DETERMINANTS OF TOTAL QUALITY MANAGEMENT IN THE SAUDI PUBLIC HOSPITALS: THE MODERATING IMPACT OF KNOWLEDGE MANAGEMENT

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ABSTRACT

Public hospitals in Saudi Arabia were undergoing tremendous pressure from the government and also public to improve their level of quality services. Hence, this study is undertaken as an effort to examine the factors that influence total quality management (TQM) practices in Saudi Arabia public hospitals. It has also aimed at examining the moderating effect of knowledge management on the relationship between the independent variables of information technology, employee capacity, employee commitment, and the dependent variable of total quality management practices. This study was motivated by the inconsistency of findings reported in the literature regarding the above mentioned relationship. The inconsistencies have led to the emergence of a new research stream that recommends the investigation of moderating variables that could explain the relationships. Therefore, in the present study, different theories were employed including the contingency theory and the resource-based view to providing an insight into the relationships. The study made use of a survey questionnaire randomly distributed to 259 public hospitals in the Saudi Arabia, of which 154 were found suitable for analysis. Statistical Package for Social Sciences (SPSS) was used for the descriptive part of the analysis while Partial Least Squares-Structural Equation Modelling (PLS-SEM) was employed to assess the outer measurement model and the relationships between the variables. The findings of the study revealed that employees' capacity and information technology were significantly related to TQM practices. The findings also revealed that knowledge management moderated the relationship between employee commitment and TQM while it did not moderate the relationship between employee capacity and information technology and TQM. The study has managerial, policy and theoretical implications along with the recommendations for future research.

Keywords: total quality management practice, knowledge management, information technology, employee capacity, employee commitment

ABSTRAK

Hospital awam di Arab Saudi sedang mengalami tekanan yang kuat dari kerajaan dan orang awam untuk mempertingkatkan tahap kualiti perkhidmatan yang diberikan. Justeru itu, kajian ini dijalankan sebagai usaha untuk mengkaji apakah factor-faktor yang mempengaruhi amalan pengurusan kualiti menyeluruh (TQM) dalam hospital awam di Arab Saudi. Ia juga bertujuan untuk meneliti kesan penyederhana pengurusan pengetahuan terhadap hubungan antara pemboleh ubah bebas teknologi maklumat, keupayaan pekerja, komitmen pekerja, dan pemboleh ubah bersandar amalan pengurusan kualiti menyeluruh. Kajian ini didorong oleh ketidakselarasan penemuan yang dilaporkan dalam karya lalu mengenai hubungan antara pemboleh ubah tersebut. Ketidaktekalan dapatan lalu menyebabkan kemunculan aliran penyelidikan baharu yang mencadangkan agar pemboleh ubah penyederhana yang boleh menjelaskan hubungan antara pemboleh ubah diambil kira. Oleh itu, dalam kajian ini, teori yang berbeza-beza telah digunakan termasuk teori kontingensi dan pandangan berasaskan sumber untuk memberikan kefahaman mengenai hubungan berkenaan. Kajian ini menggunakan soal kaji selidik yang telah diedarkan secara rawak kepada 259 hospital awam di Arab Saudi, yang mana 154 telah didapati sesuai untuk tujuan analisis. Pakej Statistik untuk Sains Sosial (SPSS) digunakan untuk sebahagian deskriptif analisis manakala Partial Least Squares Structural Equation Modelling (PLS-SEM) telah digunakan untuk menilai model pengukuran luaran dan hubungan antara pemboleh ubah. Dapatan kajian menunjukkan kapasiti pekerja dan teknologi maklumat mempunyai hubungan yang signifikan dengan TQM. Dapatan kajian juga menunjukkan bahawa pengurusan pengetahuan menyederhana hubungan antara komitmen pekerja dan TQM. Walau bagaimanapun, ia tidak menyederhana hubungan antara kapasiti pekerja dan teknologi maklumat dengan TQM. Kajian ini mempunyai implikasi pengurusan, dasar dan teori. Kajian ini turut memberikan cadangan untuk kajian masa hadapan.

Kata kunci: amalan pengurusan kualiti menyeluruh, pengurusan pengetahuan, teknologi maklumat, keupayaan pekerja, komitmen pekerja

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LIST OF ABBREVIATIONS

AMOS	Analysis of Moment Structures
ASUU	Academic Staff Union of Universities
AVE	Average Variance Extracted
CLEEN	Centre for Law Enforcement Education
CMV	Common Method Variance
CWB	Counterproductive Work Behaviour
EFCC	Economic and Financial Crimes Commission
FA	Factor Analysis
GoF	Goodness of Fit
IT	Information Technologies
KM	Knowledge Management
MOH	Ministry of Health
PCA	Principal Component Analysis
PhD	Doctor of Philosophy
PIN	Perceived Injunctive Norms
PLS	Partial Least Squares
Q2	Construct Crossvalidated Redundancy
RBV	Resource Based View
R2	R-squared values
SEM	Structural Equation Modelling
SET	Self Efficacy Theory

SMEs	Subject Matter Experts
SPSS	Statistical Package for the Social Sciences
SRE	Self Regulatory Efficacy
TQM	Total Quality Management
ρc	Composite Reliability

CHAPTER ONE

INTRODUCTION

1.1 Introduction

The present research attempts to investigate the factors that influence the provision of total quality management in the public healthcare sector in Saudi Arabia. The influence of the antecedent factors was investigated through the moderating effect of knowledge management. The chapter is constructed in a way that would respond to achieving the primary goal of the current research. The chapter begins with the background of the research in which the conditions and circumstances that lead to conducting the research are presented. The chapter then introduces an overview about the construct of total quality management in the healthcare sector. A number of factors that have been hypothesized to influence the the implementation of total quality management are then presented. The chapter moves to the statement of the problem of the current research in which some problems and issues related to the situation in the Saudi public sector are presented. The chapter also proceeds to present the two important sections of research objectives and research questions. After that, the chapter presents the significance section of the study and it is noteworthy to state that this significance section is divided into two parts, namely theoretical significance and practical significance. The chapter is summed up with a section that includes the operational definitions of the constructs that will were investigated in the present research together with the way the present research is organised.

1.2 Background of the Study

Globally, the healthcare sector which is mainly represented by hospitals is regarded as one of the most critical sectors g that touches the lives of people (Aladham 2004). In addition to that, hospitals constitute the largest expenditure category in the budget of countries and therefore they are often targeted for reform and improvement in term of the quality of their services that are delivered and provided to people (Santos et al., 2008).

Worldwide, public health sectors have been reported to experience increasingly low trust from the perspective of patients with respect to the quality of healthcare that they receive. Nowadays, individuals who wish to get healthcare services of high quality tend to prefer private hospitals or they even travel abroad (Karassavidou, Glaveli & Papadopoulos, 2008). This is why hospitals from the public sector are undergoing tremendous pressure from the governments and also from the people to work harder on improving the quality of their services and compete effectively with other hospitals from the private sector. Furthermore, many of the previous studies reported that public healthcare sector was perceived to have lower service quality as compared to the service quality provided by the private healthcare sector (Karassavidou, Glaveli & Papadopoulos, 2008).

Researchers and practitioners have been attempting to provide approaches and methods that would improve the quality of services provided to customers (patients), particularly the quality of services provided by the public hospitals worldwide. This

is because a good number of researchers reported that public hospitals, particularly those in emerging and developing countries, are perceived to have low quality and trust compared to the quality of private hospitals even public hospitals are funded by the governments. In this context, Young and Sullivan (2005), in their study on organizational factors and its impact on hospital quality services, found that funded health services were frequently of poor quality. The study found that the services provided by private hospitals were better than the services provided by public hospitals. The authors attributed this to the fact that the culture of the private hospitals is more competitive while that of government funded hospitals is otherwise..

Furthermore, Patel (2008) argues that despite the fact that so much money is being spent worldwide on healthcare; most of this healthcare is seen to be "ineffective, inefficient and inadequate". The researcher goes on to say that there is, therefore, an urgent necessity to rethink about the policies and procedures that are related to healthcare service delivery. The researcher also argues that institutions that are able to deliver higher level of service and that are seen with commitment to constantly improve these services will be the ones that will eventually secure more competitive edge in a highly competitive market. Patel (2008) believes that total quality management, which places on improved customer satisfaction, is the tool that offers better quality services and in turn offers prospect of great market share and profitability. Thus, it is important that institution working in the healthcare sector,

particularly government healthcare institutions should work on their total quality management practices.

Importantly, the construct of Total quality management (TQM) has emerged in the literature as an influential factor to improve the overall quality of services provided by hospitals considering its well established link with the performance of these hospitals. The construct has emerged with different but interrelated definitions considering the consensus among researchers and practitioners that it is not feasible to present a single definition for TQM (Santos-Vijande & Alvarez-Gonzalez, 2007). Furthermore and when it was first researched and reviewed, the construct of TQM has been broadly reported to be positively associated with organisational performance of various organisations.

In defining TQM, Cua, McKone and Schroeder (2001) describe the construct as an integrative philosophy that is related to management which is concerned with the constant improvement of the quality of products and services. The researchers further elaborate that total quality management is grounded on the basic notion that the quality, be it of products or services, is the responsibility of all individuals that are involved in its creation or consumption. This would in turn requires that all parties of management, workforce, suppliers, and customers are involved in ensuring that expectations of customers are met or even exceeded. Since employees are the most important elements in creating services and products, their roles are seen as integral and therefore it is highly essential that managements provide constant

improvements to their employees as suggested by Lewis, Pun and Lall (2006). This had been supported by the views of previous researchers such as Frehr (1997) who views TQM as an overall philosophy and a strategic commitment adopted by managements of various types of organisations to constantly improve their quality eir in an attempt to meet the needs of existing and potential customers.

As far as healthcare sector is concerned, Hamidi and Zamanparvar (2008) state that the World Health Organisation (WHO) supported the introduction of TQM into health care systems. The researchers further elaborate that the construct of TQM has been transferred from developed to developing countries taking into account the fact that health care services have been influenced by globalisation. In order to catch up with the developed countries, developing countries have adopted accreditation standards in health care in an attempt to work towards standardising health services on a global level (Segouin, 2005). This step also aimed at providing the citizens of these developing countries with high quality health care services that are similar to those provided to the citizens of developed countries. In response to this, the government of Saudi Arabia has given top priority to TQM in all the fields in general and in the in health care sector in particular.

Baird, Jia and Reeve (2011) described TQM as a cooperative form of doing business which relied on the talents and capabilities of both labour and management to improve quality and productivity through continuous efforts of teams. The researchers further elaborate that total quality management requires the cooperation

of all parties in the organisation so that effective implementation is achieved and that many factors influence the provision of the construct.

The government of Saudi Arabia has been putting enormous efforts to reform the Saudi public hospitals and solid advancements have taken place (Alkhamis, 2011). In this context, Almalki, Fitzgerald and Clark (2011) argued that health care services in Saudi Arabia have been given a high priority by the Saudi government. The authors go on to say that during the past few decades, health and health services have improved greatly in terms of quantity and quality. In addition, in order to meet the challenges of the Saudi healthcare system and to improve the quality of health care services which in turn enhances performance, the Saudi Ministry of Health (MOH) has set a national strategy for health care services that focuses on diversifying funding resources, developing information systems, developing the human workforce, and activating the supervision and monitoring role of the MOH over health services (Almalki et al., 2011). However and despite the relatively high expenditure on health (5% of GDP) (Health Statistics Book, 2008) and enormous efforts by the Saudi government to enhance the quality of services provided by Saudi public hospitals, Saudis still perceive their public healthcare sector quality to be poor and they prefer to go either go to neighbouring countries like Jordan, Egypt or Western countries in the USA or Europe given that Saudis are regarded among the wealthiest in the Middle East region (Algarousha, 2006). The reasons behind this poor performance of the Saudi public hospitals are not fully understood and this lack of understanding could be attributed to the lack of research in the area. The present

study hopes to provide answers to such questions by investigating a very important factor that has been hypothesised to influence the performance of organisations in general and the public health sector in particular, namely total quality management (TQM).

In a recent study about TQM in the Saudi public sector, Balghonaim (2010) addressed several issues that are related to the integration and adoption of TQM practices in a number of public hospitals in the healthcare sector in Saudi Arabia. Such issues include the frequent changes that are taking place in leadership and also the lack of efficiency in the information and finance systems. Other issues also include different customers with various needs, the lack of efficiency in training which leads to poor achievement of the professionals involved in the healthcare sectors. Similar issues were also identified long before Balghonaim's (2010) research. However, it should be kept in mind here that Balghonaim's (2010) work addressed the Saudi public sector in general and did not focus on one particular sector. The current work, however, focuses on the healthcare public sector represented by the public hospitals in Saudi Arabia.

More importantly, the Saudi public healthcare sector has been encountering a number of difficulties and challenges in terms of the quality of the services provided to the public. In this regard, a report done by RNCOS (2009) addressed some of these challenges encountered by the Saudi public healthcare sector stating that although the Saudi healthcare market has been among the lucrative markets, there

still seems to be a number of obstacles to the quality of services provided by this sector. Among these obstacles is the lack of human resources that are essentially needed for providing services to people. Specifically, the report states that nearly 80% of physicians and nurses who work in the Saudi public hospitals come from foreign countries and this has its negative impact on turnover rate. The report also addressed some other obstacles that negatively affect the quality of services provided to the general public which is the lack of effective and skilled workers. Issues to do with the lack of skilled workers in the Saudi public healthcare sector have also been addressed by Al-Kelya and Al-Saggabi (2012) who argue that employees' capacity in the Saudi public healthcare sector should be the focus of many future studies as Saudi employees working in the healthcare sector lack the capacity to provide quality services to patients. The RNCOS Report (2009) concluded with a significant statement by saying that despite the enormous expenditure and efforts put in place by the Saudi government in the public healthcare sector, there seems to be a problem with the implementation of many of the recommendations. Such statements do need further investigations considering that this area lacks empirical research and thus, the present research aims at investigating the factors that influence the provision of total quality management practices being a very critical construct in ensuring a better performance healthcare organisations. The following section addresses the statement of the problem in the current research.

1.3 Problem Statement

Miller, Sumner and Deane (2009) argue that many studies have been conducted to investigate the TQM in different industries. However, the researchers go on to say that limited research attempted to examine the impact of the factors that may have influence on TQM practices. This is why this study attempts to fill the gap in by examining a number of influential factors that have been hypothesised to influence TQM practices and implementation in different industries and in healthcare in particular.. One of the main factors that have been addressed to influence TQM practices is the construct of information technology (Adeoti, 2011, Dewhurst et al, 2003; Mane et al, 2011; Philip & Mckewon, 2004). While the IT has been established as a precursor of TQM as a number of these scholars agreed that it is the centre nerve of effective TQM management/implementation especially in the context of public hospitals like Saudi Arabia (Bolatan, Gozlu Alpkan & Zaim, 2016; Kumar et al., 2011; Mane et al., 2011; Martínez-Lorente, Sánchez-Rodríguez, Dewhurst, 2004), there seems some disagreement as other scholars found that IT has no positive and significant relationship with TQM implementation (Mahmood & Mann, 1993; Swamidass & Kothas, 1998; Willcocks & Lester, 1997). Asides, the nature of causal relationship between TQM and IT is controversial. Several studies believe that IT is a component/tool of TQM (Ahire et al., 1996; Siam, Alkhateb & Al-Waqqad, 2012; Tari, 2005), while some argue that IT causes/enables TQM (e.g., Daghfous & Barkhi, 2009; Dewhurst et al., 2003; Khanam, Talib & Siddiqui, 2015). The inconsistencies and controversies surrounding the relationship between the two constructs call for further investigations. In this regard, recommendations to include

Information Technology as a determinant factor of TQM was given by Silaf and Ebrahimpour (2003) who conducted a study that attempted to examine and compare some of the critical factors that affect total quality management practices across countries. Thus, realising the critical role that information technology plays in the effective implementation of TQM practices, the present study attempts to examine the impact of information technology on TQM practices in Saudi Arabia. This is important in the Saudi healthcare sector taking into account that while the Saudi government allocates huge budget for latest technologies and machines in the healthcare sector, the use of this technology has been reported to be very low than what the government expected and promoted and this would negatively influence the provision of quality in the hospitals (Alharbi, 2014).

Among the factors that have been reported to influence the implementation of TQM practices is the concept of Employees' capacity which is related to the availability of highly skilled workers in an organisation. In this regard, Argote (2000) argues that it is highly essential for organisations in general and for hospitals in particular to have doctors, nurses, and other staff with good skills as these skills would in turn help hospitals to achieve higher levels of service quality. In supporting this view, Brown and Duguid (2003) also suggest that it is imperative that hospitals recruit and retain top-level doctors, nurses, and other administrative staff. However, this does not seem to be the case in the Saudi public hospitals, considering that the good and highly skilled workers are normally the foreigners who prefer to work in the private sector where they get higher wages and more incentives. Despite the importance of

employee capacity towards the implementation of TQM, very limited studies have empirically examined its impact (e.g., Mehra & Coleman, 2016; Rahman, 2001; Talib et al., 2011) with such fewer studies not reaching a consensus on the relationship between employee capacity and TQM. In line with the argument of Talib et al. (2011) employee capacity/empowerment is statistically important in the implementation of TQM, however other scholars found that employee capacity merely plays significant role in the implementation of TQM since the role and commitment of top management is more sancrosanct than mere employee capacity (Mendes, 2012; Oakland, 2011; Oruma et al., 2014). This discord among scholars calls for further investigation of employee capacity as a determinant of TQM implementation. A recommendation to include employees' capacity as a determinant of effective implementation of TQM practices was given by Mukhalalati (2009) who conducted the study on TQM in the Qatari Healthcare Sector but did not consider its impact especially in the health sector of developing countries like KSA. Thus, this study attempts to respond to this recommendation by examining the construct of capacity in relation to TQM in the Saudi public hospitals.

Furthermore, another important factor that has been hypothesised to influence an effective implementation of TQM practices is the construct of employees' commitment. Committed employees normally identify themselves with the organisation in which they work and they also accept the goals and the values of the organisation as their own goals and values (Porter et al., 2004). Yiing and Kamarul (2008) believe that committed employees contribute a great deal to the achievement

of the objectives of the organisation leading to better organisational performance. As far as the public sector in Saudi Arabia is concerned, native Saudi employees are characterised by lower organisational commitment as compared to foreign workers. In this context, Al-Kibis et al. (2007) stated that one fourth of Saudi employees are often absent at work and this leads to high turnover. Notably however, the gap in literature as experience has shown is that majority of TQM literature (e.g. Aquilani et al., 2016; Das et al., 2006; Tari, 2005; Oakland, 2011; Oruma, Mironga & Muma, 2014; Voon & Abdullah, 2014) have only concentrated on Top Management commitment while little or no attention has been paid to the commitment of rank and file employee that constitutes large workforce segment of any organization. Asides, the findings of these previous studies have not been consistent. While commitment has been reported to be positively and significantly related to TQM implementation (e.g., Mendes, 2012; Oruma et al., 2014), a number of other scholars found and argued that commitment is not critically/statistically important in the implementation of TQM. Additionally, the causal relationship between commitment and TQM has continued to continue to be a point of controversy. A number of scholars argued that commitment is a component of TQM and should be treated as a critical success factor (Crosby, 1997; Pereira-Moliner et al 2012). However, other researchers treated commitment as a precursor/antecedent of TQM implementation (Oruma et al., 2014). In this regard, a recommendation to include employees' commitment as a factor that influences an effective implementation of TQM practices was given by Ali, Mahata and Zairi (2010) recommended that future research examines the construct of commitment in relation to TQM. Thus, this study attempts to respond to

this recommendation by examining the level of commitment the staff working in the Saudi public hospitals towards the implementation of TQM practices.

One of the gaps in the previous research on the concept of TQM in healthcare is that most of this prior research examined the influence of some determinants or antecedents on TQM. Despite the idea that this previous researches may have reported significant results, there still seems to be a lack of holistic understanding of TQM in the healthcare sector in general and in the context of Saudi Arabia in particular. Specifically, most of the previous researches followed the typical conceptual framework whereby a number of variables influence TQM without considering the interference of some other factors that may moderate this influence. In this context, limited research have attempted to study the moderating interference of some other variables that could influence the relationships between the antecedent factors and that of TQM practices (Sadikog & Zehir, 2010) except for limited research studies such as that of Alharbi (2012) who attempted to examine the moderating impact of organisational culture on the relationships between TQM and its antecedent factors. However, Alharbi (2012) recommended that future studies should examine the potential impact of some other moderating variables. Thus, this study attempts to respond to this recommendation and in turn fills this gap in the literature by examining the impact of a moderating variable of Knowledge Management (KM).

