	4.64*
H17: Customer focus has a positive effect on hospital management overview.	0.081	2.440	.015	0.161	Significant	0.026	5.95*
H18:Workforce focus has a positive effect on hospital management overview.	0.059	1.904	.058	0.126	**Insignificant**	0.016	3.62
H19: Technology has a positive effect on hospital management overview.	0.063	2.109	.036	0.14	Significant	0.020	4.44*
H20: Work process has a positive effect on hospital management overview.	0.065	2.190	.030	0.145	Significant	0.021	4.79*

Table 4.46 (Continued)

Hypothesis	β	T	P	Beta	Result	R^2	F
H21: KM has a positive effect on hospital management overview.	0.063	2.097	.037	0.139	Significant	0.019	4.39*
H22: CQI has a positive effect on hospital management overview.	0.092	3.321	.001	0.217	Significant	0.047	11.03**
H23:Culture has a positive effect on hospital management overview.	0.088	2.846	.005	0.187	Significant	0.035	8.10**
H24: Communication has a positive effect on hospital management overview.	0.035	1.305	.193	0.087	**Insignificant**	0.008	1.70
H25: Leadership has a positive effect on hospital quality system.	0.067	2.264	.025	0.150	Significant	0.023	5.12*
H26:Strategy planning has a positive effect on hospital quality system.	0.099	3.365	.001	0.219	Significant	0.048	11.32**
H27:Customer focus has a positive effect on hospital quality system.	0.084	2.522	.012	0.166	Significant	0.028	6.36*
H 28: Workforce focus has a positive effect on hospital quality system.	0.09	2.920	.004	0.192	Significant	0.037	8.52**
H29: Technology has a positive effect on hospital quality system.	0.091	3.064	.002	0.201	Significant	0.040	9.38**
H30:Work process has a positive effect on hospital quality system.	0.056	1.883	.061	0.125	**Insignificant**	0.016	3.54
H31: KM has a positive effect on hospital quality system.	0.072	2.363	.019	0.156	Significant	0.024	5.58*
H32: CQI has a positive effect on hospital quality system.	0.088	3.124	.002	0.204	Significant	0.042	9.75**
H33: Culture has a positive effect on hospital quality system.	0.082	2.623	.009	0.173	Significant	0.030	6.87**

Table 4.46 (Continued)

Hypothesis	***β***	**T**	**P**	**Beta**	**Result**	**R^2**	**F**
H34: Communication has a positive effect on hospital quality system.	0.042	1.543	.124	0.103	**Insignificant**	0.011	2.37
H35: Leadership has a positive effect on customer satisfaction.	0.072	2.500	.013	0.165	Significant	0.027	6.25*
H36: Strategy planning has a positive effect on customer satisfaction.	0.078	2.680	.008	0.176	Significant	0.031	7.18**
H37: Customer focus has a positive effect on customer satisfaction.	0.076	2.319	.021	0.153	Significant	0.023	5.37*
H 38: Workforce focus has a positive effect on customer satisfaction.	0.085	2.818	.005	0.185	Significant	0.034	7.93**
H39: Technology focus has a positive effect on customer satisfaction.	0.085	2.934	.004	0.192	Significant	0.037	8.61**
H40: Work process has a positive effect on customer satisfaction.	0.075	2.612	.010	0.172	Significant	0.030	6.81**
H41: KM has a positive effect customer satisfaction.	0.078	2.651	.009	0.174	Significant	0.030	7.02**
H42: CQI has a positive effect on customer satisfaction.	0.086	3.159	.002	0.207	Significant	0.043	9.98**
H 43:Culture has a positive effect on customer satisfaction.	0.095	3.151	.002	0.206	Significant	0.042	9.92**
H44: Communication has a positive effect on customer satisfaction.	0.042	1.578	.116	0.105	**Insignificant**	0.011	2.48

4.6 Summary

This chapter presents the factors in TQM that affected hospital performance (HA level), hospital management overview, hospital quality system and customer satisfaction in different sizes of Thai public hospitals. It was found that TQM was significant to hospital performance (HA level) of medium-sized Thai public hospitals, but not large-sized and small-sized hospitals. There were nine factors effecting hospital performance (HA level) and customer satisfaction in Thai public hospitals of all sizes. Only communication had no effect. Eight factors had effect hospital management overview (except for workforce focus and communication) and eight factors influenced hospital quality system (except for work process and communication). In Thai public hospitals, CQI had the highest effect on hospital performance (HA level), hospital management overview and customer satisfaction. Strategy planning had the highest effect on hospital quality system. Communication was the factor that had no effect on the overall performance. Nevertheless this study found that ten factors had no effect on the overall performance of small-sized hospitals. But in medium-sized hospitals ten factors had an effect on hospital quality system, customer satisfaction and hospital performance. In large-sized hospitals ten factors had no effect hospital performance (HA level) and hospital quality system, and nine factors had no effect hospital management overview and customer satisfaction. Only technology had an effect on them.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

This chapter consists of five parts. The first part summarizes the results of the Chapter 4. The second part discusses the theoretical, practical, and policy implications. The third part presents the limitations of this study. The fourth part concerns some guidance for public hospitals. The last part provides recommendations for further studies.

5.1 Conclusions

5.1.1 Characteristics of the Respondents

Most respondents were in the group of 30 beds up hospitals (204 out of 429). When the hospitals of the same size were compared, it was found that the group of 60 beds up hospitals had the largest number of the respondents because Thai public hospitals were medium-sized ones (30-60 beds) in sub-districts and districts.

One hundred percent of Thai public hospitals had been evaluated by internal and external organizations. In fact, almost all had been evaluated by HAI. This study found that most were evaluated by HAI. Thai public hospitals of all sizes had developed quality services in line with the government policy that healthcare organizations were required to have good performance and to be standardized.

Most of the Thai public hospitals in this study were in level 3, as and the HA scores were in the range of 3 to 3.99.Only 1.3 percent did not achieve this level. This suggested that most Thai public hospitals had tried to improve the quality of their services to reach a high standard. And it was found that the 100-beds group had the best quality because they reached HA level 3of HA.

Most Thai public hospitals have been reaccredited because they have continued to improve the service quality to retain the standard. More large-sized hospitals have been reaccredited than small-sized hospitals. When the correlation

between the hospital size and the number of reaccreditations was tested, it was found that there was no relationship between the hospital size and the number of reaccreditations. In fact, hospitals of all sizes were reaccredited 1,2or 3 times.

More Women worked in a leadership position than men. The relationship between the hospital size and the gender of the hospital leader was to have no statistical significance. When the ages of the respondents were divided into four groups, it was found that most leaders in the organizations were 40 years of age or more and the relationship between the hospital size and the age of the leader was statistically significant.

Hospital leaders earned at least a Bachelor's degree. And the correlation between the hospital size and the education of the leader was statistically significant. That is, leaders in large-sized hospitals had higher education than those small-sized hospitals. The high percentage earned a doctoral degree.

With regard to the number of service years in the organization, it was found that most had work experience of more than 21 years in the organization and only 2.7 percent worked for the organization for less than one year. This statistics implied that the respondents who worked in the leading position were highly experienced and worked for the organization for 10 years or more. And the chief of the hospital quality improvement section in bigger-sized hospitals were important persons who knew quality management in hospitals, whereas in smaller-sized hospitals, the director of the hospital was the most important. Because the system, process, and workforce in smaller-sized hospitals were simple, there was no need to establish the quality department, and the director could control everything in the hospital. As for the number of years in the current position, most of the respondents worked in their current position for 1-5 years in almost all sizes of hospitals. Because there was hierarchy in Thai public organizations, it took quite a long time to be in the leadership position. So those who took this position reached nearly the retirement age.

5.1.2 Hypothesis Testing

Based on the conceptual framework concerning Thai public hospitals,, a positive association was found between the independent variables (TQM, leadership, strategy planning, customer focus, workforce focus, technology, process, KM , CQI,

culture, communication) and the dependent variables (Hospital Performance, hospital management overview, hospital quality system, customer satisfaction).

This study aimed to identify the relationship between the critical success factors for TQM implementation and organization performance in Thai public hospitals, to find out which critical factors were important for hospitals. In this study the researcher examined organizational performance of public hospitals accredited by HAI, critical factors were taken from HA criteria and other previous studies in literature review.

This study was quantitative research. The statistics for hypothesis testing were Pearson's Correlation, Factor Analysis, Regression Analysis, ANOVA, and Chi-square test.