Knowledge Management can be defined as the process by which knowledge is gathered, managed and shared among employees throughout the organisation. The idea of sharing knowledge among the employees in the organisation is regarded essential as it enhances existing processes while it also introduces more effective and productive business processes. In the context of this study, knowledge management is argued to influence the relationships between the independent variables of information technologies, employees' commitment, and employees' capacity and the dependent variable of TQM. The reason why KM is selected to constitute the moderating variable in this study is the belief in the construct's ability to strengthen these relationships. For example, if knowledge is managed and distributed effectively among the different department in the hospitals, such distribution of knowledge would in turn enhance the utilisation of information technologies considering that such technologies will constitute the tools by which knowledge is distributed. Apart from that, when knowledge is distributed, this would also improve the capacity of employees. Finally, when knowledge is distributed effectively among departments, employees would sense the trust that is given to them by the organisation and this would in turn have a positive influence on their commitment. All these constitute the independent variables in this study and this is why it is believed that KM will have a moderating influence on their relationships with TQM. A recommendation to include the effects of contextual factors as a moderating variable that moderates the relationship between the independent variables and the dependent variable of TQM practices was given by Sadikog and Zehir (2010). Thus, the present study attempts to fill in this gap in the literature by examining the

moderating influence that KM may play in the relationship between the antecedent factors and TQM practices.

Given the importance of KM therefore, and considering the fact that, the results of previous studies on the relationship between TQM as a dependent variable and its determinants (Information Technology, Employees capacity and Employees commitment) have not been consistent, it therefore indicates that research in this domain is inconclusive and requires further investigation. In line with the suggestion of Baron and Kenny (1986), a moderator strengthens the relationship between independent and dependent variable since it is a contingent construct (Sekaran, 2003). For this study, knowledge management (Sadikog & Zehir, 2010) is used as a moderator as past studies have largely ignored its relevance in strengthening the relationship between TQM and its antecedents. For instance, several studies have used knowledge management either as independent variable (Mc Adam & eonard, 2001;Yu-Yuan Hung et al, 2010), mediating variable (e.g., Chuang, Chen & Tsai, 2015) or dependent variable (Ooi, 2014; Yazdani, Shahim & Kheradmandnia, 2015) while its moderating effect has not been considered. Additionally, while previous studies have used series of moderators such as external environment (e.g., Jabeen, 2014), coworker support and organizational support (e.g., Joiner, 2007), entrepreneurial organizational culture (e.g. Al-Dhaafri, Al-Siwidi & Yusoff, 2016), the influence of KM as a moderator has been largely ignored thereby calling for further investigation through which inconsistent relationship between TQM and its antecedents can be attenuated. Inculcating such contingent variables into existing

relationship will enable researchers to resolve the conflicts of results and holistically predict the factors that can be used to increase the understanding of the researchers .This study therefore fills this gap by employing knowledge management as a moderator between TQM and its determinants. This is in line with the positions of Douglas and Judge (2001) and Ehigie and McAndrew (2005) who suggested that future studies should consider some other organizational variables that will ensure that TQM and its determinants is well elucidated. Furthermore, this study introduced knowledge management as a moderator instead of mediators based on the justification that the relationship between TQM and its antecedents need to be strengthened as suggested by a number of scholars (e.g., Al-Swidi & Mahmood, 2012; Fening, 2012).

In addition, majority of the research studies conducted on TQM were done in Western countries while limited research seems to have been done in emerging and developing countries. Furthermore, limited research seems to have been conducted in a Middle Eastern context in general and Saudi Arabia in particular about TQM practices and its determinants in the healthcare sector. What this means is that the understanding of TQM and its influential factors seem not clear and need further investigation (Al-Harbi, 2014). This lack of deep understanding of these factors might lead to the adoption of inaccurate practices that would not achieve the hoped objectives of the public hospitals in the country. Consequently, a contextualized research is needed in Saudi Arabia as to understand the case in Saudi Arabia. Thus, the present research attempts to provide a cross-cultural understanding of TQM and

the factors that influence its provision by conducting a study in an emerging country context, namely Saudi Arabia.

1.4 Research Questions

The primary goal of the present research is to investigate the factors that influence TQM practices in the public healthcare sector in Saudi Arabia represented by the Saudi public hospitals. In addition to that, the influence of the antecedent factors on TQM practices was investigated through the moderating effect of knowledge management. To achieve this goal, this study attempts to answer the following research questions.

1. To what extent does ***Information Technology*** affect TQM practices in the public hospitals in Saudi Arabia?

2. Does ***Employees' Capacity*** affect TQM practices in the public hospitals in Saudi Arabia?

3. To what extent does ***Employees' Commitment*** affect TQM practices in the public hospitals in Saudi Arabia?

4. To what extent does ***Knowledge Management*** moderate the relationships between the independent variables of Information Technology, Employees'

Capacity, and Employees' Commitment, and the dependent variable of TQM practices in the public hospitals in Saudi Arabia?

1.5 Research Objectives

In line with the previous research questions, the present research attempts to achieve the following objectives.

1. To examine the extent to which ***Information Technology*** affects TQM practices in the public hospitals in Saudi Arabia.

2. To find out whether ***Employees' Capacity*** affects TQM practices in the public hospitals in Saudi Arabia.

3. To investigate the extent to which ***Employees' Commitment*** affects TQM practices in the public hospitals in Saudi Arabia.

4. To examine the moderating impact of ***Knowledge Management*** on the relationships between the independent variables of Information Technology, Employees' Capacity, and Employees' Commitment, and the dependent variable of TQM practices in the Saudi public hospitals.

1.6 Significance of the Study

The present research has two types of significance: theoretical significance which is related to the contribution this study is expected to offer to the body of research on TQM practices and their influential factors while the practical significance is related to the useful recommendations that will be provided to the Saudi public hospitals so that they can act upon these recommendations and in turn enhance the provision of their TQM practices. The following sections address the practical and theoretical significance of the present research.

1.6.1 Theoretical Significance

The theoretical framework designed for this study is grounded on a number of gaps that appeared in the previous work on total quality management and the factors that influence its implementation, particularly in the healthcare sector. In this study, these gaps represent a number of factors that include the use of information technologies, employees' capacity, and employees' commitment, and these factors constitute the independent variables in this study. By examining the way these antecedent factors influence total quality management in the healthcare sector, the current study gains part of its theoretical significance.

Apart from that, it was mentioned earlier in this research that most of the previous research on TQM in general and in the healthcare sector in particular aimed at examining the influence of a number of determinants on the implementation of TQM practices while limited research attempted to examine the influence of some

moderating factors on the relationship between the antecedent determinants and TQM practices (Sadikog & Zehir, 2010). In other words, most of the previous research studies on TQM in the healthcare sector utilised the typical framework in which the impact of a number of factors on TQM practices is investigated. The current study, however, takes a step further by examining the moderating impact of an influential factor on the relationship between the antecedent factors and TQM practices. Specifically, the study investigates the moderating impact of knowledge management (KM) on the relationship between the independent variables of information technologies, employees' capacity, and employees' commitment from one side and the dependent variable of TQM practices from the other. Thus, by incorporating a moderating variable in this study, this contributes to the body of knowledge in the literature as it helps in expanding the typical framework that appeared in the literature in which the impact of a number of variables on TQM practices is examined.

In addition, it has also been mentioned that most of the research studies that have been conducted on TQM focused on the context of Western countries or other developed countries around the world. However, emerging and developing countries seem to have been left with limited research except for some Asian countries such as Malaysia and India. On top of that, in the Middle East region in general and in Saudi Arabia in particular, TQM studies and the factors that influence its implementation in the public healthcare sector have been left with scarce research (Al-Harbi, 2012). By conducting this study in an emerging Middle Eastern country, namely Saudi

Arabia, the current study gains part of its theoretical significance as it provides a cross-country understanding of how the variables that influence TQM practices operate in other parts of the world.

1.6.2 Practical Significance

It has been mentioned earlier that the public healthcare sector represented by the public hospitals in Saudi Arabia experiences a number of challenges and the nature of the services provided to patients are perceived to be low in quality. The private sector on the other hand seems to have relatively good quality and some studies reported that the services provided by the private hospitals in Saudi Arabia seem to enjoy better perceptions of quality as compared to the poor perceptions of Saudi public hospitals. The present research attempts to investigate some of the factors that have been hypothesized to influence the provision of total quality management in the Saudi public healthcare sector represented by the Saudi public hospitals which is regarded as an important determinant of organisational performance. The study contributes to the efforts that are being made by the Saudi Ministry of Health (MOH) by drawing their attention to the most influential factors that influence of the provision of TQM and thus the quality of the services provided to the Saudi public. The study generates some useful recommendations that can be taken into consideration by the Saudi Ministry of Health (MOH).

1.7 Scope of the Study

Considering that the study attempts to examine the impact of a number of determinants of healthcare service quality implementation in the Saudi public healthcare sector, the study targets the public hospitals in Saudi Arabia. The population of the present study therefore includes all the public hospitals in Saudi Arabia represented by the directors in these hospitals

1.8 Organization of Study

This study is organized in six chapters. The first chapter sets the context of the study, provides the rationale and motivation for research, and discusses the significance of the study as well as the research objectives. Chapter two reviews previous studies and literature on TQM practices and the factors that influence its implementation in general and in the healthcare sector in particular. The chapter also includes the theoretical underpinnings upon which the study is grounded. Chapter three presents the theoretical framework and hypotheses developed based on the literature review. Chapter four presents the research methodology including the research phenomenon, the research strategy, and the methodology adopted. Chapter five reports the findings based on the data collected. Finally, chapter six discusses the findings, implications/contributions, limitations of the study, and recommendation for further research.

1.9 Definitions of Related Terms

- **Total Quality Management (TQM)**

There seems to be a consensus among researchers and practitioner that it is not easy to provide a single definition of the construct of total quality management. Some researchers, however, stated that TQM refers to an integrative philosophy of management to constantly improve the quality of products and services (Baird et al., 2011). For some other researchers, TQM can also be seen as a management system for a customer-focused organization that involves all employees in continual improvement (Lewis, Pun & Lall, 2006). A number of other researchers (Dean & Bowen, 1994; Frehr, 1997), view TQM as a general philosophy of management, or an organisation's strategic commitment to continuous improvement which would ensure that the needs of existing and potential customers are met. In the present research, the dependent variable of TQM refers to the quality of practices being practiced by the Saudi management in the public hospitals in Saudi Arabia. A number of dimensions (determinants) will be used to measure TQM in the Saudi public hospitals.

- **Employees Commitment**

Despite the many definitions the construct has, organizational commitment has been defined as the employees' identification with a given organization together with the acceptance of these employees to the organisation's goals, values, and system as suggested by Meyer and Allen (1997). In the context of this study, the independent

variable of employees' commitment refers to how employees in the Saudi public healthcare sector, represented by the Saudi public hospitals identify with the goals and values of the hospitals where they work.

- **Employees' Capacity**

Employees' capacity refers to the development of employees in a given organisation through formal education and training programmes in an attempt to meet and achieve the goals of the organisation as suggested by Enemark (2003). In the context of this study, the independent variable of employees' capacity refers to the efforts done by the Saudi government, represented by the Saudi Ministry of Health for the sake of developing the skills and competencies of their employees.

- **Information Technologies**

Generally speaking, information technologies (IT) is a technology that utilises computers and other electronic gadgets for the sake of gathering, storing, processing, transferring and protecting information in a given organisation as explained by Rendulić (2011). In the context of this study, the independent variable of information technologies refers to the extent to which the Saudi government, represented by the Saudi Ministry of Health utilises these electronic and computerised systems effectively to achieve the goals of the Saudi public hospitals.

- **Knowledge Management**

Knowledge management (KM) refers to as a discipline that promotes and encourages managing and sharing of all of an enterprise's information assets among the employees working in the organisation. The information assets include a number of activities such as sharing database documents, policies procedures and other activities such as previously unarticulated expertise and experience resident in individual workers (The Gartner Group, 2005). In this study, KM refers to the activities being implemented by the management of the public hospitals in Saudi Arabia and whether the management shares information assets among the employees working in the public Saudi hospitals. In addition, the construct of KM acts as the moderating variable in this study in which the construct's moderating impact on the relationship between the independent variables of information technologies, employees' capacity, and employees' commitment from one side and the dependent variable of TQM practices from the other is investigated.

1.10 Chapter Summary

It should be reminded that the present study investigates the factors that influence the implementation of TQM in the public healthcare sector in Saudi Arabia. The influence of the antecedent factors on the total quality management is investigated through the moderating effect of KM. The present chapter was constructed in a way that would respond to achieving the primary goal of the study. That is, the chapter provided the background of the research followed by an overview about the construct of total quality management in the healthcare sector. Statement of the

problem was then introduced in which the gaps in the literature regarding the variables in the study are identified and discussed. The chapter proceeded to presenting the research objectives and research questions that are investigated in this study. Significance of the study which was divided into theoretical significance and practical significance was then presented followed by a section on the organisation of the thesis. The chapter concluded with presenting a section on definitions of related terms including their operational conceptualisation in the current study. The following chapter; second chapter, presents the review of literature on the construct of TQM and the factors affecting its implementation in the healthcare sector.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The present research investigates the factors that influence TQM in the Saudi public healthcare sector. The influence of the antecedent factors on the total quality management is also investigated through the moderating effect of the construct of Knowledge Management (KM). The chapter is designed to respond to achieving the objectives of the study. Specifically, this chapter of the study presents a review of literature on the main variables and constructs of the study. There are five main variables in the current study; namely the independent variables that include the antecedent factors hypothesized to influence TQM practices, which are information technology, employees' capacity, and employees' commitment. The other two variables in this study include the dependent variable of total quality management (TQM); and the moderating variable of knowledge management (KM).

The chapter begins with an overview about the construct of total quality management (TQM) which represents the dependent variable of the study. The constructs definitions, foundations, dimensions, and measurements are introduced and discussed in the line of the available literature. The chapter moves to address the antecedent factors that have been hypothesized to influence the provision of TQM, namely information technology, employees' capacity, and employees' commitment, which represent the independent variables in the present research. Similarly, the

construct of knowledge management which represents the moderating variable in the present study is then presented and discussed including its definitions, foundations, dimensions and measurements. The chapter proceeds to providing the theoretical underpinnings in which a discussion about the theories that are adopted for this study is provided. The chapter concludes with presenting the theoretical framework that is designed for this study. The following section introduces the construct of TQM.

2.2 Total Quality Management

The essence of any organization especially in the contemporary competitive market is to achieve a set of predermined objectives. For these objectives to be achieved however, the organization must create a competitive advantage, otherwise, the organization is doomed to fail (Zhou et al., 2005) One of the techniques that have always been reported to help organisations compete and in turn remains in the market is TQM practices. In this context, Alharbi (2012, p. 23) argues that gaining a competitive advantage which is a paramount goal of all organisations will be achieved "when the organization has the conviction that implementing quality management can lead to enhanced quality". From this basic principle appeared the concept of total quality management (TQM).

Total Quality Management (TQM), as a concept, was introduced by Edwards Deming and this concept did influence the post-war era in which a reconstruction for improving the production quality of goods and services was adopted and strived for (Williams, 1993). By 1980 the Japanese products and services showed a significant

influence on global markets which was planned from 1950. The American industries and manufacturers had to admit their old fashion business model from nineteenth century was not effectively responsive to the universal markets and inquiries. American industries stakeholders had to accept the ear of change once “bottom lines began to bleed red ink, as costumers the world over registered their preferences for Japanese products over American goods” (Bonstingl 1992, p. 5). Major aspects of culture and business modelling guidelines are generating the bold routes of Total quality Management (TQM) when it comes to incorporate quality models in industries (Hixson and Lovelace 1992; Sallis, 1992). Also, Sallis (1992, p.173) declares that “Total Quality Management starts with recognition of the complexity of the issues surrounding standards and offers a methodology for defining and negotiating standards, and ensuring that they are met wherever possible”.

Quality management has become a global issue with increasing number of organizations attempting to implement quality management. Increasingly, the critical importance of quality is comprehended in such a way whereby quality management is no longer regarded as an operational issue. Therefore, organizations attempt to align their strategy with quality concerns and objectives in order to attain sustained competitive advantage (Anderson et al., 1995). This can be carried out and reached only when such organisations realise that embarking on the implementation of quality management is an important and integral way that would in turn lead to the enhancement of quality.

Total quality management has been reported to mean that a given organisation constantly strives to meet or even exceed the hopes, expectations, and wants of their internal and external customers (Malek & Kanji, 2000; Rönnbäck & Witell, 2008). The researchers further elaborate that meeting the needs and desires of customers is seen to be the responsibility of everyone working in these organisations. TQM is also about doing the things right at the first time and this is done through reducing fear, removing errors, and distributing responsibility across the organisation's various departments.

Despite the fact that TQM is a management method developed first in the industrial sector, it has recently been obtaining considerable attention and focus in other sectors such as service oriented industries, educational institutions, healthcare, etc. (Miller, Sumner & Deane, 2009; Saleki1, Sabet, Roumi & Dezfoulian, 2012). In this context, Irfan, Ijaz, Kee and Awan (2012) stated that compared to manufacturing organizations which have successfully incorporated TQM as strategic choices, service organizations have been reported to be slower in adopting this philosophy. As far as healthcare sector is concerned, the concept of TQM is a relatively a recent notion that was adapted from practices in the industrial sector. In this context, Shortell, Levin and O'Brien (1995, p. 151) define the construct of TQM as "an ongoing effort to provide care that meets or exceeds customer expectations". The researchers further elaborate on this definition stating that TQM is a promising approach in which it improves the quality of care while at the same time contain costs. This conceptualization highlights the importance of TQM as a technique for

constant improvement taking into account that the patients in healthcare sectors reside in the core of these improvements (Alharbi, 2012).

Other researchers have highlighted the importance of effective TQM implementation in hospitals and other healthcare institutions. In this context, Alharbi (2012) and Kunst and Lemmink (2000) stated that quality management has become an important issue in hospitals since the 1980s and that the increasing attention to quality is due to government influence, influence of customers and other stakeholders, and hospital management initiatives worldwide. In addition, Al-Zu'bi (2011) stated that hospitals worldwide are undergoing dramatic changes in establishing health care systems and in implementing new managerial approaches that would lead to better satisfaction and in turn better organisational performance. The researcher further elaborates that one of the main healthcare system the hospitals are trying to implement is TQM.

Patel (2008) addressed the importance of TQM implementation and practices in healthcare sector, particularly in hospitals. The researchers argue that myriad features of quality are generating a precise healthcare service of which the customersare associated with efficiency as reflected by TQM. From this missionary perspective of medical support and services, doctors, clinic and hospitals, nurse stations and laboratories are considered as sellers as they provide health services for a particular cost. However the patients are regarded as the buyers. In this regard, many other factors can be dragged into the consideration as secondary yet essential that can be measured as performance quality in terms of healthcare service. Such

other factors include employee's behaviour, their attitudes towards healthcare service and TQM, administration and legal orders, etc. The entire process of admission, appointing the doctor, providing the related services, as well as medication and treatments is considered the interaction between seller (healthcare providers) and costumer (patients) in which the efficiency of Total Quality Management can make a significant difference. Based on this conceptualisation, the current study examines some factors that have been hypothesised to influence the implementation of TQM in the Saudi public hospitals.

Other researchers, Baird et al. (2011) addressed the importance of TQM in healthcare organisations tracing the development of this concept in this sector. The researchers state that that the healthcare sector authorities and stakeholders in the twenty first century had many obstacles and bold challenges to generate and develop policy and guidelines for large scale population and societies in terms of healthcare around the world. The major challenge was about the people reaction toward the healthcare services provided by authorities and rejecting or resisting against the policies. This problem was supposedly regular among the countries with fragile economy and low budget specified for healthcare and related development plans as well as high rate of population growth that makes the healthcare developments limited both by financial resources and sub urban sectors of societies. Total Quality Management (TQM) in terms of healthcare was put forward and developed by healthcare organizations and private sector active establishments in western countries from early years of 90s in order to provide prime quality of healthcare

services and products. However, while TQM is well-established in terms of conceptualisation and implementation in these Western countries, it is regarded as a relatively new concept in other emerging and developing countries and further research is still needed to contextualise a precise and accurate localised implementation practices which would in turn lead to better performance and more satisfied customers (patients). Even though TQM has been widely recognized as an important tool or strategy that can assist organizations to be competitive through continuous refinement and feedback (Agboola, 2013; Abusa & Gibson, 2013; Al-Dhaafri et al, 2016; Bouranta et al., 2017; Moreno-Luzon et al., 2013; Yu-Yuang et al, 2010), much more remains to be comprehended about what constitutes the TQM, its specific role and how it can be implemented successfully among organizations. For instance, a detail review of literature has shown that various and diverse factors have been used to predict TQM implementation (see Appendix II) and which shows that these factors/models being used are fragmented thereby signifying the need for further research in this aspect. Asides, the result of previous studies on the relationship between the success factors of TQM and TQM implementation have not been consistent. While a number of scholars found that success factors such as top management commitment, Information technology, employee commitment, Leadership, Education and Training, employee motivation, staff involvement, (Abusa & Gibson, 2013; Alia et al., 2010; Talib et al, 2013; Pereira-Moliner et al 2012; Metha et al., 2014; Ninti et al, 2011; Pereira-Moliner et al.,2012) determine successful implementation of TQM, other scholars however argued contrarily (e.g.,

Martínez-Lorente et al., 2014; Oruma et al., 2014). The inconsistencies in the findings of these studies indicate that TQM needs to be researched further.

Furthermore, lack of consensus among scholars concerning the causal relationship between TQM and other factors have continued to create gap in literature. A critical review of literature for instance revealed that TQM has been used as a mediator (e.g., Al-Dhaafri et al, 2016), moderator (e.g., Loukis, Georgious & Pazalos, 2008) and independent variable (e.g, Silva et al., 2014) thereby causing confusion instead of conviction about how TQM should be implemented. Besides what constitutes the actual and specific components/practices/principles of TQM is still a myriad among scholars and practitioners. For instance, while recent studies such as Talib et al (2013) used 17 princinples, Pereira-Moliner et al (2012) used 10 components while Metha et al (2014) used 13 practices. The inability among scholars to come up with precise and specific factors that can be used to predict TQM implementation recently indicates a need for further research in this respect. In view of the gap in literature, this study has investigated information technology, employee commitment and employee capacity, as a detailed review of literature has shown that previous scholars hardly considered these variables especially in the context of developing countries such as Saudi Arabia. This is also in line with the argument of Abusa and Gibson (2013) who assert that in the Arabic world, organizations, to date, have widely interested in quality assurance systems, but the adoption of TQM is very minimal. This low adoption especially among the public hospitals especially in Saudi Arabia may be traced to the inability of scholars to come up with empirical studies

that could guide practitioners on to properly implement TQM. In order to shed more light into the concept of TQM, the following section addresses its main principles.

2.3 Critical Successful Factors for Total Quality Management

If organisations want to implement TQM successfully, this should involve the deployment of a number of Critical Success Factors (CSFs) as suggested by Seetharaman, Sreenivasan, and Boon (2006). Among the very first research that attempted to identify these critical successful factors of TQM was carried out by Saraph, Benson, and Schroeder (1989). Later, different studies identified and analysed TQM CSFs. The following sections address these success factors in implementing effective TQM practices.

- **Training and Education**

One the most significant factors in a successful TQM co-operative programme in an organisation is training. Being skilful and knowledgeable is directly effective on providing high quality services and production among organisation employees. All management level members and employees should comprehend and admit the significance of high quality training and education (Zhang, Waszink & wijngaard, 2000). All level employees of an organisation should come to comprehend the importance of the quality management system that can directly affect their roles and responsibilities in an organisation (Chartrungruang, Turner, King & Waryszak, 2006). In the context of this study, the perceptions of hospital directors towards training and its implementation and also towards the effective utilisation of

education to upskill the level of employees and their capacity is essential considering that these directors are the ones who push for training policies, structure and then overview its outcome and evaluation.

- **Teamwork and Employee Involvement**

Critical Success Factor (CSF) when it comes to Total Quality Management (TQM) is based on variety of important factors such teamwork and employee involvement in the organisations. This factor is regularly described as the comprehension of the employees from the product and service quality disciplines and polices conducted by the decision-makers and their collaborative attempt to work towards that product/service quality. A high level of collaborative work and involvement from the side of employees to the organisation's quality policies can turn into a bold factor of quality improvement of the organisation's service and products. The business policy of the company should increase the level self-evaluation among the employees towards a higher teamwork and involvement of their responsibility that intentionally can turn into an event of producing high quality service and product (Mendes, 2012).

It is noteworthy to state here that the construct of teamwork and involvement is somehow different from the construct of employees' commitment, which is one of the independent variables in this study. Specifically, while teamwork and involvement refers to employees' perceptions about the level of cooperation and collaboration in achieving the objectives of the organisation, employees' commitment, on the other hand, refers to their perceptions about their own individual

feeling of being part of the organisation. In other words, while a given employee may possess high level of individual commitment, he/she may possess low level of teamwork and involvement due to the lack of teamwork desire from the rest of the team where they work.

- **Strategic Quality Planning**

It is noteworthy to state that researchers and practitioners seem to agree that the concept of quality should be an integral part of strategic quality planning and that for quality to be achieved its implementation is very much related to models of strategic planning as suggested by Carmona and Burgess (2001). These two researchers further state that the construct of strategic planning plays an important role in defining the route or the benchmark between where the system, in a given organisation, is and the point where it should be and also the level it wants to achieve. To do so, strategic planning focuses on outcomes together with the outputs. The concept also provides the organization with the right tool in order to define itself and also in order to assess and evaluate its service through a systematic method where the organisation can modify and adapt their strategic planning methods to achieve its current and future objectives. It is noteworthy to state here that strategic planning is the responsibility of not only the top management in the organisation (hospital in this study), it is also the collaborative responsibility of the employees from different departments and also the responsibility of middle management and the collaboration between all departments in the hospital.

- **Customer Focus**

Zhang, Waszink and Wijngaard (2000) suggest that the foremost achievement of a company is to motivate employees who have adequate understanding toward customer's satisfaction with respect to accommodating the customer's inquiries. To pursue a high level of customer satisfaction, the management is required to employ an efficient model of TQM in an organisation (Chartrungruang et al., 2006). In this study, the construct of customer focus was integral in determining the effective implementation of TQM practices considering that customer (patients in this study) satisfaction is regarded as an important determinant of organisational performance and taking into account the well-established link between TQM and organisational performance.

- **Information and Analysis**

Implementing effective technology has become one of the critical factors that are required to achieve the objectives and in turn the success of organisations. Generally, most organisations out there utilise some form of technology-based information systems that are used to facilitate different tasks. While the use of different forms of technologies is an integral part of the performance of the organisation, the construct of information and analysis in TQM refers to how data collected are dealt with and how the findings of the analysis of the data are used to improve the quality of services provided to customers. This is why in the context of this study, the construct of information and analysis is not used to describe the use of technologies in the

hospitals considering that information technologies is one of the independent variables in this study. Instead, the construct is primarily used to describe how hospitals deal with the data collected and how they modify and adapt their management processes and practices in accordance with the analysis of the data and their findings.

- **Continuous Improvement**

Continual improvement (CI) is regarded by many researchers and practitioners to be an important component of TQM and it was also included as one of the management principle that are involved to the revised ISO 9000 family of standards as suggested by Plura (2000). The researcher further elaborates that the construct of continuous improvement refers to the continuous efforts done by the organisation and the employees in the organisation to improve the quality of products or services delivered to customers and that any organization is required to create, track, carry out, and maintain quality management system together with the constant improvement to the their effectiveness in accordance with the requirements of the international standards.

- **Process Management**

Researchers believe that process management is a substantial category of Total Quality Strategy Management. The entire process of providing services and products inquires adequate concerns by management and employees. The major concern for

generating policies of process management is to maintain the defined quality by the management throughout the entire organisation and related business extensions. Moreover increasing the expectation of customers by elevating the quality of service and product that may result in customer satisfaction is in the focus of the term of conduction too. Once evaluation is carried out and analysis is done, utilising the data collected and analysed for the sake of improving the quality of services provided and also the internal processes in the organisation is highly essential for an effective implementation of TQM as suggested by Pheng and Jasmin (2004). This is why in the context of this study, this dimension of process management targets the perceptions of hospital directors towards the utilisation of the data for the sake of improving quality.

- **Role of Quality Department**

Total Quality Management is suggested by scholars to be somewhat in connection with business culture of an organization. Culture is highly influential on managers and non-managers to employ TQM in their organisational behaviour and this is arranged and coordinated through the effective role of quality departments in different organisations (Mohamed & YuanJian, 2008). One of the most important factors of Critical Success Factors in an organization is the cultural solutions of an organisation's manpower to apply TQM in their business nature. Study shows that one of the bold obstacles of teamwork and flawed collaboration among employees can be due to lack of cooperation between the quality department and the other departments in the organisation. Consequently and in the context of this study, an

efficient collaboration between the quality department and the other departments in the hospital can clearly result in more effective implementation of a successful and resourceful TQM discipline (Sajjad & Amjad, 2012).

Thus, the previous sections addressed the basic principles (components) of TQM and their utilisation in the current research. However, this is not to say that the previous mentioned principles are the only ones that emerged in the literature but they have been selected as they fit the context of TQM practices in this study and this was done due to a number of reasons. For example, one of the principles that emerged in the literature was the construct of top management commitment but it was not chosen to constitute the principles of TQM in this study as the construct of employees' commitment itself is one of the independent variables in this study. More importantly and considering that the study adopts Alharbi's (2012) model of TQM practices, the utilised principles in this study were the ones used in Alharbi's (2012) study, which was also conducted on the Saudi healthcare sector represented by the public hospitals in the country. The following section addresses some factors that have been hypothesised to influence the implementation of TQM practices and these factors represent the independent variables in this study.

2.4 Factors Influencing the Provision of Total Quality Management

In the field of healthcare, researchers and practitioners seem to agree that the application of total quality management practices would lead to better organisational performance as it would generate better quality of the services provided to patients

(Santos-Vijande & Alvarez-Gonzalez, 2007). However, a number of researchers argue that TQM does not act on its own and that a number of factors influence its provision. Among the factors that have been hypothesized to influence total quality management are information technologies, employees' capacity, and employees' commitment. The impact of these factors on TQM has been selected for examination in this study as these factors have been recommended by recent research studies on TQM in the healthcare sector. The following sections provide a thorough discussion about each of these variables and their impact on TQM.

2.4.1 Information Technology

Recently, the technological field witnessed a rapid and fast changing development and advancements and such rapid development played an integral part in revolutionising the business world and the various ways different businesses communicate and exchange information worldwide (Boone, 1991). In this context, Boone (1991) supports this view about the role of technology in businesses stating that organisations attempt to expand their intelligence base all the time and in a constant way. This is done not only on the power of minds of their members but also on the tools and methods these organisations use to extend the "thinking process". The "thinking" is "a process of gathering information, distilling and relating it, and creatively viewing it to induce or deduce new ideas" (p. 128).

Processed and transmitted digital form of data such as text, sound and pictogram information can be defined as major compartment of Information Technology which

is driven by computers and telecommunication hardware and software (Siam, Alkhateeb & Al-Waqqad, 2012). Quality management is directly influenced by IT applications which can result in increasing quality management development (Khanam, Siddiqui & Talib, 2013). This matter can be detected on organisations increased budget devoted to purchasing of more computing technologies. Researchers describe this intention of companies to be equipped with IT technologies to be creating the IT market movement to develop economical business plan for popularising IT products in every office and organisations more than before (Almashaqba, 2013). The infinitive intention of organisation to pursue more markets and develop their service to a larger scale of the societies has encouraged the organisation to involve more and more IT technologies for the advantage of making the organisation capable of more competitive challenges with other similar organisations in the market. This can result in employing higher level of IT in the organisation resources in favour of supporting quality management through value of IT expansion (Mensching & Adam, 1998). Rogers et al. (1996) had investigated the influence of IT technology both in software and hardware form on bilateral relations of offices equipped with digital computing products and their related warehouse industrial market. The investigation showed a high level of influence is detected in this relation which obviously presents the direct and strong effect of IT technologies in organisations and firms business performance. Saraph et al. (1989) puts forward a significant method to identify an organisation with bold quality policies. Variety of organisations are incorporating IT technology solutions in their total quality management policies. The increasing competition in different industries around the

world has urged the companies to keep to peruse of being highly capable for successful competing spirit by implementing total quality management compartments in their discipline, whereas IT technology products in both form of software and hardware are playing a key role. The increasing gravity of higher quality service and product directly result in precise performance of companies which positively escalates the completion among organisations in the same industry for providing higher quality services and productions in a long-term orientation development disciplines. Khanam, Sadighi and Talib (2013), describe that the implication of Information Technology has resulted in organisations competition mechanism for employing higher level of quality management which resulted in prime quality jobs and increasing job satisfaction.

In healthcare, researchers seem to agree that the utilization of information technology would positively affect total quality management (Alharbi, 2014). The researcher further elaborates that technology plays an important role in expanding the scope and courage of the service options. The researcher goes on to say that the use of information systems in healthcare sector is highly important as it would promote staff capabilities and it can support a range of functions such as data analysis, statistics on patient visits, in-patient occupancy rates, diagnostic tests, etc. The informative process of enhancing the quality of healthcare services toward patients and clinical association has reached a noticeable level. Information technology provides easy access to patient's information in favour of providing fast and precise service to customers from the healthcare service provider organisation.

Experience has shown that the computed digital information of customers creates a business system that enables the service provider such as clinics, hospitals and other treatment associations to develop a more efficient service as well as faster processing approach of customer satisfaction, however, this can result in reducing the fatal trauma. In this context, Jollis et al. (1993) addressed the importance of information technologies in enhancing the performance assessment in healthcare organisations. The researchers argue that the scholars put forward the myriad advantages of information technology when it comes to assessing the healthcare service quality of an organisation. They suggest two main stream of Healthcare services evaluating system's benefits. The first significant main stream would be the advantages of developing and enhancing the aspects and protocols of measuring system of healthcare services. The second major main stream is about the benefits of accessing resourceful data from the evaluation system to serve the costumers, buyers and consumer conntinuously..

Zadrozny and Ferrazzi (1992) suggest that Total Quality Management is highly inspired by information system implemented in an organisation, particularly when it comes to decision-makers act of generating business policies, manpower and technological areas. Murray (1991) declares that information technology is highly effective on elevating the company quality sustainance by means of measuring, understanding and improvement an organisations business discipline. Moreover, information technology can be considered as an inspiration to accommodate Statistical Process Control (SPC) and Quality Function Development (QFD) and also

self-evaluating toward enhancing a business model. Information technology can also be considered as a significant factor to develop continuous processing of data collection in terms of costumers' satisfaction, organisation mechanism control, critical business quality and other evaluation systems which highlight the necessity of business TQM. Konstadt (1990) puts forward the necessity of a fine communication and informational technology features based on a comprehensive data bank in an organisation that can be the key role for a sustainable organisation success when the main concern is total quality management. He mentions that information technology tools and related effective policies in a company can be considered as a major motivation to enable the whole systems for a prime level of continuous service. However it remains an argument that total quality management can be considered as an introducer of information technology in the business fields as described by researchers. As Ayres (1993), argues that implementing the total quality management principles and its related practices such as implementing information technology applications in a business model can be considered as a case of investment waste, even though it can be observed that information technology plays a key role in the field of total quality management. Suggested by Matta et al. (1998), information technology reaction to the needs of total quality management implementation is a controversial issue. Ang et al. (2000) exhibited a mechanism to estimate and measure the magnitude of information technology on management quality aspects with proposing of how information technology supports the management quality.

It has been mentioned earlier that there are a number of dimensions of TQM and that IT has an impact on each of these dimensions. One of the dimensions of TQM that emerged in the literature is the construct of top management support. Magnifying the companies' business discipline shows that implementing the information technology to support the senior management level can directly enhance the success chance of total quality management and the introduction of information technology. Zuboff (1983) describes and studies how the development of information technology in organisation in the level workforce and non-managers can increase the amount of hesitation toward the business policies and quality while the senior management at the same hierarchy would implement the information technology features in order to improve the job. Even in some cases, familiarising the non-manager manpower of the organisation with the information technology has created confusion and trauma errors (Wilson, 1994). In this regard the management must be very cautious and aware of the probable negative impacts of the information technology on the company staff in order for the TQM policies to be effective . In some cases if management direct observation is required to preform a smooth transition of applying the new information technology policies, it is recommended to be implemented yet considering not to create pressure and stress among the manpower.

Another dimension of TQM that that has also emerged in the literature is the concept of customer relationship as suggested by Quelch and Klein (1996). The researchers suggest that the relationship between the customer and the business holder can be improved in many different ways such as bar-coding, recognising system of product

as well as the electronic sales features which can refurbish the selling system in a faster process that can result in elevating the sales department targets to develop costumer's satisfaction. This system can also enable the company to communicate and provide services to geologically remote located costumers (Quelch and Klein, 1996). Gilmore and Pine (1997) define that information technology can be highly influential on customer service policies and guidelines. Rathnam et al. (1995) have investigated the impact and influence of information technology to enhance the customer service staff performance. Kauffman and Lally (1994) have both created a model to examine costumer's access of information technology. Also the outcome of investigation conducted in the same area exhibits, the increasingly growth of modern technology urges the organisations to be prepared for future hierarchies where the costumers are able to manage their relationship with the business process and receiving the services.

Another dimension of TQM is the suppliers' support and one of the aspects among three major total quality management aspects can be described as supplier supportive enforcement. In this regard, the main communication of the supplier and the costumers can be interconnected based on electronic data interchange (EDI). This system can ordinary be about receiving the costumer inquiry as placed through the system and providing related confirmation by the supplier in response. Categorising the product specification and delivering the right order at right time is the necessary compartments of this system (Joncher, 1994). Teague et al. (1997) declares the mechanism of company advanced preparation earlier than the costumer's requested

getting placed by the advantage of information technology system. Accordingly, some companies have already engaged the mentioned system to provide the costumers accessibility of self-placing order as well as automated scheduling delivery process provided by the company. Mukhopadhyay et al. (1995), describes the considerable business achievement by Chrysler co. from the advantage of EDI system development between service suppliers and the company itself. Those companies that have used the EDI systems are showing a significant organisational productivity (Banerjee & Sirram, 1995). The investigation of Srinivasan et al. (1994) also suggests organisational investment to develop information technology in different methods such as Just In Time (JIT) arrangement system can conclude in noticeably precise delivery system with the slightest negative impacts to the relations of costumers inquiry expectations and company costs related response. Bakos and Brynjolfsson (1993) and Stumpand Sriram (1997) claim that information technology can lead to rapid response of the decreasing number of suppliers used by an organisation in return.

The workforce management is described by researchers as also one of the dimensions of total quality management. This can be studied as one of the most debatable issues of information technology involved in total quality management especially when it comes to organisational interactions between the staff of a company and middle range managers where automation development is in the centre of focus. Even though some scholars (e.g. Bradly, 1989) suggest the information technology can down size the complication of a company management system

hierarchy, some other researchers (Pfeffer & Leblebici, 1979) claim that information technology can ease the complication of organisational management mechanism by eliminating the delay and falsification of the information transmission between the customer and the company as a consequence of swift order placement and related response. Pinsonneault and Kraemer (1997) also believe that information technology in companies where those decision-making authorities were not at centre of organisational management system, the information technology was increasingly implacable where in organisations with multi-level managing mechanism with the centralised allocated decision-making authorities, information technology development was showing symptoms of down-sizing. Wilson (1994) in this regard suggests that information technology can somewhat turn the employees into heartless machineries by specific repetitive tasks and sub-categorising work into small high-quantity actions in which professional workers can be replaced with automated behaviour staff and it can result in least requirements for the service skills and followed by low expectation job satisfaction.

One the central benefits of information technology is the capability of on-hand sharing process of information amongst different management level and organisation units. Even though this easy to share capability does not necessarily mean that employees both in managerial and non-managerial levels are showing interest to re-send and share information to one another in a business environment, experience has shown that if act of sharing the information is not helpful or against the intentions of an employee then there would be a hierarchy of minimum intentions to reveal the

information to other personnel and colleagues. In essence if members of the organisation decide to share information, it is expected that the organisation imply noticeable prominence on the informative subject that is supposed to be shared.

Another dimension of TQM can be described as quality information and reporting. The utilization of IT is a major expertise to work with information, access to diverse databases is made less demanding and the ensuing examination is quicker and more precise. Organizations need to consider how to apply IT to encourage the trade of data between distinctive divisions (Lawler, 1991). Some Information technology applications give an automatic facility to accumulate, record, and follow up on thoughts amid gatherings of workgroups (Jackson et al, 1995). Data from newsgroups and rundown servers gave in the Internet can likewise be valuable supports to enhance item quality (Finch & Luebbe, 1997).

The role of quality department is also one of the dimensions of TQM that have emerged in the literature and it is also one of the dimensions that constitute the construct in the context of this study. The way in which IT can help in diverse undertakings, for example, the determination and utilization of value expenses, input of value information to workers and directors for critical thinking, giving auspicious quality estimations, and enhancing the accessibility of value related information is an issue which has begun to surface in the writing, however, needs further clarification of information technology in total quality management environment.

Thus, it could be seen from the previous argument how IT is related to TQM in general and the way it is related to the dimensions of TQM in detail. Due to this strong influence of IT on TQM, the construct is selected for examination in this study. This is especially important in the context of Saudi Arabia where most of the previous studies have not considered its importance in enhancing the implementation of TQM. Beside, where this factor has been considered especially in the context of the developed world, their results have not been consistent and which calls for further study in this regard. Notably too, even though some researchers regard IT as a component of TQM , recent arguments position that IT should be treated as a major determinant of TQM implementation and not otherwise. The other factor that has been hypothesised to influence TQM practices is the construct of employees' capacity. The following section sheds more light into the construct of employees' capacity and how it is related to TQM implementation in the healthcare sector.