When Factor Loading was applied it was found that all the variables had the value range of 0.75 to 0.95, which was closer 1. This indicated a high correlation of the variables, which, in turn, reflected their validity. Cronbach's alpha was used to test the reliability of the variables in this study. It was found that the Cronbach's alphas of all the factors of TQM ranged from 0.91 to 0.97, which was very high; therefore, the variables were highly reliable.

The critical success factors of TQM in this study were tested by regression analysis and it was found that almost all the factors had an effect on organization performance, except communication. When Chi-square test was used to compare the hospitals of the different sizes of organization performance, it was found to have no statistically significant difference.

The Results of this Study

1) TQM was significant to hospital performance (HA level) in Thai public hospitals, and medium-sized hospitals, but not large-sized and small-sized hospitals.

2) In all sizes of Thai public hospitals, nine factors effecting hospital performance (HA level) and customer satisfaction except communication. Eight factors had effect the hospital management overview except workforce focus and communication and eight factors influenced the hospital quality system (except work process and communication).

3) In the large-sized hospitals all the ten factors had no effect on hospital performance (HA level) and the hospital quality system and nine factors

except technology had no effect hospital management overview and customer satisfaction.

4) In the medium-sized hospitals all the ten factors had effect on hospital quality system, customer satisfaction, hospital performance (HA level), and eight factors except strategy planning and technology affected the hospital management overview.

5) In the small-sized Thai public hospitals, all the ten factors had no effect on the overall performance.

6) In all sizes of Thai public hospitals, continuous quality improvement was the most critical success factor for overall performance.

7) In large-sized hospitals, technology was the most significant factors for hospital management overview, and customer satisfaction.

8) In medium-sized hospitals, culture strength was the most significant factors for hospital performance (HA level), hospital quality system and customer satisfaction while CQI was the most significant factors for hospital management overview.

9) Communication was the factor that had no effect on the overall performance.

10) Customer satisfaction was the most important dimension that impacted the hospital performance (HA level).

5.2 Contributions of the Study

This study has made Theoretical Contributions and Practical Contributions. It also offered policy implications in the healthcare context.

5.2.1 Theoretical Contributions

Several research studies assessed service quality in the hospital sector from different perspectives, and mostly either financial performance or non financial performance has been in focus. However, this study focused on non-financial performance. The present study was expected to render theoretical contributions to the field as follows: 1) It attempted to identify the related factors to the performance of

Thai public hospitals; 2) It studied hospital management effectiveness and thus added to the literature new empirical data for the application of this concept in the hospital context.

5.2.2 Practical Contributions

Practical contributions of this research were recommended to public hospitals in Thailand. The first contribution is that the study revealed the perception of TQM in healthcare organizations. Second, the model and the factors affecting the performance were identified. Third, the differences in organizational performance of hospitality management in Thai public hospitals of different sizes were analyzed and compared hospital accreditation levels. The findings from this study were expected to serve as a valuable information source for hospital management as they could focus their efforts on the main factors of quality management and on adaptation of hospital practices. In summary, the findings of this study produced an insight into hospitality management in the Thai healthcare context. An understanding of critical success factors of TQM should also lead to more successful international service.

5.2.3 Policy Implications

Not only theoretical and practical contributions, but also other benefits would be gained by Thai public hospitals. The first contribution was that the effectiveness of hospital performance. Second, the model and the factors affecting organization performance were proved. Third, differences of the hospital management performance among public hospitals of different sizes were shown from perspectives. The findings from this study would bring about several benefits to the Thai public hospitals that made an attempt to implement the healthcare service policy at hospital. Finally, this research proposed an alternative model for hospital management.

5.3 Discussion

5.3.1 Discussion of Theoretical Contributions

5.3.1.1 Performance measurement in Thai Public Hospitals in Thailand

Performance measurement is very important for any organization because it will suggest what the organization should do in planning and improvement

for its efficiency and effectiveness. Among organizational performance indicators, two major ones are financial performance and non-financial performance.

In healthcare organizations both clinical and non-clinical performance and many other measures were used to evaluate the process and the outcome. The hospital performance measurement system was assumed to have transparency, accountability, and professionalism. Four key functions for evaluating and improving performance of health systems were providing services, creating resources, financing and overview. And the dimensions for measuring hospital performance were clinical performance, efficiency of the personnel responsible for social security, social welfare, and focus on the patient.

In Thailand the Quality Hospital Policy was adopted in1995 by the Permanent Secretary to the Ministry of Public health in Thailand. Since then hospitals have focused on quality management, and the hospital accreditation has been used to evaluate the performance. This study indicated that the performance could be measured by four multifaceted dimensions including hospital performance (HA level), hospital management overview, hospital quality system, and customer satisfaction which was accredited by HAI. The empirical findings confirmed the relationship between the critical factors for TQM and organization performance. It could be concluded that performance measurement was important for the improvement of organizational performance.

5.3.1.2 Total Quality Management in Thai Public Hospitals in Thailand

TQM emphasizes continuous improvement and focuses on customers, and team working. TQM has been used in many sectors, such as manufacturing, service, healthcare, banking, and education, for the last three decades. TQM is likely to help accomplish better performance in terms of quality, better business performance, greater customer satisfaction, and better employee relations. In healthcare organizations TQM brings all the people to join hands to improve the quality of products, processes, work environment and work culture.

TQM implementation has progressed to meet one of the three different evaluative models: ISO-9001 series of standards, quality awards criteria, and TQM practices (sometimes termed as CSFs of TQM).There have been many studies on CSFs of the TQM. In this study the CSFs of the TQM were leadership, strategy

planning, customer focus, workforce focus, technology, process, CQI, KM, culture and communication. The empirical findings confirmed that the CSFs comprised the construct of hospital performance (Chapter 4).

5.3.2 Discussion of Practical Contributions

The findings of this study were expected to serve as a valuable guideline for Thai public hospitals in adjusting their management practices and facilities to increase organizational performance effectiveness. The organizational performance evaluation in this study was HA. This research found that TQM implementation contributed to the critical success of the organizational performance of Thai public hospitals.

The main aim of this study was to determine the critical factors of TQM affecting the performance of Thai public hospitals of different sizes. The results of this study would enable the director of each hospital to oversee the staff to provide better service, and Hospital Accreditation Institute (HAI) to improve the criteria for hospital accreditation.

The findings showed that TQM had a significantly positive impact on organizational performance. Continuous improvement was the most significant factor for hospital performance, while communication was not significantly related to it.

5.3.3 Discussions of Policy Implications

Hospital management is sometimes an art and sometimes a science. Organization leaders ‘experience, skills, judgments and insight are necessary for implementation of the government policy. Thailand set the quality hospital policy in 1995 and HA was applied in 2000. Thai public hospitals implemented the healthcare public policy to provide effective service for people to ensure their right to receive quality medical treatment provided by government healthcare organizations.

Public hospitals in Thailand have been accredited by HAI which established a quality guideline for improving hospital performance effectiveness. TQA, PMQA, ISO, and JCI are awards serving as guidelines for helping hospitals in planning, organizing, staffing, directing and controlling the organization to perform services effectively and efficiently. Based on the research findings, Thai public hospitals’ directors were found to understand Thailand’s healthcare policy, to accept and to be

well-prepared for implementation it to improve their healthcare services. They have still further developed hospital services to serve customer satisfaction by encouraging their staffs to gain more knowledge and skills through training and education under Thailand's healthcare provision system.

5.4 Limitations of the Study

1) The respondents cannot give the raw score derived from hospital accreditation, so the researcher used the range of scores in the questionnaire.

2) Before answering the questionnaire, some hospitals had to seek approval from the hospital committee, so it took some time to return the questionnaire.

3) Some hospitals were called again to request them to complete the questionnaire.

5.5 Recommendations for Public Hospitals

Based on the theoretical perspective and the empirical findings, the following recommendations were made.

5.5.1 Customer Satisfaction

Customer satisfaction is significant to organization performance (Agus, 2004; Fotopoulos & Psomas, 2010), so healthcare organizations are assumed to be more customer focus than any other organizations. TQM focuses on patients (correct-patient surgery, correct- site, correct- procedure). It reduces incorrect patient identification, infections, and wrong treatment. Customer satisfaction is an important thing that must be surveyed so it has to be regularly surveyed for development. And the healthcare team should give priority to prevention, promotion and rehabilitation for patient care.

5.5.2 Hospital Quality

Today awareness of the quality performance in healthcare is growing. The goals of any health system reducing mortality, improving outcomes, reducing

infections are normally be set through a political process. In quality management the dimensions of quality in healthcare are effective, efficient, patient-centered, equitable, and safe. So TQM is recommended to be implemented in healthcare organization to improve hospital performance. And this study found that CQI had the highest impact on the quality results.