2.4.2 Employees' Capacity

The selection of value administration practices has long been connected with an increment in the procurement of representative preparing and guaranteeing that representatives in any association are equipped for accomplishing the organization's goals (Cooney, Mile & Samson 2002; Alharbi, 2014). The originators of value practice in assembling stressed the significance of worker improvement, training and preparing for the change of value execution and firms trying to execute quality administration have reliably thought that it was important to enhance their preparation exertion. Firms seeking after a quality methodology have thought that it

was important to put resources into 'human-capital-improving' exercises, for example, preparingto improve execution changes in gainfulness and consumer loyalty (Youndt, Snell, Dean & Lepak, 1996).

In any organisation, big or small, employees working in the organisation need continuous training in order to manage the expansion of their work roles and responsibilities. Employees also need training in the skills that are non-technical in nature so that they will be able to take effective part in quality improvement activities (Schonberger, 1994). Preparing for quality administration requires the advancement of particular aptitude sets that bolster quality administration rehearses. Such preparation is critical, not just to guarantee the effective appropriation of value practice, additionally to guarantee the accomplishment of the more extensive quality mission of enhanced firm aggressiveness (Dertouzos, Lester & Solow, 1992). The achievement of the quality techniques embraced by the firm and the adequacy of the quality administration framework utilized inside the firm, are subordinate upon the supply of fittingly talented work (Almashaqba, 2013). There are entrenched connections between the procurement of representative preparing and their ability and utilization of value administration hones, however, there is some verbal confrontation about the degree to which the workers' ability and preparing impact the usage of TQM. The open deliberation is which one goes before the other, i.e. there is an open deliberation whether TQM prompts more competent and prepared workers or whether the fit and prepared the representatives are, the better execution of TQM

is accomplished. This study endeavours to analyse and accept this open deliberation by analysing the effect of workers' ability and preparing on TQM improves.

Also, worker preparing and limit as often as possible went with the presentation of Total Quality Management programs. For example a study of Fortune 1000 organizations in 1993 (Lawler, Mohrman & Ledford, 1995, p. 16) discovered that 72% of US firms had given some preparation in critical thinking aptitudes and 63% had given some preparation in the utilization of value apparatuses, when presenting quality administration rehearses. Preparing conveys more prominent profits, a few researchers contend, if administration centres upon the key adequacy of that preparation as opposed to just upon its capacity to improve worker errand viability. Representative preparing is of more worthy to the firm in creating human capital in the event that its influence is interceded by the quality administration framework. In the event, firm particular aptitudes are produced that enhance the abilities of individual representatives as well as upgrades the adequacy of the quality administration framework (Cooney, Mile & Samson, 2002).

Despite the importance of employee capacity in improving TQM implementation, fewer studies have only considered it (e.g., Mehra & Coleman, 2016; Rahman, 2001; Talib et al., 2011) especially in the context of Saudi Arabia which is a developing country. The reason behind may not be farfetched as most of the previous studies have given more preference to top management commitment and regard employee capacity as a mere factor that may have any major influence on the TQM

implementation. Aside, the relationship between TQM and employee capacity has not been too clear. While a number of authors regard employee capacity as a component of TQM, a few others argued strongly that employee capacity should be treated as a determinant of TQM. Basd on this gap, this research further studied employee capacity as an antecedent of TQM. The following section addressed another critical factor that has been hypothesised to influence the implementation of TQM practices, namely employees' commitment.

2.4.3 Employees' Commitment

Employees working in various companies or organizations are seen as an integral part of their structure and achieving of the organisations' objectives. In this regard, Armstrong (2006) believes that employees working in a given organization are regarded as the most valued assets of the organization considering that they are the ones who contribute to the achievement of its objectives, whether individually or collectively. The researcher further elaborates that considering that organisations are seen as bodies of individuals working together to achieve a set of gaols, the recruitment of these individuals, developing their skills and competences, enhancing their motivation, and working on their organisational commitment are critical activities that should be wisely considered by organisations as they would have a great deal of impact on organisational performance.

Consequently, the organisational commitment of the employees working in different organisations together with their willingness to agree to take the objectives of

organisations striving to achieve them, are important fundamentals that individual employees ought to possess (Munizu, 2013). As far as the healthcare sector is concerned an in support of this view, Armstrong (2006) and Munizu (2013) strongly believed in the significant roles played by the individual employees in healthcare sector in ensuring that objectives are effectively achieved. Another elaboration on this was given by Plek (1998) who stated that if employees of hospital view themselves as crucial to achieving the quality of health service that is provided to patients, their attitudes will significantly change whereby they believe that they belong to these hospitals and this will have a great deal of positive on organizational commitment.

Hierarchical responsibility has fluctuated in authoritative connection and most regularly characterized the term authoritative duty by Porter et al. (2004) is “the recognizable proof with an association and acknowledgement of its objectives and values as one's own”. Hierarchical responsibility is concurred by numerous scientists to an in number determinant of authoritative execution. Hierarchical duty alludes to the cooperation and grouping of a man with an organization; this is the productive societal affiliation connecting an individual and foundation. Persons who contain far over the ground power of hierarchical duty, they participate in additional part conduct also. Hierarchical commitment is an angle that controls additional part conduct.

Organizational commitment has been defined by Meyer and Allen (1984) as involving three aspects, namely affective commitment, normative commitment, and continuant commitment. Much of the research undertaken in the area of organizational commitment focused on affective commitment, which refers to the employee's emotional attachment to, identification with, and involvement in, the organization (Farr-Wharton & Brunetto, 2003). The normative component, on the other hand, refers to the employee's feeling of obligation to remain with the organization. However, normative involvement has received less research attention (Yiing & Kamarul, 2008). Finally, the continuance component refers to commitment based on the costs that the employee associates with leaving the organization.

Yiing and Kamarul (2008) found that expert's duty is the essential and principal indicator of the authoritative responsibility. There are numerous variables which impact authoritative duty. It is practice that if the workers are highly dedicated with the association, then the associations can be considered to be more proficiently accomplished objectives so the hierarchical responsibility has the positive effect on the authoritative execution. Hierarchical duty, as a state of mind, has been characterized as "the relative quality of a singular's recognizable proof with an association in a specific association". This definition, mirroring an individual's viable responsibility speaks to a noteworthy way to the investigation of hierarchical duty (Meyer et al., 2002) and seems, by all accounts, to be the most fancied type of duty. As per Allan and Meyer (1990), viable duty alludes to the representatives' passionate connection towards ID with and inclusion inside the association. Workers

with a level of successful duty proceed with occupation with the association in light of the fact that they need to do as such (Ghani, Nordin & Mamat, 2004). To accomplish compelling duty, bosses need to help their representatives' quality interest in the association. The more the workers' quality being a piece of the association, the more probable they are to stay in.

Porter et al. (1974) defined organizational commitment as the strength of an individual's identification and involve three main factors. The first factor is seen as a firm belief together with the acceptance of the goals and values of the organisation. The second one is seen as a willingness to apply substantial effort representing the organisation while the third one is seen as an absolute desire to sustain organizational membership.

This kind of definition joins both mental and a behavioural measurement (Maxwell & Steele, 2003). The researchers have recommended that increasing a more noteworthy comprehension of the methodologies identified with hierarchical duty has suggestions for workers, organizations, and society overall. Workers' level of responsibility to an association may make them more qualified to get both outward (e.g. wages and profits) and mental (e.g. characteristic employment fulfilment and associations with colleagues) prizes connected with participation. Organizations esteem responsibility among their workers, which is normally accepted to lessen withdrawal practices, for example, delay and turnover.

Deming (1986) describes worker's duty to quality act as fundamental to an operational TQM program. TQM hypothesis recommends that long haul job adds to quality in no less than two ways: it produces the sort of inferred information of operations that aides enhance adequacy, and it helps the association increase advantage from interests in preparing (Brooks & Zeitz, 1999). A few specialists say the significance of long haul livelihood responsibility from workers (Berry, 1991), in spite of the fact that others work life span is just implied. Help, Safa and Arumugam (2006) contend that inspecting the relationship between the organization of TQM practices and workers' work environment state of mind, for example, powerful duty have been fundamentally recounted (Morrow, 1997). In the TQM writing, there is by all accounts a general comprehension with respect to the kind of TQM exercises that contribute towards the advancement of "business perfection" and the capacity to manage individuals (Boselie & Wiele, 2002). Furthermore, Boon, Safa and Arumugam's (2006) study did not endeavour to inspect the effect of authoritative responsibility on total quality management rehearses. This study, notwithstanding, looks at the effect on authoritative responsibility on TQM implementation.

Alfalla-Luque, Marín-García and Medina-López (2012) pose the question whether labourer responsibility is vital for accomplishing game changer and consumer loyalty when organizations use Human Resource Management and total quality management . The three specialists go ahead to say that there is confirmation for considering labourers' powerful duty as a variable that may disclose why representatives choose

to try and showcase practices that support the change of techniques and help the organization to accomplish better result.

In spite of the importance of employee commitment towards the implementation of TQM, a substantial body of research have only considered the technical aspects of TQM while only a few studies have examined the role of employee attitudes (such as commitment) in contributing to the success of TQM implementation (Lam, Donnell & Robertson, 2015). Apart from this, the results of previous studies on the relationship between commitment and TQM implementation are not consistent thereby calling for further studies in this regard.

It is noteworthy to remind here that one of the gaps in the literature is the idea that majority of the studies that have been done in the literature sought to explore the influence of a number of factors on TQM practices while limited research attempted to examine the moderating impact of other variables (Sadikog & Zehir, 2010). One of the important moderating factors that have been hypothesised to influence the relationship between the factors that influence TQM and its implementation is the construct of Knowledge Management (KM). The following section addresses this construct and the way it is related to TQM and its moderating impact on the relationships between the independent variables and the dependent variable in this study.

2.5 Knowledge Management

“Knowledge Management” (KM) is the methodology of social affair, overseeing and imparting workers' learning capital all through the organization. Imparting Learning through the organization improves existing authoritative business procedures, presents more proficient and powerful business methodologies and uproots excess methods.

The methodical procedure of discovering, selecting, arranging, refining and displaying data, enhances a worker's cognizance in a particular range of investment. KM, as accentuated by Abdul Kalam (2004), helps an organization to comprehend issues and phenomenon based on its past experience.

Knowledge management is not only defining Knowledge Technology aspects. KM can be considered as an empowering influence to accomplish key business goals. Consequently the need of Knowledge Management activity emerges to end up answer for such issues, which unites individuals, process and innovation and helps corporate to accomplish its objectives and vision.

Knowledge management is a review of "savvy resources" that highlights exceptional sources, basic capacities and potential bottlenecks, which prevent information streams to the point of utilization. It shields savvy resources from rot, looks for chances to improve choices, administrations and items through including knowledge, expanding esteem and giving adaptability. KM supplements and improves other hierarchical activities, for example, all out quality administration (TQM), business

process re-designing (BPR) and authoritative learning, giving another and critical centre to maintain focused position.

The Gartner Group (2005) characterizes KM as a train that elevates a coordinated way to recognizing overseeing and imparting of the greater part of a venture's data resources. These data resources may incorporate database reports, strategies methods and also already enunciated ability and experience occupant in individual specialists. Information administration issues incorporate creating, actualizing and keeping up the proper specialized and hierarchical foundation to empower learning offering.

Broadbent (1997) characterizes KM as a type of aptitude administration which draws out implicit information, making it available for particular purposes to enhance the execution of association; about how the organization's 'ability' ought to be organised, sorted out, placed and used to give the best activity.

2.5.1 Why Organisations Need Knowledge Management

Information administration arrangements are presently the most imperative vital advancements for substantial organisations, as indicated by another report and overview of European officials by the Economist Intelligence Unit (EIU.com, 2003), supported by Tata Consultancy Services. In the study, 67% of organizations refer to information administration/business discernment arrangements as essential to accomplishing their key objectives throughout the following three years.

To serve clients well and stay in business organisations must: diminish their process durations, work with least settled resources and overhead (individuals, stock and offices), abbreviate item advancement time, enhance client administration, enable workers, advance and convey amazing items, improve adaptability and appropriation, catch data, make learning, impart and learn. None of this is conceivable without a ceaseless concentration on the creation, overhauling, accessibility, quality and utilization of learning by all workers and groups, at work and in the commercial centre.

2.5.2 Components of Knowledge Management

In view of real encounters of the main worldwide KM contextual investigations, the segments for knowledge management can be comprehensively ordered into three classes - People, Processes, and Technology (Figure 2.1). While each of the three are discriminating to construct a learning organization and get business results from KM, a lion's share of organizations overall actualising knowledge management have discovered it moderately simpler to put innovation and courses of action set up, though the "individuals" part has postured more noteworthy difficulties. The greatest test in KM is to guarantee cooperation by the individuals or workers in the information offering, joint effort and re-utilisation to accomplish business results. In numerous organizations, this obliges changing conventional mentalities and hierarchical society from "information accumulating" (to keep concealed or private) to "learning imparting" (offer among colleagues) and making a climate of trust. This is accomplished through a blend of inspiration/ distinguishment and prizes, re-

arrangement of execution evaluation frameworks, and other estimation frameworks. A key to achievement in Knowledge Management is to give individuals deceivability, distinguishment and credit as "specialists" in their separate regions of specialisation - while utilising their mastery for business achievement. The following figure (Figure 2.1) shows the components of knowledge management.

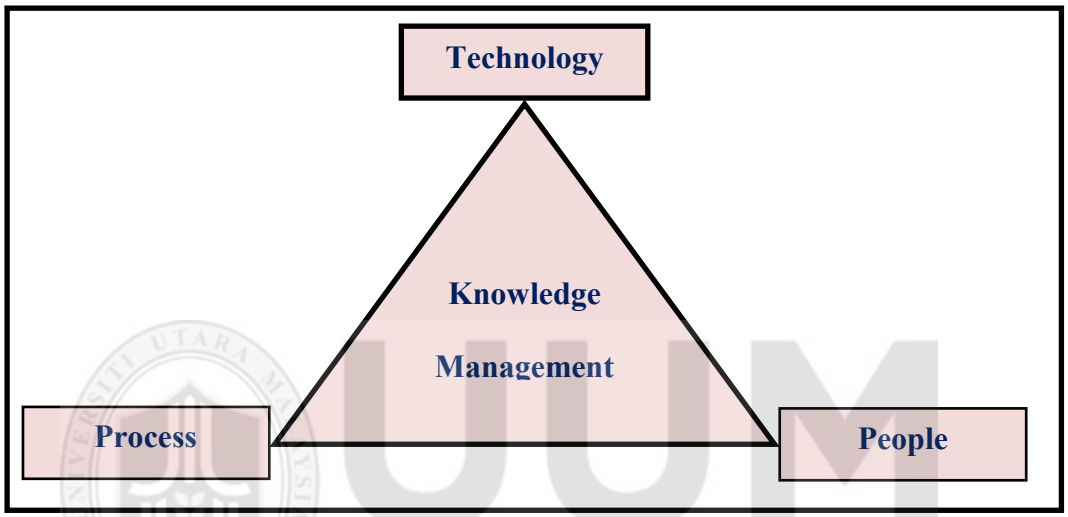

Figure 2.1 Components of Knowledge Management

The Process component include standard processes for knowledge-contribution, content management (accepting content, maintaining quality, keeping content current, deleting or archiving content that is obsolete), retrieval, membership on communities of practice, implementation-projects based on knowledge-reuse, methodology and standard formats to document best-practices and case studies, etc. It is important for processes to be as clear and simple as possible and well-understood by employees across the organisation.

KM technology solutions provide functionality to support knowledge-sharing, collaboration, workflow, document-management across the enterprise and beyond into the extended enterprise. These tools typically provide a secure central space where employees, customers, partners and suppliers can exchange information, share knowledge and guide each other and the organisation to better decisions. The most prominent type of KM innovation ennoblement is the Knowledge-Portal on the Corporate Intranet (and additional nets where clients, accomplices and/or suppliers are included). Regular advances utilized for learning entryways incorporate standard Microsoft innovations or Lotus Notes databases. An organization must pick an innovation choice that meets its Knowledge management destinations and speculation arrangement. While innovation is a key empowering agent to KM, it is imperative to guarantee that the innovation arrangement does not detract the centre from business issues and is easy to understand and easy to utilise. Numerous organisations have committed the error of exhausting an excessively high divide of their KM exertion and assets on innovation - at the expense of individual's inclusion or vital responsibility - bringing about zero or extremely constrained business results. It is likewise essential to recall that clients of the KM framework are topic specialists in their particular ranges of specialisation and not so much IT specialists.

2.5.3 The Relationship between TQM and Knowledge Management

Organisations have dependably been worried about dealing with the learning they have inside their organizations and that is the primary motivation behind why KM gets to be so famous nowadays. There are numerous genuine cases that demonstrate

that a decent mix in the middle of ceaseless and radical enhancements can significantly expand the game changers, and that these two methodologies are good (Lee & Asllani, 1997). Numerous of scientists have perceived this perspective and attempted to connect Total Quality Management and Knowledge Management together (Molina et al, 2004; Yang, 2004). They need to find out if there is any shared trait and how these two terms work together. Lim et al. (1999) propose utilising Deming's arrangement do-check-act (PDCA) cycle as the four stages for KM to turn into a fundamental piece of an organization's quality system. Zetie (2002) demonstrates that the ideas of aggregate quality and KM, together with various others, are nearly connected and are all parts of a great deal more essential idea – authoritative improvement. Zetie (2002) likewise focuses on at the linkage in the middle of TQM and KM as both have hypothetical and reasonable significance. At the hypothetical level, the suggestion is a conceivable more extensive of utilization of logical models that grew in a specific connection. At the viable level, it expands the usage of alternatives for those looking towards realizing organization change. The two factors to above let us know the presence of a connection in the middle of TQM and KM yet no point of interest. Neither did they lead any test, for example, an observational study, to bolster their perspective to the matter. Lately, although a few researchers have shown some interest in the relationship between total quality management and knowledge management but they have however not reached a consensus on how to conceptualize this relationship (Hanapour et al, 2012).

For instance, Ju, Lin, Lin and Kuo (2006) conducted a study that attempted to examine the relationship between KM and TQM in the manufacturing industry. The researchers argue that the organisations are seeing KM as a discriminating achievement in today's dynamic surroundings; thus, information administrators and learning creation groups are made in numerous organizations. They further expound that the thought that both Total Quality management and Knowledge Management have awesome influence on a firm's vital skill has additionally drawn consideration. Nonetheless, the scientists include that a large portion of the related exploration needs experimental proof on the relationship in the Team Quality Questionnaire and Knowledge Management exercises. In their study, the analysts planned a structure that clarifies the relationship between TQM and KM. In their structure, ten discriminating variables of TQM have been theorised to impact four KM exercises. The ten TQM incorporate top administration duty, receiving reasoning, quality estimation, benchmarking, procedure administration, item plan, worker preparing, representative strengthening, supplier quality administration, and client inclusion fulfilment. KM exercises incorporate information creation, learning stockpiling, information dissemination, lastly learning application.

Furthermore, Grover and Davenport (2001) opined that KM is fastly becoming a critical business factor that is assisting different organizations to achieve and maximize intellectual resources (Kayikci & Yimaz, 2014), and intellectual resources being a component of TQM. This is in line with the argument of McAdam and Leonard (2008) who suggested that, KM and TQM interact in the course of day to

day business operations and processes of any organization while Zhao and Bryar (2001) argued that KM and TQM are strongly linked, especially in the areas of staff empowerment and continuous improvement. The position of Snyder and Cummings (1998) is not far from other scholars as the researchers equally argued that institutions must learn from past experience, use such experience effectively, correct errors, and apply the knowledge in order to meet up with the continuous changes in today's competitive market. In essence, via KM initiatives, TQM as a management philosophy or practice can enhance organizations' capacity to change and improve continuously (Hung et al., 2010). This has equally been supported recently by Ferrira, Santo and Santo (2015) by asserting that Knowledge management is crucial for organizational top management leadership. According to Yip et al. (2012) the concept of knowledge alone is of little value but if well managed it becomes a tool that improves organizational leaders. Leadership has been argued by several researchers as a key component of TQM (Abusa & Gibson, 2013; Zehir et al., 2012; Sinha, et al., 2016). Similarly, Kayikci and Yimaz (2014) found that there is a relation between KM competencies of school principals' and success in TQM Award.

Evidently, Knowledge management has been used as a predictor of TQM in several instances (Mc Adam & eonard, 2001;Yu-Yuan Hung et al, 2010), has equally been conceptualized as a mediating variable in some other studies (e.g., Chuang, Chen & Tsai, 2015) and as a dependent variable (e.g., Ooi, 2014; Yazdani, Shahim & Kheradmandnia, 2015). However, its moderating role, especially on the relationship

between TQM and its as antecedents (employee commitment, employee capacity and information technology) has been largely ignored. In line with the suggestion of Baron and Kenny (1986), a moderator strengthens the relationship between independent and dependent variable since it is a contingent construct (Sekaran, 2003). For this study, knowledge management (Sadikog & Zehir, 2010) is used as a moderator as past studies have largely ignored its relevance in strengthening the relationship between TQM and its antecedents. KM as a moderating variable in this study will therefore assist in resolving the conflicts/inconsistencies in the results of previous studies by strengthening the relationship between TQM and its antecedents in the study.