5.5.3 Hospital Management Overview

Based on the findings, nine factors under the study were found to affect the performance. Hassan, Mukhtar, Qureshi, & Sharif (2012) suggest that human resource management (HRM) is a key dimension for successful TQM implementation, as it allows organizations to manage the employees and use their abilities to achieve the goals and objectives. The participation of the staff in empowerment training programs, quality and the fair reward system are important factors of the HRM. Hospitals should officially develop the reward and recognition system to encourage employee participation and to support team working.

Strategic planning enables employee to develop a vision, carry out missions and meet strategic objectives. Hospitals' national quality strategy is a long-term program to improve hospital management and increase hospital performance overview. Many researchers have found that the change strategy is directed to the satisfaction of patients, increased patient safety strategy and personnel. The strategy is a key factor for TQM to guide the hospital to high perform, it was necessary to improve the quality management in a long-run as well as a short run. The organization may change the leader but it often does not change strategy.

And this study shows that a high level of culture of working together cohesively was the most important, followed by the creation of a culture of transparency, openness and trust. The culture of the organization should focus on the external market and competitors. The management in hospitals should have a clear strategic direction, clear objectives, and strong culture to improve the management of employees and staff in the hospital.

5.6 Future Studies

There are a wide variety of topics relevant to quality service management. The recommendations for future studies are the following:

1) A study can be conducted on specific critical factors of TQM, such as the effect of strategy planning on organization performance, the effect of the workforce focus on quality performance.

2) A unit of analysis can be organizations of each HA level. The data may be collected from the secondary sources-i.e. related reports and documents prepared by the organizations. The measurement should be adapted to fit the targeted sample.

3) In this research, only 10 critical factors of TQM that affected hospital performance were studied. There are other critical factors that may affect to organization. So, the future research should find what they are.

4) In this research, the data was collected from directors or office head. So, the future research should seek opinions of the employees.

5) The sample of the study included only Thai public hospitals, so future studies should focus on comparison of TQM practice in Thai private and public hospitals to confirm the results of this study.

5.7 Chapter Summary

This chapter summarizes the findings of the empirical testing of the model proposed for measuring the impact factors of TQM. These results were supported by empirical evidence helped to confirm the body of knowledge of quality management theory. From the perspective of management, this study showed that there was a significant relationship between TQM and the performance of the healthcare organization. The key elements of the service include organizational operation or management, the quality, and customers, all of which contributed to the performance of the organization.

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APPENDICES

APPENDIX A

QUESTIONNAIRE (English)

RESEARCH QUESTIONS

QUESTIONNAIRE SURVEY ON; THE CRITICAL SUCCESS FACTORS FOR TQM IMPLEMENTATION WITHIN THAI PUBLIC HOSPITALS (for leader)

Section 1: This questionnaire is to describe the demographic information of respondent, which provides additional background with purposeful for this study. Confidentiality is guaranteed. Please respond by making a mark or answering each of the following questions that applies to you:-

1. Gender

□ Male □ Female

2. Age

□ 20-29 □ 30-39 □ 40-49 □ 50-59

3. Education

□ Bachelor's degree □ Master's degree □ Doctor's degree

□ Postdoctoral degree □ others

4. How long have you worked in this hospital?

□ <1 yr. □ 1-5 yrs. □ 6-10 yrs. □ 11-15 yrs. □ 16-20 yrs. □ 21yrs.

5. What is your current position in this hospital?

□ Director of hospital medicine □ Chief of hospital quality improvement

□ Head staff □ Other, please specify (_____)

6. How long have you worked in current position?

□ <1 yr. □ 1-5 yrs. □ 6-10 yrs. □ 11-15 yrs. □ 16-20 yrs. □ 21yrs.

7. What is the type of your hospital?

□ Hospital center □ General hospital □ Large community hospital

□ Medium community hospital □ Other, please specify

Section 2 Questions on factor in TQM affect to organization performance

Please answer all items on this answer sheet.

Tend to agree	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Leadership										
1.Set clear directions										
2. Provide employees with a vision and sense of mission										
3.Set achievable plans, milestones, and goals										
4. Grow leaders from within.										
5. Stimulate change and improvement.										
6. Assemble a diverse and complementary management team and workforce.										

Tend to agree	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Strategy Planning ; Organization…..										
1. Aligns strategy, goals, and objectives with the demands of the external environment and adaptive plans to achieve these.										
2. Has balance long-term focus and short-term focus.										
3. Has measurable and achievable goals.										
4.Employees know about organization's strategy										
5. Employees follow the strategic plan.										

Tend to agree	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Customer focused; Organization…..										
1. Aware of how satisfied internal customers are.										
2. Aware of how satisfied our external customers are.										
3. Develop special processes for our best customers.										
4. Have flexible procedures and policies that act as guidelines in meeting customer needs.										
5. Give rewards to employees who take risks to better serve customers.										

Tend to agree	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Workforce focused; Organization…..										
1. Has information and knowledge to do job.										
2. Promote the person who has the best skills and knowledge to do the job.										
3. Empower employees to use their own judgment to meet customer needs.										
4. Concern about employees.										
5. Focus on safety-conscious.										
6. Creates innovative approaches to increase employee effectiveness.										

Tend to agree	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Analysis , Technology										
1. Your organization-wide performance measures match the organization's strategy.										
2. Your organization use technology for management.										
3. Develop performance measurement and evaluation										
4. Measure, analyze organization performance for improvement										
5. Manage by facts										

Tend to agree	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Process ; Organization..										
1. Has a clearly defined and well-followed process to resolve disagreements.										
2. Internal processes are designed to enable us to work together as well as possible.										
3. Has cross-functional and cross-organizational collaboration.										
4. Be simplify and flatten the organization										

Tend to agree	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Knowledge management										
1. Organization has the information and knowledge to do job.										
2. Learning and developing activities have helped to improve performance.										
3. Foster organization-wide sharing of information, boundaries and barriers between and around units. Knowledge and best practices.										

Tend to agree	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Continuous improvement										
1. In the organization processes are continuously improved.										
2. The organization continuously innovates its core competencies										
3. The organization continuously innovates its products, processes and services.										

Tend to agree	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Culture										
1. Everyone working together cohesively is the most important value.										
2. Organizational culture is externally focused on our customers, markets, and competitors.										
3. Organization emphasizes readiness to meet new challenges.										
4. Organization together is loyalty to the										

Tend to agree	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
organization.										
5. Organization together is commitment to innovation.										
6.There is good teamwork &cooperation in your organization										
7. Empower people and give them freedom to decide and act.										
8. Develop and maintain a performance-driven culture.										

Tend to agree	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**
Communication										
1. Communicated current values and beliefs to employee**.**										
2. Communicates effectively and in a timely manner to employees.										
3.There is a two way communication between employee and employer										
4. There is a two way communication between organization and stakeholder.										

Section 3; Questions on organization performance

1. Have your organization ever been evaluated from outer organization?

□ Yes □ No

2. What is the quality award that your organization has ever received?

□ HA □ HPH □ PMQA □ TQC/TQA □ ISO □ HA&HPH

□ HA&HPH&ISO □OTHER.....

3. Have your organization ever been evaluated from HAI?

□ Yes □ No

4. How long have your organization ever been evaluated from HAI?

□ No passed □ 0- 2 yrs. □ 3-5 yrs. □ 6-8 yrs. □ 9-11 yrs. □ 11 up

5. Which level that your organization received from HAI?

□ no level □ level 1 □ level 2 □ level 3 □ level 3 (1R) □ level 3 (2R)

□ level 3 (3R)

6. How many times your organization ever been re-evaluated from HAI?

□ 0 □ 1 □ 2 □ 3 □ 3 up

7. And what is the score of your organization?

□ 0 -0.99 □ 1-1.99 □ 2 -2.99 □ 3 -3.99 □ 4 -4.99 □ 5

8. How much is the score of your organization in part I hospital management overview?

□ 0 -0.99 □ 1-1.99 □ 2 -2.99 □ 3 -3.99 □ 4 -4.99 □ 5

9. How much is the score of your organization in part II hospital quality systems?

□ 0 -0.99 □ 1-1.99 □ 2 -2.99 □ 3 -3.99 □ 4 -4.99 □ 5

10. How much is the score of your organization in part III customer satisfaction?

□ 0 -0.99 □ 1-1.99 □ 2 -2.99 □ 3 -3.99 □ 4 -4.99 □ 5

APPENDIX B

QUESTIONANNIARE (Thai)

แบบสอบถามการวิจัย (สำหรับผู้บริหาร)
เรื่อง ปัจจัยสำคัญที่ทำให้ประสพความสำเร็จเมื่อนำการจัดการ
คุณภาพมาใช้ในโรงพยาบาลภาครัฐไทย

The Critical Success Factors for Total Quality Management Implementation within Thai Public Hospitals

คำชี้แจงในการตอบแบบสอบถาม

แบบสอบถามนี้มีวัตถุประสงค์ที่จะนำไปใช้เพื่อเป็นข้อมูลในการจัดทำดุษฎีนิพนธ์เรื่อง "ปัจจัยสำคัญที่ทำให้ประสพความสำเร็จเมื่อนำการจัดการคุณภาพมาใช้ในโรงพยาบาลภาครัฐไทย " จัดทำโดย นอ.หญิง จีระวัฒน์ กฤษณพันธ์ รน. นักศึกษาหลักสูตรรัฐประศาสนศาสตรดุษฎีบัณฑิต สาขาเอก การจัดการภาครัฐและเอกชน (หลักสูตรภาษาไทย) รุ่น 6 คณะรัฐประศาสนศาสตร์ สถาบันบัณฑิตพัฒนบริหารศาสตร์

โดยแบบสอบถามนี้แบ่งออกเป็น 3 ส่วน ดังนี้

1) สอบถามข้อมูลทั่วไป
2) สอบถามความคิดเห็นเกี่ยวกับปัจจัยในการบริหารงานคุณภาพที่ส่งผลต่อผลการปฏิบัติงานองค์กร
3) สอบถามผลการปฏิบัติงานองค์กร

ขอความกรุณาอ่านคำถามแต่ละข้อให้ชัดเจน และกรุณาทำแบบสอบถามทุกส่วนและทุกข้อ ผู้วิจัยขอรับรองว่าคำตอบของท่านจะเป็นความลับและไม่สามารถระบุตัวตนของท่านจากการตอบแบบสอบถามได้ และจะรายงานผลในภาพรวมเท่านั้น

Section 1 Demographic Information of Respondent

ส่วนที่ 1 สอบถามข้อมูลทั่วไป

1. Gender เพศ □ ชาย □ หญิง

2. Age อายุ □ 20-29 □ 30-39 □ 40-49 □ 50-59

3. Education ระดับการศึกษา □ ปริญญาตรี □ ปริญญาโท □ ปริญญาเอก

□ อื่นๆ.....

4. How long have you worked in this hospital? ระยะเวลาในการปฏิบัติงานในองค์การ

□ <1 ปี □ 1-5 ปี □ 6-10 ปี □ 11-15 ปี □ 16-20 ปี □ 21ปีขึ้นไป

5. What is your current position in this hospital? ตำแหน่งปัจจุบันในองค์การ

□ ผู้อำนวยการ □ หัวหน้าสำหนักพัฒนาคุณภาพ □ หัวหน้ากลุ่มงาน

□ อื่นๆ.....

6. How long have you worked in current position? ระยะเวลาในการปฏิบัติงานในตำแหน่งปัจจุบัน

□ <1 ปี □ 1-5 ปี □ 6-10 ปี □ 11-15 ปี □ 16-20 ปี □ 21ปีขึ้นไป

7. What is the type of your hospital? ประเภทของโรงพยาบาล

□ รพ.ศูนย์ □ รพ.ขนาด100 เตียงขึ้นไป □ รพ.ขนาด 60 เตียงขึ้นไป

□ รพ.ขนาด 30 เตียงขึ้นไป □ รพ ขนาด 10 เตียง

Section 2 Questions on factor in TQM affect to organization performance

Please answer all items on this answer sheet.

ส่วนที่ 2 สอบถามความคิดเห็นเกี่ยวกับปัจจัยในการบริหารงานคุณภาพที่ส่งผลต่อผลการปฏิบัติงานองค์กร

ระดับความคิดเห็นด้วย จากน้อยไปมาก	1	2	3	4	5	6	7	8	9	10
ด้ารการนำองค์กร :										
1.Set clear directions มีการกำหนดทิศทางที่แน่นอน										
2. Provide our employees with a vision and sense of mission แสดงวิสัยทัศน์ พันธกิจให้พนักงานเข้าใจได้										
2.Set achievable plans, milestones, and goals **มีการวางแผนงาน ได้ชัด ตรงกับเป้าหมายที่วางไว้**										
3. Grow leaders from within. สร้างผู้นำรุ่นใหม่ให้เกิดขึ้นในองค์กร										
4. Stimulate change and improvement. กระตุ้นให้เกิดความเปลี่ยนแปลงและพัฒนา										
ระดับความคิดเห็นด้วย จากน้อยไปมาก										
ด้ารการนำองค์กร :										
5. Assemble a diverse and complementary management team and workforce. สามารถทำให้เกิดความกลมเกลียวในกลุ่มพนักงาน										

ระดับความคิดเห็นด้วย จากน้อยไปมาก	1	2	3	4	5	6	7	8	9	10
ด้านการวางแผนกลยุทธ์ :										
1. Aligns strategy, goals, and objectives with the demands of the external environment and adaptive plans to achieve these. มีการวางกลยุทธ์ เป้าหมาย วัตถุประสงค์ ที่ตอบสนองสิ่งแวดล้อมภายนอก และพร้อมที่จะปรับตัว										
2. Has balance long-term focus and short-term focus. มีการวางแผนกลยุทธ์ ทั้งระยะสั้น ระยะยาว										
3. Has measurable and achievable goals. มีการเก็บข้อมูล หรือ ตัวชี้วัด ได้ตรงกับเป้าหมาย										

ระดับความคิดเห็นด้วย จากน้อยไปมาก	1	2	3	4	5	6	7	8	9	10
4.Emplyees know about organization's strategy คนในองค์กรรู้และเข้าใจกลยุทธ์ขององค์กร										
5. Employees follow the strategic plan. คนในองค์กรดำเนินงานไปตามแผนกลยุทธ์										

ระดับความคิดเห็นด้วย จากน้อยไปมาก	1	2	3	4	5	6	7	8	9	10
ด้านลูกค้า :										
1. Aware of how satisfied internal customers are. ใส่ใจกับความต้องการลูกค้าภายใน										
2. Aware of how satisfied our external customers are. ใส่ใจกับความต้องการลูกค้าภายนอก										
3. Develop special processes for our best customers. มีการพัฒนากระบวนงานเพื่อสิ่งที่ดีที่สุดสำหรับลูกค้า										
4. Has flexible procedures and policies that act as guidelines in meeting customer needs. มีการยืดยุ่นขั้นตอน นโยบาย และเงื่อนไขต่างๆ เพื่อหาจุดที่พอใจกับลูกค้า										
5. Give rewards to employees who take risks to better serve customers. มีการตอบแทนรางวัลให้พนักงานในองค์กรที่ให้บริการลูกค้าดีมากกว่าเดิม										

ระดับความคิดเห็นด้วย จากน้อยไปมาก	1	2	3	4	5	6	7	8	9	10
ด้านพนักงาน :										
1. Has information and knowledge to do job. การให้ข้อมูลข่าวสาร ความรู้ให้กับพนักงานเพื่อการทำงาน										
2. Promote the person who has the best skills and knowledge to do the job. การโปรโมท พนักงานที่มีทักษะ ความรู้ในการทำงานที่ดีเลิศ										
3. Empower employees to use their own judgment to meet customer needs. การตอกย้ำพนักงานด้านการบริการให้ตอบสนองลูกค้า										
4. Concern about employees. ให้ความสำคัญกับพนักงาน										

ระดับความคิดเห็นด้วย จากน้อยไปมาก	1	2	3	4	5	6	7	8	9	10
5. Focus on safety-conscious. เน้นด้านความปลอดภัยให้กับพนักงาน										
ระดับความคิดเห็นด้วย จากน้อยไปมาก										
6. Creates innovative approaches to increase employee effectiveness. พัฒนานวัตกรรมเพื่อเพิ่มประสิทธิภาพพนักงาน										

ระดับความคิดเห็นด้วย จากน้อยไปมาก	1	2	3	4	5	6	7	8	9	10
ด้านการวิเคราห์ ข้อมูลและ เทคโนโลยีสารสนเทศ:										
1. Your organization-wide performance measures match the organization's strategy. การเก็บข้อมูล ตัวชี้วัดต่างๆ ตรงกับแผนกลยุทธ์										
2. Your organization use technology for management. การนำเทคโนโลยีสารสนเทศมาใช้ในการบริหารจัดการ										
3. Develop performance measurement and evaluation พัฒนางานด้านการวัดและการประเมินผลการปฏิบัติงาน										
4. Measure, analyze organization performance for improvement มุ่งเน้น การเก็บตัวชี้วัดผลงาน และมีการนำมาวิเคราะห์ด้วยเพื่อการพัฒนา										
5. Manage by facts มุ่งเน้นการจัดการบนข้อมูลอันเป็นจริง										