The following figure (Figure 2.2) shows the framework that depicts the relationship between TQM and KM and it is the framework that was used in Ju, Lin, Lin and Kuo's (2006).

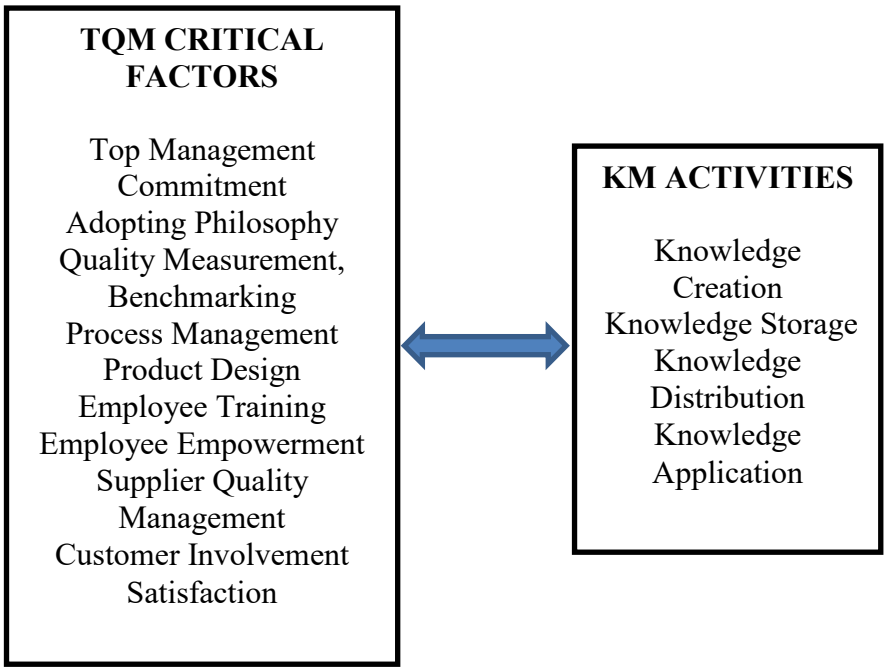

Figure 2.2 Framework of the Relationship between TQM and Knowledge Management

The previous figure (Figure (2.2) provides some explanations why Knowledge Management was chosen to be a moderating variable in this study. It could be seen from the figure that commitment is among the critical factors of TQM and at the same time commitment is one of the independent variables in this study. Similarly training is one of the critical factors of TQM. Process management is also among the critical factors of TQM and this process can be facilitated by the use of information technologies which is one of the independent variables in this study. On the same note, adopting philosophy can be understood as the organisational culture that refers to a system of beliefs and norms which is grounded on a particular philosophy adopted by the management. The figure shows how influential knowledge management activities are facilitating the way these factors (independent variables in this study) function and interact with one another. This facilitation process is

understood as a moderating process meaning that the more involvement of knowledge management, the better functions these variables achieve and in turn the more they enhance the implementation of TQM practices. However, this argument has not been validated in the literature as limited research attempted to examine the moderating impact of knowledge management on the relationships between TQM and its influential factors. This study attempts to fill in this gap in the literature regarding this matter by examining the moderating impact of knowledge management on the relationship between the independent variables of employees' commitment, information technologies and employees' capacity and the dependent variable of TQM. The following section sheds some light into the case of healthcare sector in Saudi Arabia, the focus of the current research.

2.6 Overview of Healthcare Sector in Saudi Arabia

One of the wealthiest and quickest developing nations in the Middle East is Saudi Arabia. It is the world's biggest producer and exporter of oil, which constitutes the significant segment of the nation's incomes (Ministry of Finance report, 2010). In late decades, notwithstanding, Saudi Arabia has expanded its economy, and today it delivers a mixture of modern products to nations everywhere throughout the world. The sound economy and robust industry base influence the Saudi group by expanding individuals' salary, prompting every capita wage of US$ 24,726 in 2008 contrasted and US$ 22,935 in 2007 (United Nations, 2010). The last official evaluation in 2010 set the number of inhabitants in Saudi Arabia at 27.1 million

(Central Department of Statistics and Information, 2011). The land size of Saudi Arabia is around 2,150,000 square kilometres (WHO report, 2009).

2.6.1 Saudi Economy

Before the discovery of oil in 1930, Saudi Arabia was considered to be among the poorest and least developed countries of the world. Its economy was based primarily on subsistence agriculture, nomadic livestock and funds brought in by pilgrims. Major sources of revenue were pilgrims, Zakat (a form of tax deducted from the rich and distributed among the poor as requested by Islam), trade, agriculture, livestock (pastoral) and custom duties (Al-Assaf, 1987). Though oil was discovered in the 1930s, large-scale production did not begin until after World War II. Prior to the oil price increase in 1973, the economic structure of the kingdom was extremely backward. Modest economic developments were achieved in the 1950s and 1960s. The majority of the population was involved in subsistence agriculture or animal grazing and lived in rural communities (Al-Shaikh, 1993).

Before oil returns came to the surface, the majority of the population was involved in non-skilled employment. The population had never been engaged in economic activities, leading to a lack of skilled labour and productivity structure that posed serious constraints. With the discovery of oil came the modernization of economic sectors such as agriculture and industry, in addition to some improvements in infrastructure base (Ibid., 1993).

When the Saudi government started exportation of oil in the 1970s, the economic as well as social structure of the kingdom began growing at a fast rate. This growth was achieved by increasing reliance on the low-cost foreign skilled labour force, semi-skilled workers and non-skilled workers in different areas of development. Foreign workers were imported due to the unavailability of skilled Saudi workers. Therefore, the kingdom had to rely on outsiders to run developmental projects. The lack of professional capabilities among Saudis created a threat to the future economy. Thus, the government instituted a massive investment in its people through the educational process in order to minimize as much as possible foreign employment.

It is worth mentioning that Saudi Arabia is deemed one of the largest producers of oil worldwide. The kingdom holds an estimated 260 billion barrels, accounting for more than one-quarter of world oil reserves. Due to the sharp increase in oil prices in 1974, Saudi Arabia became one of the fastest growing nations in the world. High prices led to the development of more oil fields internationally as well as reduced oil consumption; the result was a worldwide oil glut. Saudi oil production, which had increased to almost 10 million barrels per day during 1980-81, dropped down to about 2 million barrels per day. Facing budget deficits, the country gave up its role as a swing producer within OPEC and accepted a production quota. Since then, Saudi oil policy has been guided by a desire to maintain market and quota shares.

The government and legislature has looked to designate its oil pay to change its generally undeveloped oil-based economy into that of an advanced modern state

while keeping up the kingdom's conventional qualities and traditions. Reliance on oil proceeds, however the legislature is effectively making stride towards decreasing this reliance and expanding its economy. For instance, industry and horticulture now represent an expansive offer of financial action. Be that as it may, lack of gifted Saudi labourers still remain a hindrance to financial expansion and improvement, and still there are huge quantities of non-Saudis utilized in the nation. Government is presently effectively seeking after the goal of utilizing Saudi nationals and is additionally giving careful consideration to instruction for its kin so that later on it can lessen its reliance on outsiders (Council of Ministries, 1994). The Saudi government actively realizes the need for diversification in the economy and is taking steps towards this which is also reflected in its five-year development plan and in its statement of national policy starting from 1974.

2.6.2 Healthcare Sector Background

Most developing countries, including Saudi Arabia, have started to focus the attention on the quality of health services and acquiring new knowledge, information, equipment and techniques. However, having these things is not enough to create health services with good quality. It is, therefore, necessary to prepare management staff who are capable of understanding the essence of quality of services, and who are capable of creating databases and information systems, and also capable of abandoning cultural challenges that hinder the improvement of health services. (Aljunid, 1996).

Quality of life in any country largely depends upon an effective and efficient health system. The success of health care providers in achieving their objectives overwhelmingly depends upon the effectiveness of their technical and professional staff as well as on other key stakeholders. Since managers are working on the most dynamic elements in developing and promoting the health industry, the quality and performance level of health facilities depends on the quality of their managers and other professionals, their background characteristics, their cultural traits and so on. Furthermore, quality of health services depends on other factors such as meeting customer satisfaction and expectations.

The health care system in Saudi Arabia can be classified as a national system, financed by government and directed by the Ministry of Health, augmented by the private sector, which is introducing health care services under the supervision of the Ministry of Health but whose services are not free. In the national care system, the government provides care services through a number of government agencies. In the meantime, there is a growing role and increased participation from the private sector.

The Ministry of Health (MOH) is the main governmental organization entrusted with the provision of preventive, curative and rehabilitative health care for the Saudi population. The Management of Hypertensions (MOH) gives well-being administrations at three levels: essential, auxiliary and tertiary. Primary Health Care (PHC) focuses supply essential consideration administrations, both preventive and corrective, alluding cases that oblige more propelled consideration to open healing

facilities (the optional level of consideration). Then again, cases that need more intricate levels of consideration are exchanged to focal or specific healing centres (the tertiary level of medicinal services).

The Ministry of Health observes over 2,037 centres that give essential medicinal services administrations. It additionally runs around 244 doctor's facilities, which give consideration administrations to patients who need uncommon social insurance after a referral from an essential consideration focus. The principle parts of MOH are to oversee, plan, fund and manage the medicinal services part.

There are also three semi-governmental agencies that finance and deliver primary, secondary and tertiary health care to specific enrolled security and armed forces populations. These are:

(a) Ministry of Defense and Aviation (MODA).

(b) Ministry of Interior (MOI).

(c) Saudi Arabian National Guard (SANG).

Also, more than 20 organizations provide health care to their staff. Public spending on health is financed through the government’s budget.

The MOH is the significant government supplier and generator of human services in Saudi Arabia. Its 244 healing facilities (33,277 cots) and 2,037 essential social insurance (PHC) focuses embody 60% of the aggregate wellbeing administrations in Saudi Arabia. Extra government bodies incorporate referral doctor's facilities (e.g.

Ruler Faisal Specialist Hospital and Research Centre), security powers medicinal administrations, armed force strengths therapeutic administrations, National Guard wellbeing undertakings, Ministry of Higher Education doctor's facilities (showing healing centres), ARAMCO clinics, Royal Commission for Jubail and Yanbu wellbeing administrations, school wellbeing units of the Ministry of Education and the Red Crescent Society. Except for referral healing centres, the Red Crescent Society and the showing doctor's facilities, each of these orgs gives administrations to a characterized populace, typically representatives and their wards. Also, they all give wellbeing administrations to all Saudi occupants amid emergencies and crises (Figure 2.3) (Health Statistical Year Book, 2009).

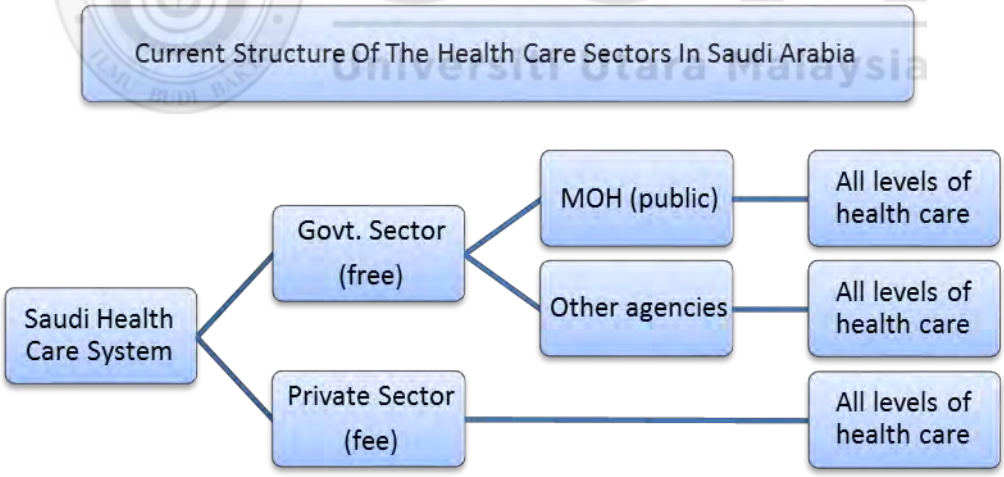

Figure 2.3 Current Structure of the Health Care Sectors in Saudi Arabia

Together, the legislature bodies work 39 healing medical centres with a limit of 10,822 beds. The private segment additionally adds to the conveyance of medicinal services administrations, particularly in urban communities and substantial towns with an aggregate of 125 medical centres (11,833 cots) and 2,218 dispensaries and facilities (Figure 2.4).

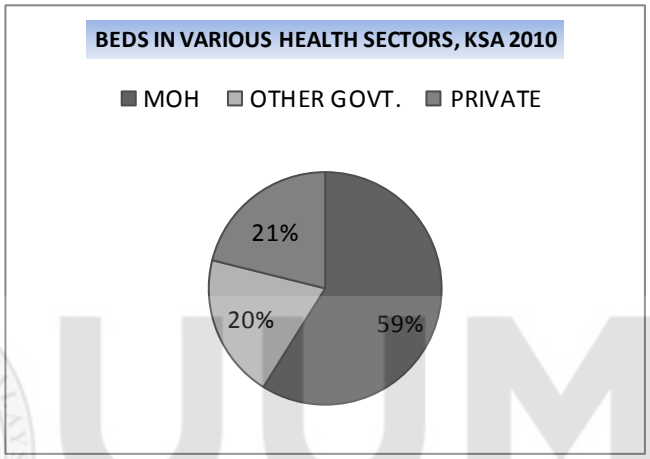

Figure 2.4 Beds in Various Health Sectors in Saudi Arabia, 2010

In terms of expenditure on health care services, Saudi Arabia spent about 6 percent of its GDP in 2007, which increased to 6.5 percent of the GDP in 2010 (Health Statistical Year Book, 2009).

In terms of expenditure on health services, private sources of finance are predominantly through private investors. This sector provides primary, secondary and tertiary health services. It is worth mentioning that hospitals in the private sector have the latest diagnostic and other medical equipment. There is an indirect

competition between the private and public sectors in relation to highly provisioned specialised services (ABQZawaya Ltd., 2009).

Although the Saudi government has spent a large amount of money on developing the health sector and as to achieve higher quality of services, those services have not reached the level of the private sector. The decrease of productivity capacity is still a persistent issue, which public enterprises do not seem to overcome. This is partially attributed to the inefficiency and inflexibility of management and its inability to cope with an unstable environment. For example, personal management is practiced without effective methods, and because of the scarcity of a well-qualified workforce, the returns on investment in the industrial base are woefully inadequate. In spite of the investments allocated to the industry for development, there is an ample drop in the efficiency of its companies (Agnaia 1997; Porter and Yergin, 2006).

2.6.3 Public and Private Health Sectors in Saudi Arabia

In many countries around the world, patients prefer to use private sector health services despite of the higher prices and fees. There are many reasons behind this, including accessibility, shorter waiting periods, flexible hours, extended office hours and greater confidentiality in dealing with sensitive diseases such AIDS (Aljunid, 1995). In many countries, a good proportion of doctors who work for the public sector are also engaged in private sector services.

Bedu (2008) documented the distinction between public and private health sectors in Saudi Arabia. Individuals who seek health services from governmental hospitals must be employed by certain institutions (Saudi governmental ministries and departments). Furthermore, governmental hospitals accept some referrals from primary health care centres and clinics. In most cases, the care is free. For this reason, services are frequently delayed. In private hospitals, individuals can be admitted at any time, but they must have insurance coverage from certain organizations (e.g. companies) or self-coverage (paid). Therefore, patients have shorter time waiting than their counterparts in the public hospitals. Furthermore, public hospitals in Saudi Arabia are more conservative regarding compliance with cultural customs and traditions. For instance, there are separate waiting rooms for women, which give them more privacy. However, the waiting rooms are simple with no comfortable chairs and an absence of newspapers and varied reading materials to help pass the time while waiting.

In contrast, private hospitals offer comfortable chairs, televisions and assorted magazines in their waiting areas. Souqiyyeh and Shaheen (2003) argued that typical complaints regarding hospitals in Saudi Arabia focus on uncaring attitudes of and bad treatment by some staff. Nevertheless, Bedu (2008) emphasised that these luxury services reflect cosmetics and amenities rather than quality of services. Bedu (2008) built her conclusions on her own observations rather than on empirical data, which makes the facts uncertain.

2.7 Theoretical Underpinnings

A number of theories have been adopted to form the basis upon which the present study is grounded. To explain the nature of the relationship between the independent variables of employees' capacity, employees' commitment, and information technologies from one side and TQM practices from the other while at the same time considering the moderating effect of knowledge management, two theories have been adopted. The first theory is the Contingency Theory of Schuler (2000) and the second one is the Resource Based View Model of Barney (1991). The following section addresses these theories.

2.7.1 The Contingency Theory

The Contingency Theory states that an organization may pursue various or multiple strategic choices. It also posits that an organization can select from among many available choices that are dependent on and contingent upon the environment in which the organization operates (Schuler, 2000). In fact, in contingency theory, the concept of "fit" has crucial importance as it has been defined in many ways, including consistent with, contingent upon and aligning (Venkatraman, 1989b). In other words, the concept of "fit" or "match" is the basic premise of contingency theory (Lawrence & Lorsch, 1967). Therefore, research scholars of contingency research and strategic management have emphasised the necessity of the fit between organizational strategy and some of the organizational variables as the key prerequisite for critical performance (Selto et al. 1995, Van de Ven & Drazin 1985).

Although it has been emphasised that fit is the main issue in contingency theory, the term has been clearly defined (Van de Ven & Drazin 1985). Specifically, “fit” has been defined using three approaches, namely the selection approach, the interaction approach, and the system approach. While the selection approach refers to the fit as the correlation between the environmental variables and the organizational variables, the interaction approach examines the interaction between organizational variables and the environment. Moreover, the system approaches consider the effect of this interaction on performance.

Furthermore, in the literature of contingency theory, it has been widely argued that organizational performance could be improved if there is an effective alignment of the key organizational variables (Naman & Slevin, 1993). According to the contingency theory, the relationship between two variables is contingent upon the level of the third variable. Therefore, it was highly recommended that introducing a moderator variable into the relationship between two variables may permit more specific understanding and prevent misleading conclusions regarding the contingency relationships. To better understand the inconsistent findings regarding the relationships between organizational strategies and organizational performance, contingency theory had a primary contribution to the development of management sciences (Venkatraman 1989b).

In an attempt to better explain and understand the effect of the independent variables (employees' capacity, employees' commitment, and information technologies) on the dependent variable (TQM), the literature suggested some of the potential moderating variables (Prajogo and McDermott, 2005; Sila and Ebrahimpour, 2005). One of the most hypothesised organizational variables with potential moderating power between organizational strategies (Independent Variables) and TQM (Dependent Variable) is the Knowledge Management (KM). Another variable that was suggested to moderate the impact of the independent variables on TQM is the construct of organisational culture. However, the construct will not be included in this study as it has been utilised by recent research studies conducted in the healthcare sector in Saudi Arabia, namely the study of Alharbi (2012). Instead, the construct of knowledge management will constitute the moderating variable in this study as it has not been tested in previous research studies in the region.

As it has been discussed earlier, the major purpose of this study is to examine impact of a number of organisational factors on TQM practices in the Saudi public healthcare sector. This impact is also examined in the presence of the moderating variable of KM. This means that an organisation (hospital) can enhance the impact of the independent variables of employees' capacity, employees' commitment, and information technologies on TQM practices through making a perfect fit through managing the knowledge within the different departments of the hospitals so that all the previous factors are shared by all the employees working there. In other

words, it has been mentioned that according to the contingency theory, the relationship between two variables is contingent upon the level of the third variable and how this third variable can help in the alignment process (fit) between other variables (independent and dependent in this study). Thus, contingency theory is selected to form the ground of this research mainly to service the purpose of explaining the moderating influence of knowledge management.

Another theory that is adopted to form the theoretical ground of this study is the Resource Based View theory (RBV). The following section addresses this theory together with the argument why it is believed that this theory fits the framework of the study.

2.7.2 The Resource Based View

The resource based view (RBV) is a theory in the management field that focuses on the way organisations make use of their assets and resources for the purpose of gaining a competitive advantage in the market (Barney 1991; Wernerfelt 1984). Specifically, the founders of the theory believe that any given organisation possesses a number of resources that would allow it to secure a competitive advantage and such resources can help organisations to ultimately enhance their performance and sustainability (Barney, 1991). Apart from that and more importantly, RBV is grounded on the idea that the mentioned resources within the organisation provide it with the uniqueness that sets it apart from other competing organisations and this would in turn help it secure this competitive advantage.

The asset based perspective includes a climbing and predominant region of the technique writing which addresses the subject of an association's personality and it is chiefly concerned with the source and nature of vital capacities. The asset based viewpoint has an intra-hierarchical centre and contends that execution is a consequence of firm-particular assets and abilities (Barney, 1991). The premise of the asset based perspective is that fruitful firms will discover their future intensity on the improvement of different and extraordinary abilities, which might regularly be implied or impalpable in nature (Teece et al. 1991). Consequently, the quintessence of methodology is or ought to be characterized by the organizations' extraordinary assets and abilities. Moreover, the worth making capability of technique, that is the firm's capacity to secure and maintain a beneficial business sector position, discriminatingly relies on upon the rent producing limit of its hidden assets and capacities (Conner, 1991). For Barney (1991) if all the organisations were equivalent regarding resources there would be no productivity contrasts among them in light of the fact that any procedure could be executed by any firm in the same business. The basic rationale holds that the maintainability of impacts of an aggressive position lays principally on the expense of assets and abilities used for actualising the technique sought after. This expense can be examined with reference to key variable markets (Barney, 1986a), that is markets where essential assets are gained. It is contended that vital component markets are incompletely focused, in light of distinctive desires, data asymmetries and even good fortune, with respect to the future estimation of a key asset.

The RBV perspective proposes that game changer and execution results are an outcome of firm-particular assets and abilities that are excessive to duplicate by different contenders (Barney, 1991). These assets and capacities can be critical components of practical game changer and unrivalled firm execution in the event that they have particular extraordinary attributes. These assets ought to be significant, expanding productivity and viability, uncommon, incompletely imitable and non-substitutable (VRIN) (Barney 1991). Thus,, a given firm may have the capacity to maintain its game changer in the business through its capacity to recognize, create, convey, and safeguard specific assets and recognise these from its adversaries in order to encourage its accomplishment in a focused business (Carmeli & Tishler, 2004).

Asset as for the most part characterised as those advantages possessed or controlled by a firm (Amit & Schoemaker, 1993). As indicated by Wernerfelt (1984) "a company's assets are those substantial and elusive resources tied semi-for all time to the firm" (Wernerfelt, 1984, p. 172). Substantial assets are those physical things (tangible assets) or resources inside an organization for example, hardware, offices, crude materials, and gear (Carmeli & Tishler, 2004). On the other hand, impalpable assets (intangible assets) are those benefits distinguished as abilities, information, recognitions, item notoriety, society of the organization but more importantly employees working in organisations (Peteraf, 1993).

The theory of RBV fits reasonably in the context of the current study keeping in mind that the four independent variables of employees' capacity, employees' commitment, and information technologies, represent unique resources for the organization (the hospital). They represent the intangible resources that were addressed by Peteraf (1993). In this context, the hospital that utilizes these factors in a dynamic and intelligent way and more importantly in a way that responds accordingly to the market (satisfying customers through providing quality healthcare services) is more likely to perform better as this utilization will have an effect on quality of healthcare service in the hospitals. The philosophy of adopting RBV as the theory upon which the study is grounded stems from the idea that the theory states that there is a relationship between the resources that companies have and the performance of these companies keeping in mind the strong relationship between TQM and organisational performance. So, the better utilization of such resources, the better competitive advantage organizations has which in turn leads to better organizational performance. In other words, these factors (Independent Variables) play the role of the unique resources that companies should have and could intelligently utilise in order to secure a better competitive advantage in the market and this competitive advantage is created and secured through ensuring that TQM practices are utilised. All this leads to the idea that adopting the RBV theory fits well in the context of the current research.

2.8 Theoretical Framework

It has been mentioned earlier that the study attempts to identify the determinants of TQM practices in the Saudi public healthcare sector by examining the impact of a number of factors on the implementation of TQM practices. Apart from that, the study also attempts to examine the moderating impact of knowledge management on the relationship between the antecedent factors and TQM practices. Specifically, there are three hypothesised determinates that are investigated in this study and these three determinants of TQM practices constitute the independent variables. These variables include information technologies, employees' capacity, and employees' commitment while TQM practices constitute the dependent variable in this study. Finally, the impact of the independent variables on the dependent variable is examined though the moderating variable of knowledge management. Thus, all these variables are shown in the following figure (Figure 2.5) which represents the theoretical framework of the study.

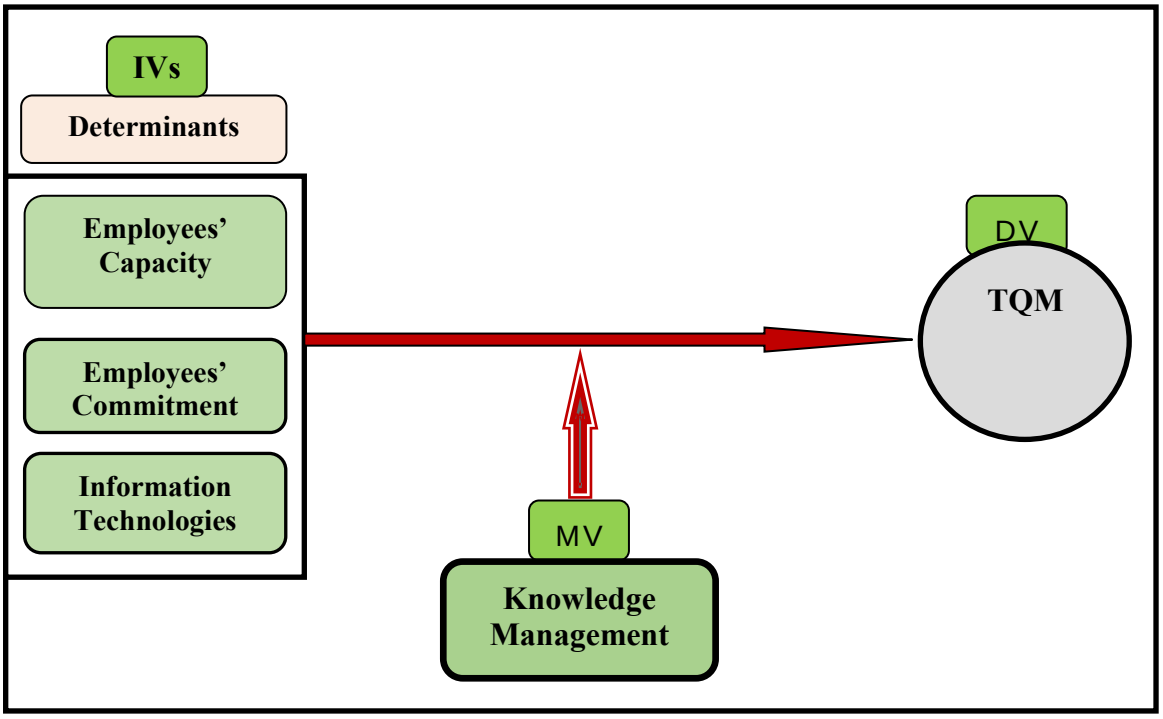

Figure 2.5 Theoretical Framework of the Study

2.9 Chapter Summary

The primary goal of this study is to examine the impact of a number of factors on TQM practices in the Saudi public healthcare sector. These factors represent the independent variables in the study and they include employees' capacity, employees' commitment, and information technologies. This impact is also investigated through the moderating influence of knowledge management being the moderating variable in the study. The chapter was constructed in a way that achieves these objectives. Specifically, the chapter presented an overview about each of these variables including their definitions, foundations and historical development. The chapter then concluded with some of the theories that were adopted to form the theoretical ground of the study together with the theoretical framework that is designed for the study.

The following chapter presents the hypotheses that are designed for this study together with the study's theoretical framework.

CHAPTER THREE

HYPOTHESES DEVELOPMENT

3.1 Introduction

This chapter aims to conceptualise the relationship between constructs of the hypothesised model. It begins by demonstrating the direct impact between the predictors and the outcome variable. Then, it presents the moderating role of knowledge management on the relationships between the independent variables and dependent variable. The chapter is concluded with a summary of its premises.

3.2 Employees' Commitment – TQM Link

It has been mentioned earlier that the construct of TQM is viewed by many researchers and practitioners as a managerial philosophy whereby employees in a given organisations work together within the distributed responsibilities to ensure organisational objectives are achieved and this means that every single employee has a role to play in achieving these objectives (Hietschold, Reinhardt, & Gurtner, 2014). Therefore, employees' commitment reflects the support and also the involvement of individuals across all range of an organisational hierarchy (Grover, Agrawal, & Khan, 2006). What this means is that committed employees are believed to possess a clear understanding of the values, policies, and strategies of the organisation. In addition to that, committed employees are seen to possess a clear vision about how the available resources within an organisation should be utilised to achieve the end

goals of these organisations (Grover, Agrawal, & Khan, 2006). As such, the aforementioned individuals are posited to be able to implement designated procedural changes in favour of achieving a better quality (Das, Paul, & Swierczek, 2008).

Furthermore, empirical results unveiled that employees' commitment positively elicit a number of performance indicators (Nair, 2006). For instance, Zhang, Waszink, and Wijngaard (2000) argued that commitment is associated with a parsimonious resources utilisation and the motivation to achieve objectives related to quality achievement. In addition, Brah, Tee, and Rao (2002) link employees' commitment to higher willingness to adapt changes in terms of organisational culture and pursuing goals related to TQM. In that sense, it is observed that employees' commitment facilitate the achievement quality strategies, policies and tactics in response to the higher management designation of the aforementioned forces as driver to TQM deployment (Welikala & Sohal 2008). Therefore, it is posited that TQM principles adoption by employees is the manifestation of their commitment. Thus and on the ground of this mentioned discussion and also in line with the RBV theory of Barney (1991), the following hypothesis is generated.

Hypothesis 1: There is a positive relationship between employees' commitment and TQM practices.

3.3 Employees' Capacity – TQM Link

Employees' capacity and nurturing of such individual's quality through training and other means are considered as quality indicators. Moreover, they are critical in the enhancement of employees' empowerment and involvement, making them preconditions of the deployment of TQM (Hietschold, Reinhardt, & Gurtner, 2014). Capable employees attain higher aptitude in dissecting quality related concepts and application and the multiple roles the tackle under the veil of TQM (Claver, Tari, & Molina, 2003). As such, capable employees who are equipped with the necessary skills are more likely to have the knowledge required to utilise their abilities in making key construction contribution toward the implementation of TQM (Rao, Solis, & Raghunathan, 1999). To that effect, it is established that cost occurring as a result of the enhancement of employees' capability are considered as key investments rather that costs; particularly, when such investment is made to achieve a better TQM implementation (Das, Paul, & Swierczek 2008).

To that end, it is worthwhile to acknowledge that there are empirical evidence regarding the nexus between capabilities as independent forces and quality performance as an outcome variable. For example, Solis, Raghu-Nathan, and Rao (2000) findings suggest a direct relationship between capable employees and the quality of their performance. It is also argued that capacity, under the reviewed conditions and in reconciliation with the contingency theory (Schuler, 2000) and resources-based view (Barney, 1991), is directly related to the achievement of TQM, and thus posited as TQM practice (Rahman & Bullock, 2005). Moreover, under

these settings, training facilitate the achievement of team empowerment, the utilisation of effective reward system (Lau, Zhao, and Xiao, 2004). It is believed that when employees' capabilities are enhanced, this will in turn cover broad perspectives, manifesting in better learning, more knowledge regarding TQM implementations (Claver, Tari, & Molina 2003, Das, Paul, & Swierczek 2008). Instigated by the previous review and in reconciliation with Valmohammadi (2011), the researcher posit a positive relationship between employees' capacity, as an independent variable, and TQM as a dependent one.

Hypothesis 2: Employees' capacity is positively associated with TQM practices.

3.4 Information Technologies – TQM Link

Information technologies (IT) are associated with the successful deployment of TQM (Davenport, 1993; Hammer & Champy, 1993). IT as a managerial concept evolved from a reengineering tool to a strategic resources-based approach in the pursuit of TQM implementation (Bull, 2003; Motwani, Kumar, & Anthony, 2004). The utilisation of IT tools as a function of quality performance has its presence along various industries and across firms of different sizes and capacities (Stoddard, Jarvenpaa, & Littlejohn, 1996; Candler, Palvia, Thompson, & Zeltmann, 1996). Scholarly research associate the employment of IT tools with the achievement of the aforementioned objective (Shani, Moon, & Bowles, 1998). Hence, IT tools provide firms with the flexibilities required to carry out the redesign of process in order to pursue TQM (Brynjolfsson, Hitt, & Yang, 2000). Extrapolating on Barney's (1991)

assessment and in reconciliation with Schuler's (2000) theory, the previous notion is resulted from the ability of improvement of information capabilities through the utilisation of modern IT tools, given that such capabilities were not available in previous settings (Davenport & Short, 1990); though, such capabilities are associated with the enforcement of TQM (Hitt & Brynjolfsson, 1997; Morrison, 1997).

For instance, certain software might offer a firm with the ability to integrate its data infrastructure across that firm's departments and offices. That in turn could allow work cells to function data required to achieve a particular task in a timely manner. Broadband networks are believed to facilitate information sharing in a timely manner, regardless of the employee's location. The utilisation of business intelligence application is thought to enhance firm's design in a way that makes it more effective in analysing available data. To that end, scholarly researches suggest that IT play a crucial role in the successful implementation of TQM (Davenport, 1993; Hammer & Champy, 1993). Hence the improvement of information capabilities, albeit through the employment of IT tools, is a strategic task for the facilitation of the realisation of TQM (Bresnahan, Brynjolfsson, & Hitt, 2002). Furthermore, organisation of high levels of IT investment are posited to portray larger decentralised platforms of decision making, utilises self-managed units, and demonstrate greater degrees of cross-functional integration (Hitt, & Brynjolfsson, 1997).

Such practices are associated with practices that leverage automating and informing capabilities of technologies that aim to organisational restructure, and changing the types and forms of human resources management and decision authority, which in turn nurture better TQM practices (Brynjolfsson & Hitt 2000; Cooper, Watson, Wixom, & Goodhue, 2000). Business units within a firm, for instance, are argued to be more effective when IT capabilities are integrated to achieve information and knowledge sharing to prove member of such units with the data and expertise required to achieve certain task (Melville, Gurbaxani, & Kraemer, 2007). In this sense, IT capabilities are believed to enhance employees efficiency and effectiveness, eliciting positively TQM practices, and thereby, the profitability of an organisation (Kohli & Hoadley, 2006). As such, numerous studies acknowledge the implication of IT investment of an organisation on the quality of employees performance and the ease of TQM implementation (Ramirez et al., 2010). Taken altogether, the researcher posits that IT is associated with TQM.

Hypothesis 3: Information Technologies is positively associated with TQM practices.

3.5 The Moderating Impact of Knowledge Management

The construct of knowledge management is understood in terms of process-oriented perspective which is manifested as a set of strategic processes designed to gain knowledge from different sources then move to the next step of handing this knowledge through accessing, evaluating, storing, sharing, and implementing this

knowledge within the given organisation (Alavi & Leidner, 2001; Lee & Choi, 2003; Sabatier, et al., 2005). In an attempt to establish the moderating impact of KM on the relationships between the study's independent variables and its dependent one, and also in accordance with Uhlaner, van Stel, Meijaard, and Folkeringa (2007 in Barney's (1991) RBV, it is proposed that for an organisation to enhance the application of the practices of TQM, it is required to efficiently manage the knowledge it acquires from different sources as suggested by Penrose (1995).

Moreover, knowledge management is thought to be a core strategic concept that is tight to strengthening, or alternatively weakening, the relationships between various predictors of TQM, as independent variables, and the implementation of TQM practices, as an outcome variable (Zheng, et al., 2010). Though, in marketing, the performance of knowledge management is associated with gaining competitive advantage over rivals in the market (Meihami & Meihami, 2014). To that effect, it is important to state that, although at the tentative level, the cultural orientation of an organisation, information technology, employee-based constructs are viewed as independent variables and knowledge management is thought to be a moderating force over the aforementioned predictors relationship with TQM practices (e.g., Gold et al., 2001; Zaied, 2012; Rasula, et al., 2012). Knowledge management capabilities (i.e., knowledge acquisition and application) have their worth in eliciting the relationship between the mentioned independent forces and firms' performance in regards to TQM practices likelihood of success (Jennex, et al., 2012; Salimi, et al., 2012). Nevertheless, it is noteworthy that apart from the aforementioned hypothetical

moderated paths, knowledge management is commonly utilised as a predictor of performance, productivity, effectiveness, competitive advantage, innovative capability and much more (Maharen, et al., 2009; Kisseling, et al., 2009; Vaccaro, et al., 2010). Extrapolating on the sections of this chapter a number of constructs are posited to maintain a direct relationship with TQM practices. Additionally, the following review builds on the previous conceptualisation and argues the moderating impact of knowledge management.

Retrieving from earlier review, employees' commitment is argued to maintain a positive influence on TQM practices (Hietschold, Reinhardt, & Gurtner, 2014; Grover, Agrawal, & Khan, 2006; Das, Paul, & Swierczek, 2008; Mehra, Hoffman, & Sirias, 2001; Chen et al., 2002; Lakhal, Pasin, & Limam, 2006; Yusof, & Aspinwall, 2000; Nair, 2006; Welikala & Sohal 2008). In line with Barney's (1991) resources-based view, knowledge management reflects an organisational capability that is expected to elicit the relationship between employee's commitment and TQM practices. To that effect, a number of studies support the notion that knowledge management is a forceful factor on the nexus between employees' commitment and TQM implementation (Eppler & Sukowski, 2000; Fong, 2003; Liebowitz & Megbolugbe, 2003). Hence and guided by the mentioned discussion, KM could have the ability to enhance the levels of commitment and also the support of TQM practices through managing knowledge and sharing it across all parties invloded in the organisation (Lindner & Wald, 2011). Thus, the following hypothesis is generated.

Hypothesis 4: Knowledge management strengthens the positive relationship between employees' commitment and TQM practices.

Extrapolating on existing literature and in reconciliation with the contingency theory (Schuler, 2000) and resources-based view (Barney, 1991), employees' capacity is posited to be associated with TQM practices (Zhang, Waszink, & Wijngaard, 2000; Lau, Zhao, and Xiao, 2004; Claver, Tari, & Molina 2003; Das, Paul, & Swierczek 2008). However, it is argued that employees' capacity is not sufficient for effective implementation of TQM (Rahman, Ng, Sambasivan, & Wong, 2013). Moreover, it is believed that for successful implementation of TQM through the enhancement of employees' capacity, there has to be greater levels of obtained knowledge sharing and utilisation (Yao, 2014). That said, the empirical investigation of the relationship between employees' capacities, as an independent variable, and organisational effectiveness support the premise that knowledge management strengthens the relationship between the two constructs (Rahman, Ng, Sambasivan, & Wong, 2013). Guided by this review and in line with the contingency theory (Schuler, 2000) and resources-based view (Barney, 1991), the researcher posit the following hypothesis.

Hypotheses 5: Knowledge management moderates the positive relation between employees' capacity, as an independent variable, and TQM practices.

On the basis of contingency theory (Schuler, 2000) and resources-based view (Barney, 1991) and building on scholarly arguments (Bresnahan, Brynjolfsson, & Hitt, 2002; Brynjolfsson & Hitt 2000; Cooper, Watson, Wixom, & Goodhue, 2000;

Melville, Gurbaxani, & Kraemer, 2007, Kohli & Hoadley, 2006; Ramirez et al., 2010) the direct relationship between IT and TQM was proposed. That is to say, IT is positively associated with TQM practices. Nevertheless, the literature argues that knowledge management is a necessary precondition for IT infrastructure to be performed in an effective manner, (Gupta & Govindarajan, 2000; Karlsen & Gottschalk, 2004). The existence of proper knowledge management is believed to ease and facilitate multidirectional communications between business units (Lindner & Wald, 2011). Moreover, IT infrastructure has a critically positive influence on storing and retrieving relevant knowledge, in terms of time and cost (Bresnen, et al. 2003); and thus, it is thought to improve TQM implementation (Leseure, et al., 2004; Sapsed, et al., 2005). Prior research predicted a positive influence of Knowledge management on the relationship between IT and TQM practices (Lindner & Wald, 2011). Taken altogether, the next hypothesis is conceptualised.

Hypothesis 6: Knowledge management moderates the positive relationship between IT and TQM practices.

3.6 Chapter Summary

Guided by the conceptual model, the current chapter inferred four direct relationships. It also posited four moderated relationships. This chapter presented the hypotheses of the study and these hypotheses represented the links between the study's variables. These links are either direct relationships between the independent variables and the dependent one or the moderating impact the knowledge

management has on the relationships between the independent variables and the dependent one. The following section addresses the methodology that is used in this study.

CHAPTER FOUR

METHODOLOGY OF THE STUDY

4.1 Introduction

The methodology chapter of this study is designed to be in line with the primary objectives of the study. To do so, the chapter embarks on the study's research design followed by detailed discussion on the study's instruments used to measure its different variables (independent, dependent, and moderating). These variables include the independent variables of information technologies, employees' capacity, and employees' commitment, the dependent variable of total quality management (TQM) and finally the moderating variable of knowledge management. Detailing the population and sampling is then presented which is then followed by how data is collected and saved for later analysis. Analysis techniques come next in the chapter which then followed by the last section on ethical considerations. The following section discusses the research design upon which the present research is grounded.