ระดับความคิดเห็นด้วย จากน้อยไปมาก	1	2	3	4	5	6	7	8	9	10
ด้ารกระบวนการทำงาน :										
1. Has a clearly defined and well-followed process to resolve disagreements. มีการกำหนดกระบวนการแก้ไขไว้ชัด เมื่อเกิดมีความคิดเห็นไม่ตรงกัน										
ระดับความคิดเห็นด้วย จากน้อยไปมาก										
2. Internal processes are designed to enable us to work together as well as possible. มีการออกแบบประสานการทำงานภายใน ให้ร่วมงานกันได้ง่ายและคล่องตัว										

ระดับความคิดเห็นด้วย จากน้อยไปมาก	1	2	3	4	5	6	7	8	9	10
3. Has cross-functional and cross-organizational collaboration. มีการคร่อมสายงานกันระหว่างหน่วยต่างๆภายในองค์กรได้ดี										
4. Be simplify and flatten the organization มีแบบแผนโครงสร้างองค์กรที่เรียบง่าย										

ระดับความคิดเห็นด้วย จากน้อยไปมาก	1	2	3	4	5	6	7	8	9	10
ด้านการจัดการความรู้:										
1. Organization has the information and knowledge to do job. มีข้อมูล ข่าวสาร ความรู้เพื่อใช้ในการทำงาน										
2. Learning and developing activities have helped to improve performance. มีการเรียนรู้และจัดกิจกรรมพัฒนาต่างๆ เพื่อก่อให้เกิดการปรับปรุงการปฏิบัติงาน										
3. Foster organization-wide sharing of information, boundaries and barriers between and around units. Knowledge and best practices. มีการแบ่งปันความรู้ ระหว่างหน่วยงาน ก่อให้เกิดการทำงานที่เป็นเลิศ										

ระดับความคิดเห็นด้วย จากน้อยไปมาก	1	2	3	4	5	6	7	8	9	10
ด้ารการพัฒนาอย่างต่อเนื่อง ;										
1. In the organization processes are continuously improved. กระบวนการทำงานภายในองค์กรมีการปรับปรุงสม่ำเสมอ										
2. The organization continuously innovates its core competencies การสร้างนวัตกรรมด้านศักยภาพหลักขององค์กรอย่างสม่ำเสมอ										
3. The organization continuously innovates its products, processes and services. มีการสร้างนวัตกรรมด้านผลผลิต กระบวนการ และการบริการอย่างสม่ำเสมอ										

ระดับความคิดเห็นด้วย จากน้อยไปมาก	1	2	3	4	5	6	7	8	9	10
ด้านวัฒนธรรมองค์กร :										
1. Everyone working together cohesively is the most important value. ค่านิยมการทำงานเป็นทีม										
2. Organizational culture is externally focused on our customers, markets, and competitors วัฒนธรรมมุ่งเน้นลูกค้าเป็นสำคัญ										
3. Organization emphasizes readiness to meet new challenges. ค่านิยมด้านความท้าทายใหม่ๆ										
4. Organization together is loyalty to the organization. ค่านิยม จงรักภักดีกับองค์กร										
5. Organization together is commitment to innovation. ค่านิยมให้ตระหนักด้านนวัตกรรม										
7. Empower people and give them freedom to decide and act. ค่านิยม กล้าคิด กล้าตัดสินใจ กล้าทำ										
8. Develop and maintain a performance-driven culture. พัฒนาและยังมีวัฒนธรรมประเมินเป็นตัวขับเคลื่อน										

ระดับความคิดเห็นด้วย จากน้อยไปมาก	1	2	3	4	5	6	7	8	9	10
ด้ารการสื่อสาร:										
1. Communicated current values and beliefs to employee. การสื่อสารค่านิยมความเชื่อขององคืกรให้พนักงานรู้ทั่วกัน										
2. Communicates effectively and in a timely manner to employees. การสื่อสารที่ทันเวลาและมีประสิทธิภาพไปยังพนักงาน										
3.There is a two way communication between employee and employer การสื่อสารสองทางระหว่างนายจ้างกับลูกจ้าง										
4. There is a two way communication between organization and stakeholder. การสื่อสารสองทางระหว่างองค์กรกับผู้มีส่วนได้ส่วยเสีย										

Section 3 Questions about organization performance
ส่วนที่ 3 สอบถามผลการปฏิบัติงานองค์กร

1. Have your organization ever been evaluated from outer organization?
องค์กรท่านเคยได้รับการประเมินคุณภาพจากองค์การภายนอกหรือไม่

□ เคย □ ไม่เคย

2. What is the quality award that your organization has ever received?
องค์กรท่านเคยได้การรับรองคุณภาพจากการประเมิณใดบ้าง

□ HA □ HPH □ PMQA □ TQC/TQA □ ISO
□ HA&HPH □ HA&HPH&ISO □อื่นๆ.....

3. Have your organization ever been evaluated from HAI?
องค์กรท่านเคยผ่านการรับรองจากสถาบันรับรองคุณภาพสถานพยาบาล (สรพ) หรือไม่

□ เคย □ ไม่เคย

4. How long have your organization ever been evaluated from HAI?
องค์กรท่านเคยผ่านการรับรองจากสถาบันรับรองคุณภาพสถานพยาบาล (สรพ) มากี่ปี

□ ไม่เคย □ 0- 2 ปี □ 3-5 ปี □ 6-8 ปี □ 9-11 ปี □ 11 ปี

5. Which level that your organization received from HAI?
หากองค์กรท่านเคยผ่านการรับรองจากสถาบันรับรองคุณภาพสถานพยาบาล (สรพ) ปัจจุบัน องค์กรท่านอยู่ระดับใด

□ ไม่มีขั้น □ ขั้น1 □ ขั้น1หมดอายุ □ ขั้น2 □ ขั้น2หมดอายุ □ ขั้น3
□ ขั้น3หมดอายุ

6. How many times your organization ever been re-evaluated from HAI?
องค์กรท่านผ่านการประเมินซ้ำ มาแล้วกี่ครั้ง

□ 0 □ 1 □ 2 □ 3 □ 3 up

7. And what is the score of your organization at now?
และระดับคะแนนขององค์กรท่านคือเท่าใดในปัจจุบัน

□ 0 -0.99 □ 1-1.99 □ 2 -2.99 □ 3 -3.99 □ 4 -4.99 □ 5

8. How much is the score of your organization in part I organization management**?**
ระดับคะแนนขององค์กรท่านในภาค1การจัดการองค์กรคือเท่าใด

□ 0 -0.99 □ 1-1.99 □ 2 -2.99 □ 3 -3.99 □ 4 -4.99 □ 5

9. How much is the score of your organization in part II key hospital systems**?**
ระดับคะแนนขององค์กรท่านในภาค 2 ระบบโรงพยาบาลคือเท่าใด

□ 0 -0.99 □ 1-1.99 □ 2 -2.99 □ 3 -3.99 □ 4 -4.99 □5

10. How much is the score of your organization in part III patient care process**?**
ระดับคะแนนขององค์กรท่านในภาค 3 กระบวนการดูแลผู้ป่วยคือเท่าใด

□ 0 -0.99 □ 1-1.99 □ 2 -2.99 □ 3 -3.99 □ 4 -4.99 □5

APPENDIX C

CONCEPTUAL FROMEWORK

CONCEPTUAL FRAMEWORK

Prajogo and Sohaj (2003) examined the relationship between total quality management (TQM) and innovation performance and compare the nature of this relationship against quality performance. The empirical data were obtained from a survey of 194 managers in Australian industry encompassing both manufacturing and non-manufacturing sectors. The results suggest that TQM significantly and positively relates to both product quality and product innovation performance although it appears that the magnitude of the relationship is greater against product quality. (Figure C1)

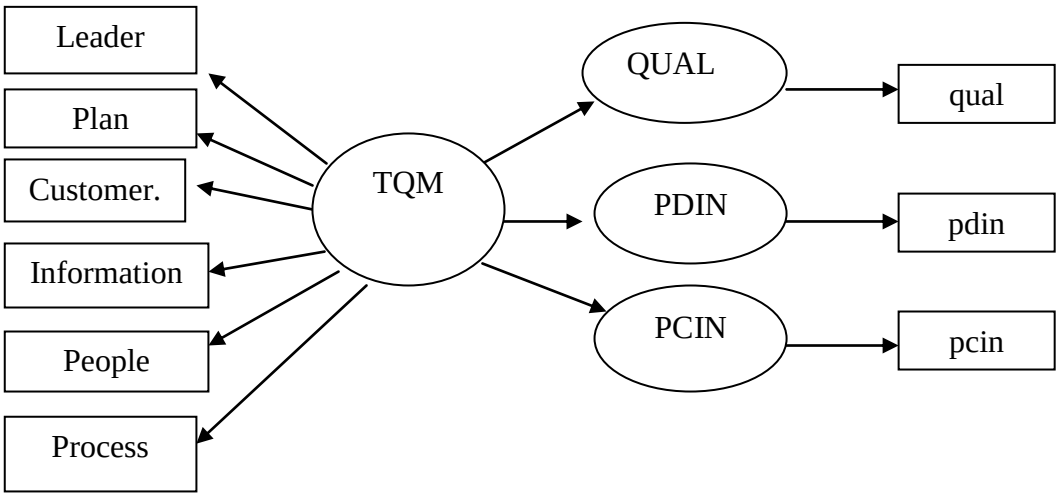

Figure C1 Conceptual Model Proposal

Source: Prajogo & Sohaj, 2003.

Lin et al. (2005) conducted a comparative study between Taiwan and Hong Kong manufacturing companies. The aim was to investigate supply chain quality management and organizational performance using SEM. The results showed that QMPs are significantly correlated with the supplier participation strategy and this influences tangible business results and customer satisfaction. (Figure C2)

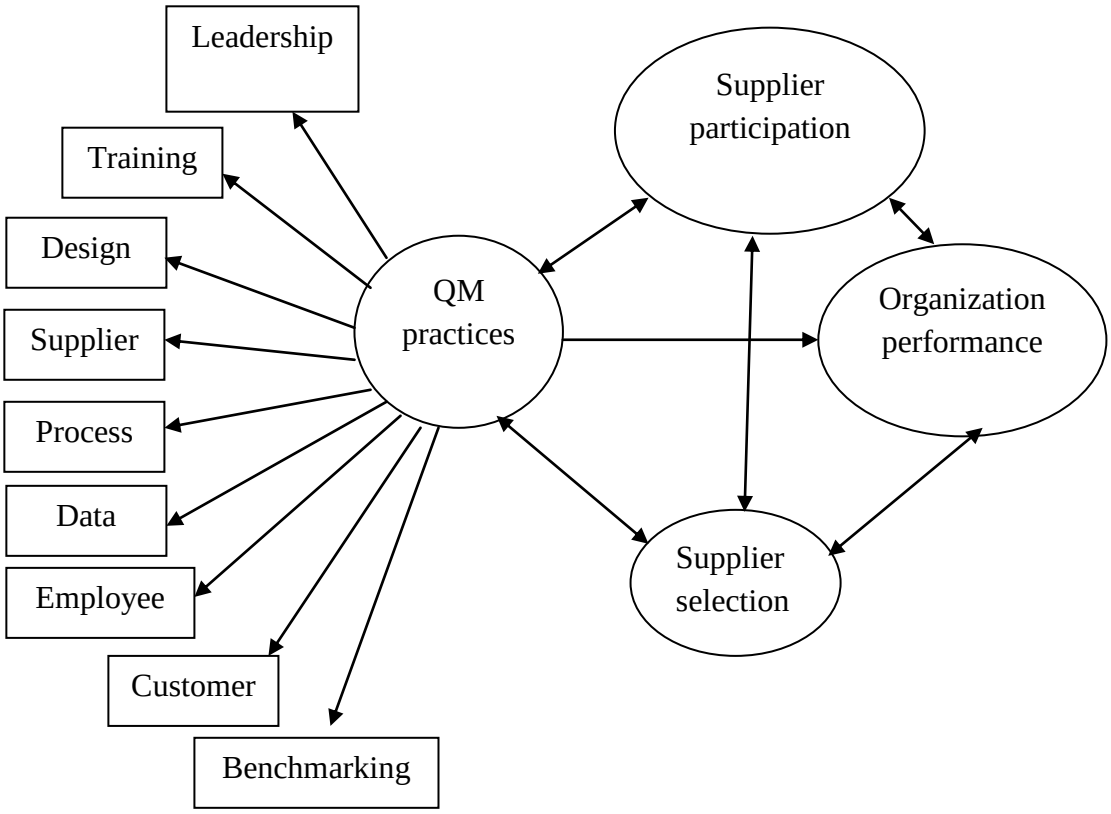

Figure C2 Conceptual Model Proposal
Source: Lin et al., 2005.

Arumugam et al. (2008) explored the relationship between total QMPs and quality performance with special emphasis on ISO 9001:2000 certified manufacturing organizations in Malaysia. The findings revealed that total QMPs were found to be partially correlated with quality performance of the Malaysian ISO 9001:2000 certified manufacturing organizations. It is also found that where customer focus and continual improvement were perceived as dominant total QMPs in quality performance. (Figure C3)

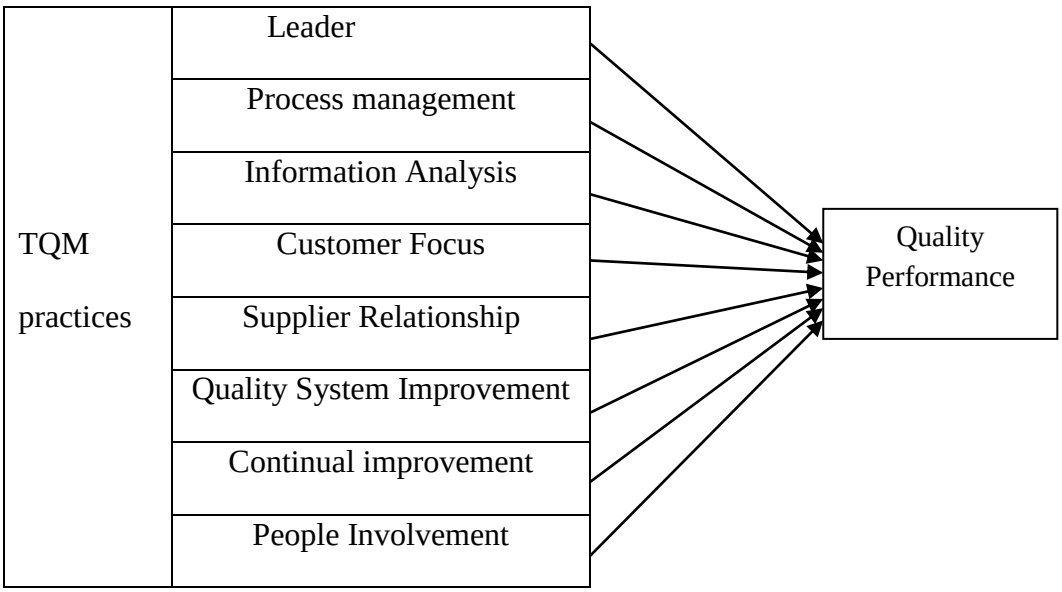

Figure C3 Conceptual Model Proposal

Source: Arumugam et al., 2008.