4.2 Research Design

The concept of research design is highly important in any research and it represents the structure or the skeleton of the research. In a research design, some critical components are included and such components include the measures that are used, the samples that are utilised for the sake of collecting the data, the technique data is collected, together with the techniques used to analyse the collected data (Creswell, 1998). As far research design is concerned, this research utilises a research design in

which quantitative method of research is incorporated. This quantitative part of the study includes a set of questionnaires to collect data on the variables of the study, namely the antecedent factors of information technologies, employees' capacity, and employees' commitment, the dependent variable of total quality management (TQM) and the moderating variable of knowledge management. As far as literature review on total quality management and the factors that influence its provision, most of the studies that have been conducted on the field utilized quantitative research designs for the purpose of collecting their data (Brown & Duguid, 2003; Karassavidou, Glaveli & Papadopoulos, 2008; Alharbi, 2012, Alharbi, 2014). The following section addresses the research instruments which represent the measures through which the data on the study's variables are collected for further analysis.

4.3 Research Instrument

There are three main variables in the present research; independent, dependent and moderating. The independent variables include the antecedent factors that have been hypothesized to influence the provision of total quality management (TQM) in healthcare. The dependent variable in the present research includes total quality management (TQM) in healthcare sector in Saudi Arabia. Finally the moderating variable in this research is knowledge management. In this present research, a questionnaire is used as the main research instrument. The items that are used in the questionnaire are all adapted from well-established measure in the literature on total quality management and the variables that influence its provision. The following section addresses the measures that are used in the questionnaire.

4.4 Measurements

The suitable and accurate choice of measurement is critical in research and it is regarded as one of the most important steps in methodology. Furthermore, the hypothesised model incorporates a number of latent variables, which are projected using one or more dimensions of each entity or construct. Apart from that, the dimensions of these variable are derived based on theoretical and empirical background and references which in turn guided the conceptualisation of this thesis premises. That said, the framework that has been designed for this study includes some independent variables, a moderating variable together with a dependent one. The following sections address the measurement scales of all these constructs.

4.4.1 Independent Variables

It has been stated earlier that the study employs a theoretical framework which includes four independent variables, namely information technologies, employees' capacity, and employees' commitment. The following sections address the measures for each of these variables.

4.4.1.1 Employees' Capacity

The importance of employees' capacity is stressed, given it is central role in continuous organisational improvement (Deming, 1986). Though, empirical research unveiled the critical influence of employees' capacity on TQM's successful implementation (e.g. Mann, 1992). Research on organisational behaviour realisation of the inevitability of nurturing employees' capacity as integral forces of TQM

initiative. In other words, investments targeted at the improvement of employees' capacity and the enhancement of training programmes is believed, and statistically supported, to be vital for the successful deployment of TQM practices.

In reconciliation with contingency theory (Schuler, 2000) and resources-based view (Barney, 1991), employees are posited to be acknowledged as invaluable, long-term resources worthy of substantial investments throughout their careers. In that sense, it is important for all personnel, management, supervisors and employees, to accept the forcefulness of this construct in predicting the success of TQM practices deployment. In line with Savič and Robida (2013) and Alharbi (2014) while being guided by contingency theory (Schuler, 2000) and resources-based view (Barney, 1991), the current endeavour utilises fourteen items to tap employees' capacity. All these are measured on a 5-point Likert scale (strongly agree, agree, neutral, disagree, and strongly disagree). The following items are used to measure the first independent variable in this study, namely employees' capacity.

1. Our hospital encourages employees to accept education and training in our hospital.
2. As an employee in this hospital I am familiar with the hospital training and development programme.
3. When designing the hospital training and development programme, my views and needs are considered and taken into account by the management of the hospital.

4. Capacity for innovation, learning new skills and applying them in practice is encouraged and promoted in our hospital.
5. I am given the opportunity to suggest improvements for key projects being introduced into practice in our hospital.
6. I am given the opportunity to be actively involved in the change implementation processes in our hospital.
7. Resources are available for employee education and training in our hospital.
8. Most employees in our hospital are trained on how to use quality management methods (tools).
9. Our hospital gives quality awareness education to employees.
10. Our hospital gives specific work-skills training to all employees.
11. Our hospital regards employees as valuable, long-term resources worthy of receiving education and training throughout their career.
12. Staff members in this hospital know how to handle complaining patients.
13. Staff members in this hospital know how to handle patient problems.
14. Staff members in this hospital are able to provide good service of high quality to patients.

4.4.1.2 Information Technology

The nexus between IT and TQM doesn't reflect an unexplored territory. For long, scholars argued and supported that relationship (e.g., adrozny et al., 1992; Berkley and Gupta, 1994; Cortada, 1995). For instance, Sobkowiak and LeBleu (1996), and Pearson and Hagmann (1996) espoused the central role of IT in improving the

deployment of TQM practices. Though, it is noteworthy that in the pursuit of emphasising the critical influence of IT over the success of TQM implementations, the applications of IT along various spectrum of the aforementioned were designated (for review see, Miller, 1996; Aiken et al., 1996; Goodman and Darr, 1996; Khalil, 1996; Kaplan, 1996; Kock and McQueen, 1997; Counsell, 1997).

Research on the organisational role of IT posited a forceful role of this predictor in enhancing the way tasks are carried out by employees along a firms' power structure and facilitating change toward more effective and efficient practices (Straub and Wetherbe, 1989; Scott Morton, 1994). That said, the current study utilised a 7-item measure adapted from Lakhal, Pasin, and Limam's (2006) and Alharbi (2014) to measure the construct of information technology. It is noteworthy that the current scale of measure takes into account the consideration of contingency theory (Schuler, 2000) and resources-based view (Barney, 1991). The following items are used to measure the second independent variable in this study, namely information new technologies.

1. Our hospital presents and transmits important information to employees.
2. Our hospital collects and analyses data related to its activities.
3. Our hospital harnesses information to improve its key processes and services.
4. Our hospital has precise data about the competition used to identify areas of improvement.
5. Up-to-date appointment booking system is available in this hospital.

6. Existing information systems in this hospital have the capacity to respond to future demands in quality improvement.
7. There is an appropriate system that ensures internal communications among different departments within the hospital.

4.4.1.3 Employees' Commitment

A wide array of research on the deployment of TQM associated employees' commitment with a decrease in the chance of failing to implement such practices (Caldwell, 2012; Choi, 2011; Bell and Omachanu, 2011; Jaros, 2010; Kogetsidis, 2012; Lines, 2004; Raukko, 2009; Smith and Lewis, 2011; Ye et al., 2007). Though, extrapolating on McGee and Ford's assessment, employees' commitment is linked to the elicitation of employees' interest in the firm, which in turn manifests in higher willingness to adapt to structural changes. Hence, the construct is exemplified in terms of stronger identification with the organisation (Choi, 2011). Moreover, commitment is thought to attain nexus to the identifications of TQM goals (Alhazemi et al., 2013; Caldwell, 2011; Choi, 2011; Jaros, 2009).

Empirical findings suggest that employees' commitment is a pre-conditional requirement for the successful implementation of TQM (Herscovitch and Meyer, 2002). Additionally, commitment is linked to the motivated participation of TQM programmes implementation (Ford, et al, 2008). Constrained by contingency theory (Schuler, 2000) and resources-based view (Barney, 1991), this thesis adapts Albdour and Altarawneh (2014) measure to measure employees' commitment. As such, ten

items scale of measure is employed to measure the construct. The following items are used to measure the third independent variable in this study, namely employees' commitment.

1. It would be very hard for me to leave my hospital right now, even if I wanted to.
2. I do not feel my obligation to remain with my current hospital.
3. I would be very happy to spend rest of my career with this hospital.
4. I owe a great deal to my hospital.
5. Too much of my life would be disrupted if I decided that I want to leave my hospital right now.
6. I feel that I have too few options to consider if I decided leaving this hospital.
7. I do not feel "emotionally attached" to this hospital.
8. This hospital deserves my loyalty.
9. If I had not already put so much of myself into this hospital, I might consider working elsewhere.
10. I would not leave my hospital right now because I have a sense of obligation to the people in it.

4.4.2 The Moderating Variable of Knowledge Management

Knowledge management reflects "a systematic and integrative process of coordinating organization-wide in pursuit of major organizational goals" (Rastogi, 2000, p. 40). It is argued that the practices of knowledge management have to fit the

organisational context of TQM in order to establish a competitive edge (Davenport and Prusak, 1998). Organisational research posits an indirect role for knowledge management over a number relationships (Demerest, 1997; Rowley, 2001; Soliman and Spooner, 2000).

To that effect, it is noteworthy that for a successful TQM deployment, an effective knowledge management practices are required. Hence, "it is what the organization comes to know that explains its performance" (Argote & Ingram, 2000). Though, there are a number of studies supporting knowledge management indirect role over the success of TQM programmes. For instance, knowledge creation and sharing are found to improve, indirectly, quality performance and innovation, albeit by moderating this relationship (Darr et al., 1995; Epple et al., 1996; McEvily and Chakravarthy, 2002). Moreover, knowledge integration is thought to enhance the relationship between product development and effectiveness, and the reduction of defect density and warranty defects (Tiwana, 2004). That said, guided by contingency theory (Schuler, 2000) and resources-based view (Barney, 1991), this thesis adapts from two scales, namely Zheng, Yang, & McLean's (2010) scale and Kamran and Sabir's (2012) scale to tap knowledge management. As such, eleven items scale of measure is employed to measure the construct. The following items are used to measure the moderating variable in this study, namely knowledge management.

1- My hospital has processes for acquiring knowledge about our patients.
2- Employees in our hospital have skills that are needed to maintain high-quality services.
3- Employees in our hospital make effort to pass on their work knowledge.
4- Employees in our hospital create learning environment for themselves and other employees.
5- Employees in our hospital are eager to develop themselves.
6- My hospital has processes for distributing knowledge throughout the hospital.
7- My hospital has processes for exchanging knowledge with other hospitals.
8- My hospital has processes for inter-organizational collaboration among different departments.
9- My hospital has processes for acquiring knowledge about new product/services within our sector.
10- My hospital has team devoted to identifying the best practice as to serve our patients well.
11- My hospital has processes for exchanging knowledge between individuals.

4.4.3 The Dependent Variable of TQM

TQM reflects a managerial means for a continuous improvement (Goh and Ridgway, 1994; Hackman and Wageman, 1995) and thus, the commitment of all participants in the organisation in implementing TQM is vital (Ahire et al., 1996). TQM practices are considered critical forces that enhance the organisation chances of survival and

success. Moreover, it is also posited to be a determinant of innovation (Singh and Smith, 2004), competitive advantage (Powel, 1995; Hackman and Wageman, 1995; Douglas and Judge, 2001), change and new organizational culture (Irani et al., 2004). That said, on the basis of contingency theory (Schuler, 2000) and resources-based view (Barney, 1991), this thesis adopts Alharbi's (2012) scale to tap TQM practices. Alharbi's (2012) study, like this study, also attempted to examine the concept of TQM in the Saudi public healthcare sector but with some differences in terms of the selection of independent variables and also the moderating variable. The scale consists of 8 dimensions that represent TQM practices. The following table (Table 4.1) shows the measurement scale of TQM.

Table 4.1 Measurement Scale of TQM

No.	DIMENSION/ITEM
	TRAINING AND EDUCATION
1.	Hospital employees are given education and training in how to identify and act on quality improvement opportunities.
2.	Hospital employees are given education and training in statistical and other quantitative methods that support quality improvement.
3.	Hospital employees are given the needed education and training to improve job skills and performance.
4.	Hospital employees are rewarded and recognized (e.g., financially and/or otherwise) for improving quality.
	TEAMWORK AND INVOLVEMENT
5.	Teamwork and consensus are important in our hospital.
6.	Our hospital encourages employees to participate in decision making.
7.	Our hospital tries to understand the point of view of patients in defining the quality of health services.

8.	Our hospital's senior management encourages teamwork across units and disciplines.

STRATEGIC QUALITY PLANNING

9.	Hospital employees are given adequate time to plan for and test improvements.
10.	Each department and work group within this hospital maintains specific goals to improve quality.
11.	The hospital's quality improvement goals are known throughout the organization.
12.	Hospital employees are involved in developing plans for improving quality.
13.	Middle managers (e.g., department heads, program directors, and first line supervisors) are playing a key role in setting priorities for quality improvement.
14.	External customers are playing a key role in setting priorities for quality improvement.
15.	Non-managerial employees are playing a key role in setting priorities for quality improvement.

CUSTOMER FOCUS

16.	The hospital does a good job of assessing current patient needs and expectations.
17.	Hospital employees promptly resolve patient complaints.
18.	Patients' complaints are studied to identify patterns and prevent the same problems from recurring.
19.	The hospital uses data from patients to improve services.
20.	The hospital does a good job of assessing physician satisfaction with hospital services.
21.	The hospital uses data on customer expectations and/or satisfaction when designing new services.

INFORMATION AND ANALYSIS

22.	The hospital collects a wide range of data and information about the quality of care and services.
23.	The hospital uses a wide range of data and information about the quality of care and services to make improvements.
24.	The hospital continually tries to improve how it uses data and information on the quality of care and services.

25.	The hospital continually tries to improve the accuracy and relevance of its data on the quality of care and services provided.
26.	The hospital continually tries to improve the timeliness of its data on the quality of care and services provided.
27.	The hospital compares its data to data on the quality of care and services at other hospitals.
	CONTINUOUS IMPROVEMENT
28.	Associates in the hospital try to improve the quality of their service.
29.	Associates in the hospital believe that quality improvement is their responsibility.
30.	Associates in the hospital analyse their work services to look for ways of doing a better job.
	PROCESS MANAGEMENT
31.	Quality data (defects, complaints, outcomes, time, satisfaction, etc.) are available.
32.	Quality data are timely.
33.	Quality data are used as tools to manage quality.
34.	Quality data are available to hourly workers.
35.	Quality data are available to managers and supervisors.
36.	Quality data are used to evaluate supervisor and managerial performance.
	ROLE OF THE QUALITY DEPARTMENT
37.	Visibility of the quality department.
38.	Quality department's access to divisional top management.
39.	Autonomy of the quality department.
40.	Amount of coordination between the quality department and other departments.
41.	Effectiveness of the quality department in improving quality.

Source: Alharbi (2012)

4.5 Population and Sampling

Sampling is the process through which participants are selected in a way that they will be representative for whole population from which they are taken (Gay *et al*., 2006). Pallant (2007) states that researchers have not reached an agreement about the

sample size. However, majority of researchers tend to agree that a larger sample is better than a small one as the latter often lead to inaccurate correlation coefficients and hence defeats the study purpose. The population of the present study will include all the public hospitals in Saudi Arabia represented by the directors in these hospitals. Consequently, the study employs an organisational unit of analysis represented by the directors of the Saudi public hospitals. It should be kept in mind that there are 13 directorates (provinces) in Saudi Arabia and in these provinces, there are 259 public hospitals constituting the population of the present research (Health Statistical Year Book, 2012). To elaborate more on the process of percentage and selection, the following table (Table 4.2) shows the number of hospitals and their distribution in the 13 main provinces in Saudi Arabia.

Table 4.2 the number of hospitals and their distribution in the 13 main provinces in Saudi Arabia

Province	Number of Public Hospitals
Riyadh	46
Mecca	37
Madinah	20
Qaseem	18
Dammam	32
Aseer	27
Tabook	11
Ha'el	11
Ar'ar	7
Jazan	19
Najran	10
Albaha	10
Aljouf	11
Total	**259**

Source: *Health Statistical Year Book (2012)*

It has been mentioned earlier that the respondents for this study constitute the directors of the public hospitals in Saudi Arabia. The total number of these directors is 259 directors. Based on Sekaran (2003), if the population is more than 259, a recommended sample of 154 respondents would be regarded as representative of the whole population. Thus and based on this argument, 154 directors of public hospitals in Saudi Arabia will constitute the sample of this study.

Following the selection of hospitals to constitute the sample and following their categorization into groups and regions, the researcher employed random sampling to determine the subjects. Specifically, a random number table lists random numbers where the quantity of random numbers desired can be chosen along with the maximum and minimum values of the numbers in the table.

Table 4.3 Total Number of Hospital in Ministry of Health Hospitals by Region (2011)

Province	Number of Public Hospitals	Sample Size 58%
Riyadh	46	27
Mecca	37	21
Madinah	20	12
Qaseem	18	11
Dammam	32	19
Aseer	27	16
Tabook	11	7
Ha'el	11	7
Ar'ar	7	4
Jazan	19	11
Najran	10	6
Albaha	10	6
Aljouf	11	7
Total	**259**	**154**

Source: *Health Statistical Year Book (2012)*

4.6 Pilot Study

Prior to embarking on the main study which includes giving out the questionnaires to the targeted sample a pilot study has been carried out on a randomly selected sample of directors working in selected Saudi public hospitals. The purpose of running the pilot testing prior to the main field work is to make sure the items used in the questionnaires are clear and the instructions are helpful and this is done as an attempt to establish the internal consistency reliability for the study's instrument. It should be kept in mind here that the pilot test was not done for the sake of collecting data on its own but to achieve some other purposes such as learning about the process of research and its instruments, together with testing the appropriateness of the language used in the questionnaire as suggested (Glesne, 1999, p. 38).

Thus, the pilot study was conducted in a number of public hospitals in the country of KSA. To determine the number of respondents needed to run the pilot testing, limited research agreed on how many respondents are needed so the pilot testing is valid and reliable (Burns & Grove, 2005; Polit & Beck, 2004). However, many researchers in the literature on different fields of research argued that securing 10% of the final study size could be considered sufficient to run the pilot testing (Lackey &Wingate, 1998). Thus, in this study, the sample for the pilot study was conducted with 17 hospital directors which represents slightly more that the recommended 10%. The following table (Table 4.4) the findings of the pilot test.

Table 4.4 Finding of the Pilot Test

Variables	Code	Cronbach's Alpha	Item Deleted	Cronbach's Alpha when Item Deleted
Customer Focus	CF	0.868		0.868
Continuous Improvement	CI	0.806		0.806
Employees' Commitment	EC	0.483	EC4	0.643
Employees' Capacity	ECP	0.951		0.951
Information And Analysis	IA	0.934		0.934
Information Technology	IT	0.879		0.879
Knowledge Management	KM	0.872		0.872
Process Management	PM	0.837		0.837
Role Of The Quality Department	RD	0.820		0.820
Strategic Quality Planning	SP	0.832		0.832
Training And Education	TE	0.934		0.934
Teamwork And Involvement	TI	0.446	TI1	0.616

In this study, Cronbach's Alpha was used to be the indicator of the instrument's reliability, where if the Cronbach's alpha value is reported to be 0.7, this is used as an indication that this instrument or this variable is considered acceptable and this value was supported by a number of researchers in the literature such as Onwuegbuzie and Daniel (2003a). In the case where the Cronbach's Alpha value is reported to be closer to 1 value, this indicates a higher reliability and in turn a better internal consistency of the measures used in the study. In the context of this study and by looking at the figures and values in the table above (Table 4.4), one could see that all the values showed good and reliable figure values indicating good internal consistency. Even from the dimensions that scored slightly less than 0.7 value, if considering the overall Cronbach's alpha value of the variable as one construct, the

value falls within the recommended figure of 0.7. The following section addresses the data analysis of the study.

4.7 Data Analysis

In research in general and in social research in particular, the data analysis phase constitutes three main steps; the first step is cleaning and organizing the data for analysis. The second step is data description while the final step is testing the hypotheses and models that have been designed and this step is generally referred to as 'inferential statistics'. The phase of data preparation incorporates checking or keying in the data and it also involves checking the data for accuracy. On the other hand, descriptive statistics are utilised in order to describe the basic features of the data and this will allow for providing basic summaries about the nature of the sample together with a summary of the variables used in the study. In the current research, the two types of data analysis techniques (descriptive & inferential) are utilised in an attempt to describe the variables and also to examine the relationships between them. Statistical Package for Social Sciences (SPSS) has been utilised to describe the data while Partial Least Squares Structural Equation Modeling (PLS-SEM) has been utilised to test the relationships between the variables.

PLS-SEM has been used in the study due to its ability to relate a given number of independent variables to a single or even multiple dependent variables (Hinseler, Ringle & Sinkovics, 2009). The researchers further elaborate that PLS-SEM could also be utilised as a regression analysis model that has the ability to predict a given

model or more dependent variables from a set of independent ones. Apart from that, PLS-SEM could be utilised as a path model, handling causal paths relating predictors as well as paths relating the predictors to the response variables. Despite the idea that the PLS-SEM is associated with significantly less statistical power compared to other techniques such as LISREL and regression, it provides wider flexibility and accuracy when used with smaller to medium range of samples, below 300 respondents as suggested by Sanchez (2013) and Fink (2009). Considering that the current study employed a sample of 154 respondents only, the use of PLS-SEM is believed to fit better in the context of this study.