Zakuan et al. (2010) investigated the relationship between TQM implementation and organizational performance using structured equation modeling. (Figure C4)

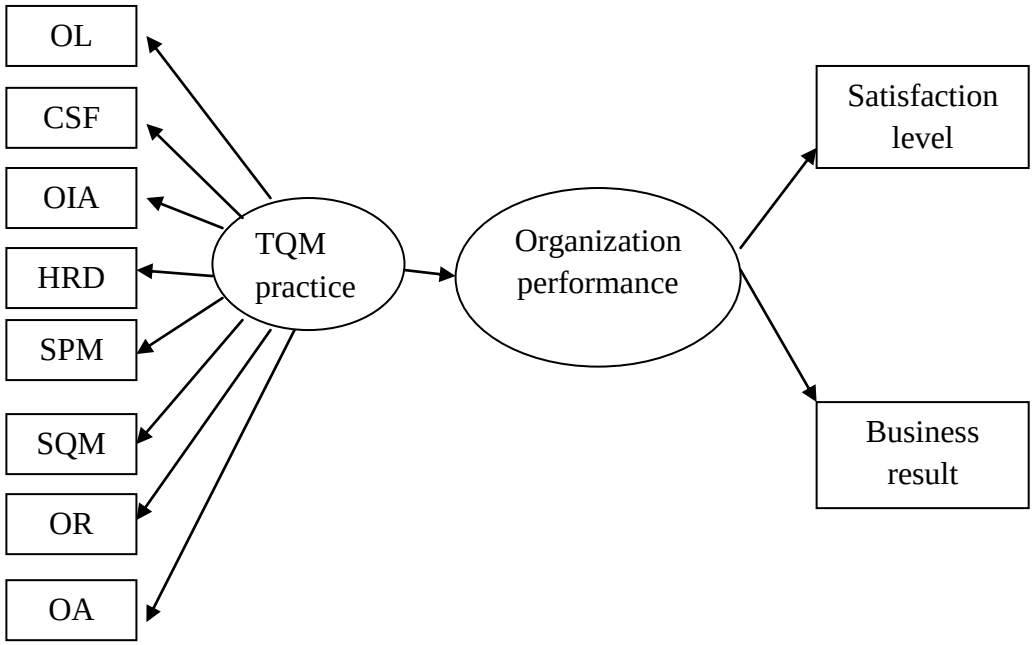

Figure C4 Conceptual Model Proposal

Source: Zakuan et al., 2010.

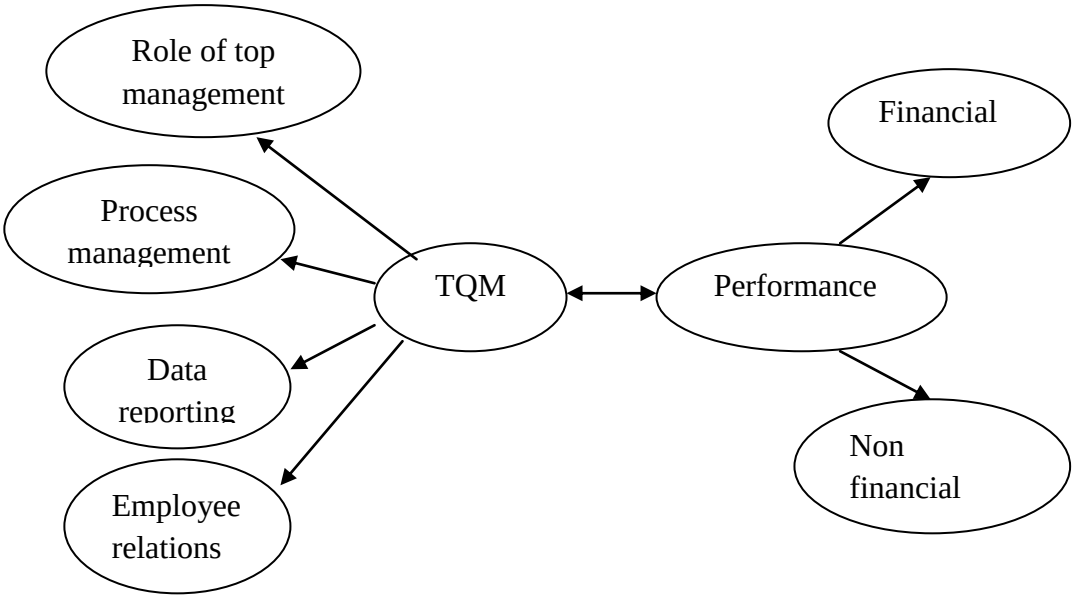

Figure C5 Conceptual Model Proposal

Source: Raju & Lonial, 2002.

Sila developed and proved his model with the empirical data. The results of his study argue for the universal applicability of TQM but also show a few structural model relationships to be different across US and non-US companies. Maybe it is organizational culture, which makes some relationships in the model different (Figure C6).

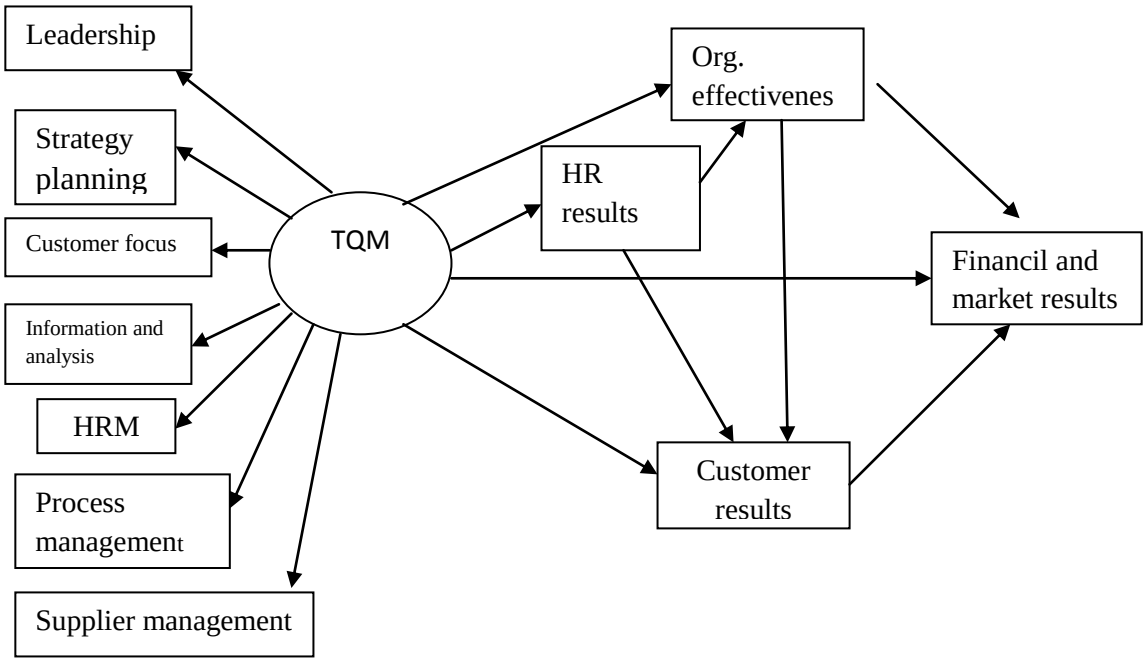

Figure C6 Conceptual Model Proposal

Source: Sila, 2007.

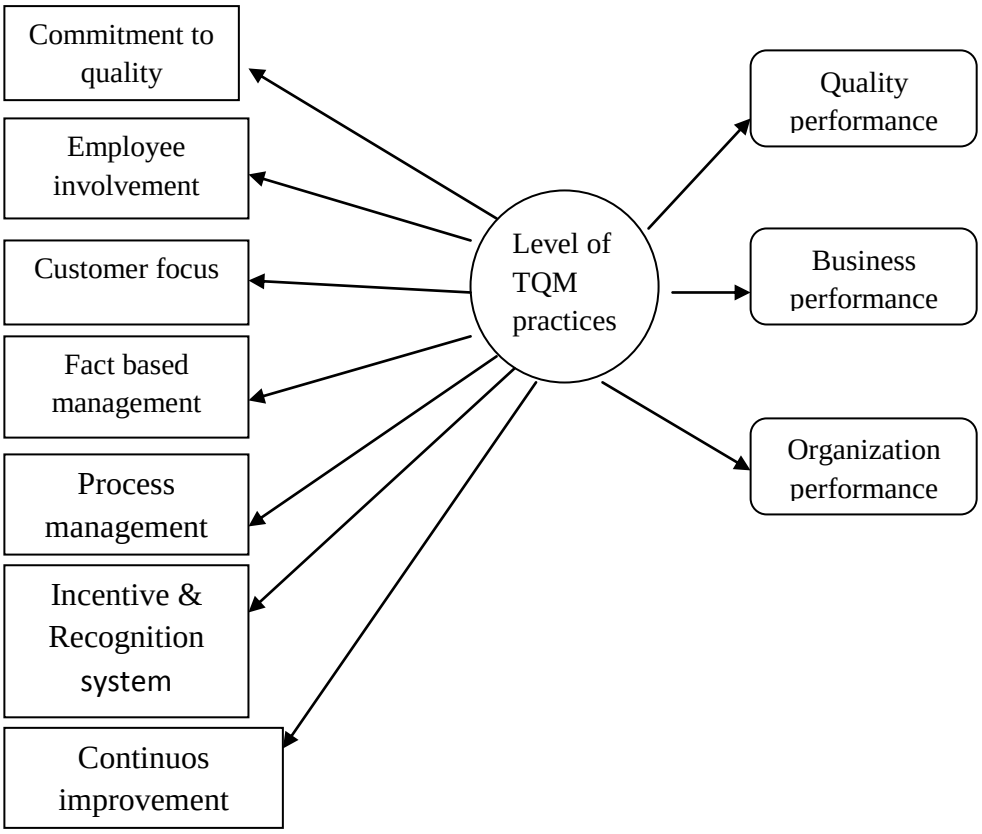

Figure C7 Conceptual framework of TQM Practices and Performance
Source: Hassan et al., 2012.

Sadikoglu and Olcay (2014) investigated impacts of TQM practices on various performance measures as well as the reasons and the barriers of the TQM practices of firms in Turkey and recommended that firms should continue implement TQM with all variables to improve performance. Firms should improve employees' involvement/ commitment/awareness to TQM, enhance firm structure, and provide resources to overcome the barriers that prevent effective implementation of TQM practices. (Figure C8)

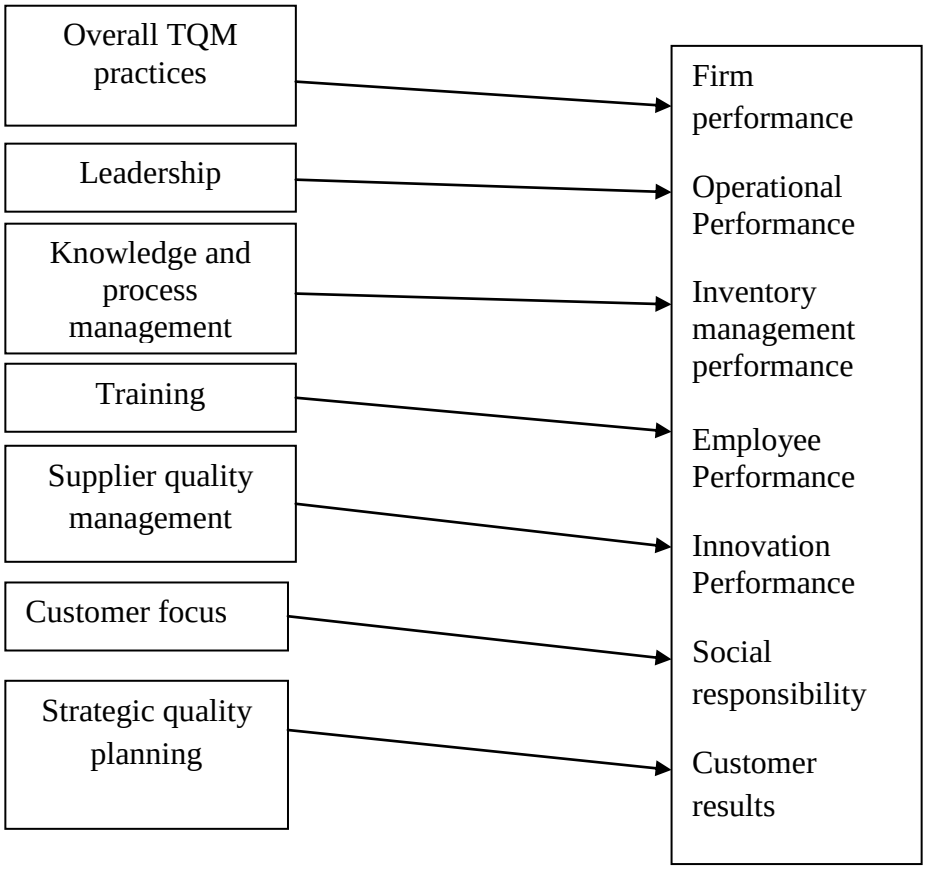

Figure C8 Model of the Relationship between TQM Practices and Performance Measures

Source: Sadikoglu & Olcay, 2014.

ul Hassan et al. (2013) study empirically reveals the influence of the TQM elements comprising leadership, people management, process management, customer focus, information & analysis and strategic planning on the organizational performance in the manufacturing sector of Pakistan. And results using SPSS support the hypotheses that there is a positive relationship between the TQM elements and performance of Pakistani manufacturing firms (Figure C9).

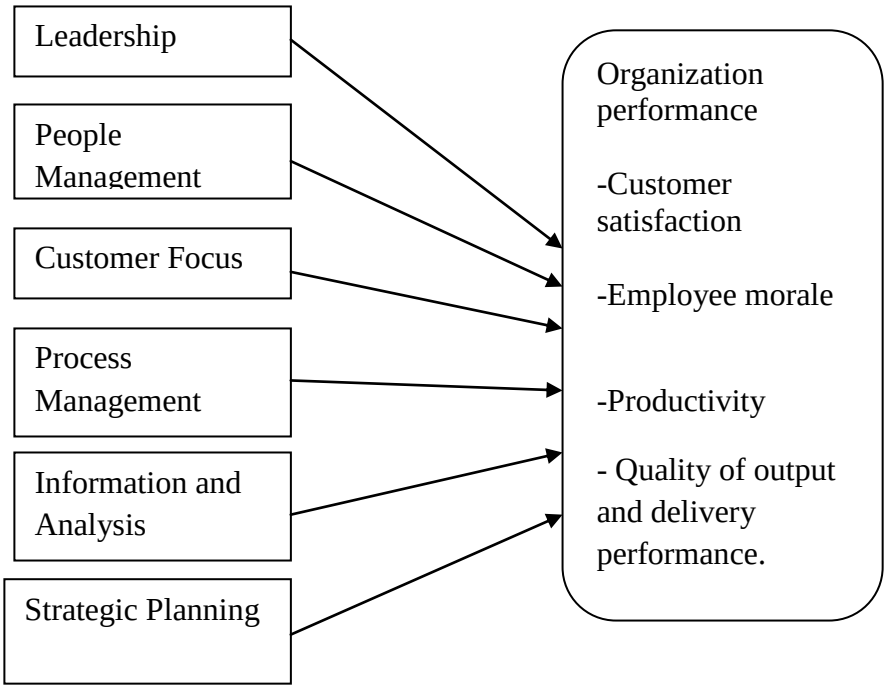

Figure C9 Model of the Relationship between TQM Elements and Performance Measures

Source: ul Hassan et al., 2013.

Kamyar Golmohammadi (2014) Find a logical relationship between total quality management (TQM), innovation and customer satisfaction (Figure C10)

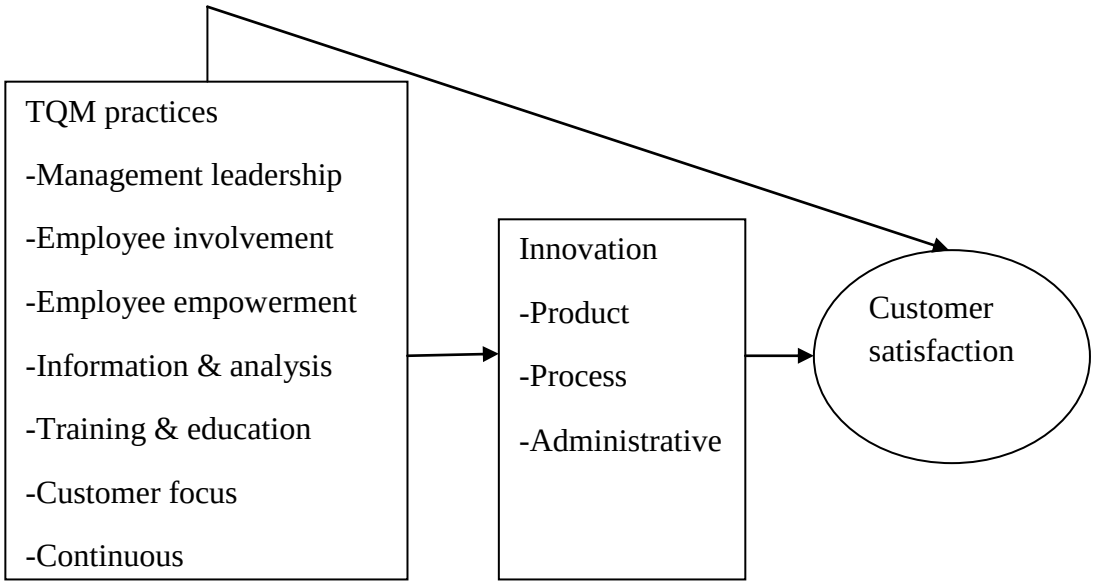

Figure C10 Find a Logical Relationship between Total Quality Management (TQM), Innovation and Customer Satisfaction

Source: Kamyar Golmohammadi, 2014.

BIOGRAPHY

NAME	Captain Jerawat Krisanaphan RTN.
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