4.7.1 Descriptive Statistics

In this study, standard deviation together with the means are utilised for the sake of describing the basic features of the sample. SPSS 22 is utilised to describe the respondents' profile.

4.7.2 Factor Analysis

Principal or common factor analysis (FA) and Principal Component Analysis (PCA) are the two types of EFA (REF) (Daniel, 1990; Thompson & Daniel, 1996; Tabachnick & Fidell, 2001). According to Velicer and Jackson's (1990) assessment, the aforementioned types of EFA endeavour to reduce a set of observed constructs to a smaller set of latent factors in order to utilise the pattern matrix to provide the empirical basis for the description of the relationships between the new factors and the original constructs. Additionally, the new factors are derived from the obtained

composite scores of the new factors, which in turn facilitate the interpretation the representation of particular variables for further analyses.

However, notwithstanding that mathematical difference between FA and PCA, FA and PCA might yield similar result when the same number of factors or components are extracted (Burnett & Dart, 1997). That notion is particularly true when the constructs undergoing the analyses are highly reliable (Thompson & Daniel, 1996) and when the sample size is large (Velicer, Peacock & Jackson, 1982). That is to say, as the quality of the employed data increases (Velicer & Jackson, 1990), the degree of the similarity between PCA and FA's result rises. In this thesis, PCA is chosen to carry out this type of factor analysis.

Nevertheless, while EFA is useful in assessing constructs validity, the procedure still suffer from certain shortcomings and is subjected to a number of criticism. For instance, extracting a specific number of factors based on Cattell's scree test (Cattell, 1966) or Guttman's rule of an eigenvalues greater than 1 (Guttman, 1954) are suggested to be too subjective (Kline, 1998) or to overestimate the number of factors (Cattell, 1978), respectively. As such, depending on the number of factors decided to be retained by scholars, the names designated by them to obtained factors, and the utilised method of rotation, the same analysed correlation matrix might yield different interpretations (Comery, 1978). Following the theoretical considerations of the encompassed variables, the number of factors for the encompassed constructs are extracted. In this thesis, the orthogonal procedure is chosen as the method, given that

it is expected to result in simpler interpretation for factorial solution (Field, 2001). The other related criteria to conducting PCA in this thesis are described in the next chapter.

4.7.3 Reliability Analysis

As far as analysis is concerned, the construct of reliability represents the consistency of the measure. A technique to support the reliability of the measure is done through controlling other variables and this can be fulfilled through providing empirical evidence of participants providing the same or similar score (with minimal difference) on a questionnaire. In a statistical jargon, reliability is assumed when sets or individual items of a measure provide support for the consistency of such items with the overall questionnaire.

Split-half reliability is regarded as a simple and easy technique used for the sake of capturing the indicator. This technique splits the data into two halves where in the case if the correlation between the two halves is high, this indicates that the reliability is strong. Cronbach's alpha indicator is one of the most used scales of reliability that are now used in analysis.

Researcher did not agree on a single Cronbach's alpha value to indicate the internal consistency of the measure. However, many researchers often consider α value of 0.7 to 0.8 to be within the acceptable range of internal consistency. Lower values are regarded to suggest that the scales used are unreliable. Furthermore, before

conducting the reliability analysis, the researcher of the current study reversed the reverse-phrased items in an attempt to avoid negative Cronbach's alpha (Field 2009).

4.7.4 Hypothesis Testing

Regression analysis tests are utilised for the sake of examining the potential relationships between the study's variables, whether direct relationships or moderating relationships (Hair, 1998).

4.8 Chapter Summary

The methodology chapter described the methodology that has been employed during the process of conducting the current study. Providing a description of the research design upon which the study is grounded came first in the chapter and this was followed by a description about the measurement scales that have been used to measure the variables of the study. The chapter proceeded with providing a detailed description about the way the data was collected through the section of data collection procedures. The chapter concluded with a description about the techniques that have been utilised to analyse the data collected. Having collected the data, the following chapter (Chapter Five) deals with the findings of the research together with the discussion on the findings.

CHAPTER FIVE

DATA ANALYSIS AND RESULTS

5.1 Introduction

In the previous chapter, an explanation on how the present study was practically carried out was offered. Based on the data analysed, this chapter presents showed the results of analysis. This study first looks at the demographic profile of the respondents. In addition to that, the study describes the main variables and tests the non-response bias, descriptive statistics, multicollinearity Test and normality. The recent study employed Partial Least Squares Structural Equation Modelling (PLS-SEM) to assess the outer measurement model as a prerequisite for the inner structure model assessment; the outer model is the part of the model that describes the relationships between the latent variables and their indicators. The inner model is the part of the model that describes the relationships between the latent variables that make up the model.

Specifically, this study established the goodness of the outer model related to the constructs of this study, namely, Total Quality Management TQM which has eight dimensions (training and education, teamwork and involvement, strategic quality planning, customer focus, information and analysis, continuous improvement, process management and role of the quality department), and employees' capacity, information technology. In addition, Employees' Commitment and Knowledge Management as moderator. Once the construct validity was established, the next

process was to examine the quality of the structural model and hypothesis testing was reported.

5.2 Survey Instrument Response Rate and Data Collection Process

For this study, the unit of analysis is the organisational level represented by the directors of the public hospitals in Saudi Arabia. A survey package was mailed to 259 hospitals. One surveys were sent to each public hospital to be answered by the director. Direct phone calls to remind the respondents of their delayed response were made to increase the response rate, as recommended by Sekaran (2006). Furthermore, reminder was carried out. Also, another reminder by direct calls was placed on. 165 questionnaires were from 259 hospitals that have been contacted. Eventually, 154 complete and usable questionnaires were received to constitute the sample of the study. According to Sekaran (2006), this is an acceptable rate. Table 5.1 presents the response rate.

Table 5.1 Sample Study Response Rate (n = 154)

Questionnaire response	Frequency	Rate
Number of questionnaires distributed	259	100%
Returned questionnaires	165	63%
Usable questionnaire	154	59%

5.3 Demographic Profile of Respondents

Table 5.2 provides background information of the respondents who participated in the survey. The characteristics of the respondents include region, age and experience.

Table 5.2 Respondents' Demographic Information (n = 154)

	Frequency	Percent
Region		
Riyadh	22	14.4
Mecca	23	14.9
Madinah	22	14.4
Qaseem	9	5.8
Dammam	11	7.1
Aseer	7	4.5
Tabouk	8	5.2
Ha'el	8	5.2
Ar'ar	8	5.2
Jazan	9	5.8
Najran	9	5.8
Albaha	10	6.5
Aljouf	8	5.2
Total	**154**	**100.0**
Age		
20 - 27 years	7	4.5
28 - 35 years	29	18.8
36 - 43 years	66	42.9
44 - 50 years	39	25.3
Above 50 years	13	8.4
Total	**154**	**100.0**
Experience		
Below 3 years	19	12.3
3 - 7 years	24	15.7
7 - 11 years	12	7.8
11 - 15 years	20	13.0
Above 15 years	79	51.3
Total	**154**	**100**

As shown, majority of the respondents were Riyadh (14.4%), Mecca (14.9%), and Madinah (14.4). In addition, close to half of the respondents had a high work experience of more than fifteen years (51.3%) and majority of them were less than 15 years. Finally, range of age between 36 and 43 was the highest which equals to 42.9% from all the respondents.

Sample representativeness is a key requirement for using random simple sampling to meet the objectives that the sample is representative of the population of interest (Hail et al., 2010). Whether upward classification, looking for relationships, and simplifying data, stratified sampling results are not generalizable from the sample unless representativeness is established (Hail et al., 2010). All issues concerned with data collection were addressed adequately to ensure that the sample was representative of the public hospitals. Thus, the sample findings can be safely extended to the population of public hospitals in Saudi.

5.4 Testing Non-Response Bias

As indicated earlier, this study employed a survey questionnaire for data collection. The questionnaires were self-administered in all the locations. However, it was necessary to conduct non-response bias for the reasons that many respondents responded only after many reminders and repeated visits were given.

In order to assess non-response bias, t-test was conducted to compare early and late respondents on the main variables. Following the suggestions of Armstrong and

Overton (1977), and Kannan, Tan, Handfield, and Ghosh (1999), if the differences between late and early respondent were found to be significant, non-response bias may occur and hence may invalidate the finding.

In this study, 48 respondents were classified as late response while 106 as early response on all dimensions Total Quality Management TQM which has eight dimensions (training and education, teamwork and involvement, strategic quality planning, customer focus, information and analysis, continuous improvement, process management and role of the quality department), and employees' capacity and training, information technology, in addition, Employees' Commitment and Knowledge Management as moderator. Table 5.3 and Table 5.4 provide the results of the independent sample t-test.

Table 5.3 Group Statistics of Independent Sample t-test

	Variables	Early/ Late	N	Mean	Std. Deviation	Std. Error Mean
TQM	Training And Education	Early	106	4.476	1.203	0.117
		Late	48	4.776	0.973	0.140
	Teamwork And Involvement	Early	106	5.113	0.624	0.061
		Late	48	5.208	0.490	0.071
	Strategic Quality Planning	Early	106	4.648	0.861	0.084
		Late	48	4.893	0.634	0.091
	Customer Focus	Early	106	4.783	0.722	0.070
		Late	48	5.000	0.626	0.090
	Information And Analysis	Early	106	4.608	0.851	0.083
		Late	48	4.854	0.755	0.109
	Continuous Improvement	Early	106	4.330	1.048	0.102
		Late	48	4.750	0.942	0.136
	Process Management	Early	106	4.649	0.697	0.068
		Late	48	4.889	0.678	0.098
	Role Of The Quality Department	Early	106	4.913	0.785	0.076

	Late	48	5.117	0.693	0.100
Employees' Capacity	Early	106	4.670	0.783	0.076
	Late	48	4.906	0.671	0.097
Information Technology	Early	106	4.487	0.939	0.091
	Late	48	4.833	0.747	0.108
Employees' Commitment	Early	106	4.286	0.546	0.053
	Late	48	4.313	0.540	0.078
Knowledge Management	Early	106	4.444	0.783	0.076
	Late	48	4.663	0.691	0.100

Table 5.3 shows small differences of the mean scores between the two groups on each dimension, which were not significant. It can be safely said that the two groups had similar characteristics and hence non-response bias was not a threat (refer also the Levene's test for equality of variance in Table 5.4).

Table 5.4 Independent Sample t-test Results for Non-Response Bias

Constructs		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
TQM	Training And Education	3.299	.071	-1.514	152	.132
	Teamwork And Involvement	3.292	.072	-0.933	152	.352
	Strategic Quality Planning	1.797	.182	-1.763	152	.080
	Customer Focus	3.146	.078	-1.798	152	.074
	Information And Analysis	1.590	.209	-1.717	152	.088
	Continuous Improvement	0.649	.422	-2.375	152	.019
	Process Management	0.438	.509	-1.991	152	.048
	Role Of The Quality Department	2.286	.133	-1.544	152	.125
Employees' Capacity		2.218	.138	-1.806	152	.073
Information Technology		5.174	.024	-2.255	152	.026

Employees' Commitment	.058	.811	-.281	152	.779
Knowledge Management	1.212	.273	-1.663	152	.098

5.5 Descriptive Statistics Analysis

A descriptive analysis was conducted to describe and summarize the main characteristics of a data set from the respondents' perspective on every variables of namely Total Quality Management TQM which has eight dimensions (training and education, teamwork and involvement, strategic quality planning, customer focus, information and analysis, continuous improvement, process management and role of the quality department), and employees' capacity, information technology. In addition, Employees' Commitment and Knowledge Management as moderator. Table 5.5 shows the findings of descriptive statistics of the variables. Most of the variables have the mean above the average and the minimum and maximum responses on the variables are also presented in Table 5.5. As a result, it was found that on the basis of respondents' opinions most of the variables are above the acceptance level of implementation. In other words, almost all dimensions are above satisfactory level.

Table 5.5 Descriptive Statistics of the Constructs (n = 154)

	Variables	N	Minimum	Maximum	Mean	Std. Deviation
TQM	Training And Education	154	1	6	4.570	1.142
	Teamwork And Involvement	154	1	6	5.143	0.586
	Strategic Quality Planning	154	1	6	4.724	0.803
	Customer Focus	154	1	6	4.851	0.699
	Information And Analysis	154	1	6	4.685	0.828
	Continuous Improvement	154	1	6	4.461	1.031
	Process Management	154	1	6	4.724	0.698
	Role Of The Quality Department	154	1	6	4.977	0.761
Employees' Capacity		154	1	6	4.744	0.756
Information Technology		154	1	6	4.595	0.896
Employees' Commitment		154	1	6	4.294	0.543
Knowledge Management		154	1	6	4.512	0.760

5.6 The Rationale behind Choosing PLS SEM for this Study

The aim of this study is to examine the relationships between latent variables; therefore the latent analysis technique was the right option. There were a choice to use covariance-based SEM technique, but the data must be normally distributed (Byrne, 2010; Hair et al., 2010). This study employed PLS Structural Equation Modeling that is the distribution free statistical modeling technique (Chen, 1998). Hair et al. (2010) stated that partial least squares (PLS) is now well known as an alternative to SEM method, which includes LISREL and AMOS, among other programs. The PLS path modeling is more suited to complex models such as those with hierarchical constructs (with a complete disaggregation method), mediating and moderating impacts (Chin, Marcolin, & Newsted, 2003). The PLS modeling has to

be employed in the initial stage of theoretical development to assess and validate exploratory models. In addition, one of its powerful features is its suitability for prediction-oriented research where the methodology helps researchers to concentrate on the explanation of endogenous constructs. Another feature of PLS is its vulnerability to multicollinearity. In addition, PLS determines the measurement models and structural models through multiple regressions, whose estimates can be vulnerable to issues of multicollinearity. Lastly, the PLS path modeling can be utilized in reflective as well as formative measurement models. (Chin 1998b; Chin & Newsted 1999). The following assumptions have been tested in SPSS before choosing the technique of the analysis.

5.6.1 Multicollinearity Test

The test of multicollinearity between variables is highly recommended before beginning of testing the proposed model (Hair et al., 2010). It indicates to the existence of relapse of in the correlation matrix in which the independent variable is high and significantly correlated with another independent variable. In addition, the revelation of multicollinearity can be detected when the correlation value is more than 0.90 (Hair et al., 2010). The test of multicollinearity is facilitated by examining the variance influence factor (VIF) and the tolerance value.

Moreover, the value of the VIF is the amount of variability of the selected independent variable which is explained by other independent variables whereas the tolerance is the inverse of VIF (Hair et al., 2010). The VIF and tolerance values cut-

off pointes are 10 and 0.10 respectively which indicates that VIF closer to 1.00 represents little or no multicollinearity.

Table 5.6 shows that the five models highlight collinearity statistics for all independent variables. Moreover, the correlation between variables were below 0.90 which indicated that there is no problem in multicollinearity. Additionally, VIF values range between 1.608 and 8.720, whereas tolerance values range between 0.115 and 0.622. Therefore, the results reported that there is no violation of multicollinearity assumption.

Table 5.6 Multicollinearity Test

Model		Collinearity Statistics	
IV	DV	Tolerance	VIF
Employees' Capacity	TQM	.115	8.720
Information Technology		.241	4.157
Employees' Commitment		.622	1.608
Knowledge Management		.429	2.330

5.6.2 Assumption of Normality

The normality used to indicate the symmetrical curve that has the greatest frequency of scores towards extremes in the small and middle frequencies (Pallant, 2005). To do so, some researches such as Kline (1998) and Pallant (2005) suggested assessing the normal distribution of scores for the independent and dependent variables through examining their skewness and kurtusis values. In social sciences, the nature

of the constructs has many scales and measures may results skewed positively or negatively (Pallant, 2005). In addition, kurtusis is also a score for measuring distribution that represents the degree to which observations around the central mean are gathered.

According to Hair et al. (2006) the values of skewness outside the range of +1 to -1 are substantially skewed distribution. However, Kline (1998) suggested the cut off between +3 to -3 will be acceptable. Based on these criteria suggested by many researchers, the skewness values were within the acceptable range suggested by Kline (1998) (+3 to -3), however, not acceptable values according to Hair et al. (2006) (+1 to -1). Similarly, the values of kurtusis are suggested by Coakes and Steed (2003) to range from +3 to -3 which are acceptable based on the below Table 5.7.

Based on discussion above, the results show that some of values in skewness deviate from being normally distributed. Therefore, to be able to handle nor-normal and skewed data to test the hypothesized relationships, this study employed PLS Structural Equation Modelling that is the distribution free statistical modelling technique (Chen, 1998).

Table 5.7 Results of Skweness and Kurtusis for Normality Test

	Variables	Skewness	Kurtosis
TQM	Training And Education	-1.099	.949
	Teamwork And Involvement	-.597	.567
	Strategic Quality Planning	-0.981	1.372
	Customer Focus	-.405	-.455
	Information And Analysis	-.812	.138
	Continuous Improvement	-.764	.211
	Process Management	-.602	.067
	Role Of The Quality Department	-.563	-.543
	Employees' Capacity	-.853	.426
	Information Technology	-1.117	1.207
	Employees' Commitment	.041	.467
	Knowledge Management	-.339	-.313

5.6.3 Test of Linearity

Linearity testing detects the association of independent variables with dependent variable which predicts the hypotheses' right direction; therefore, the positive values indicate the relationship is considered positive. According to Hair et al. (2006), the partial regression plot was used for each variable when there is more than one independent variable to guarantee the best representation in the equation. To achieve this purpose, the normal P-P plot of regression standardized residual plot was imposed for independent variables on dependent variable. The results showed that the normal distribution was achieved.

5.7 Testing the Measurement Model

Before, testing the hypotheses of the study, the measurement model or the outer model was assessed first using partial least squares structural equation modeling (PLS-SEM). Two steps were followed to know the model's goodness of fit. Firstly, construct validity, which include factor loadings, composite reliability, Cronbach's alpha and convergence validity, was ascertained. Secondly, discriminant validity that includes Fornell-Larcker (1981) criterion was determined. Figure 5.1 shows the model with its structural dimensions.

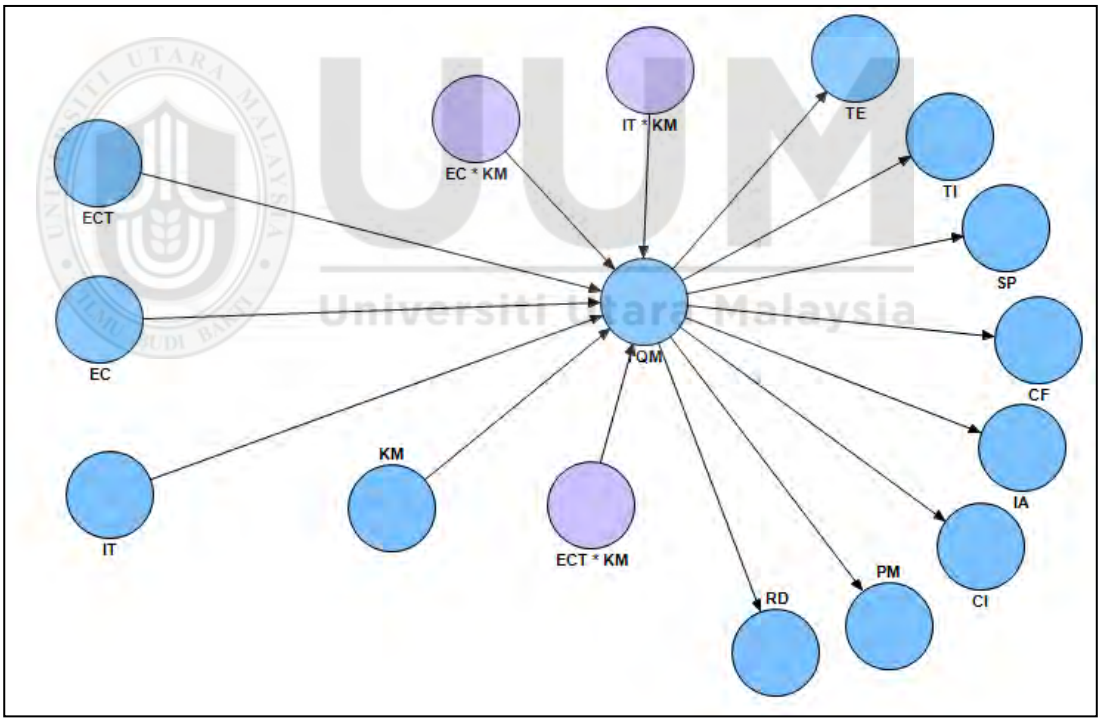

Figure 5.1 the research model

5.7.1 Construct Validity

Construct validity refers to the degree to which the items generated to measure a

construct can appropriately measure the concept they were designed to measure (Hair et al., 2010). More specifically, all the items designed to measure a construct should load higher on their respective construct than their loadings on other constructs. This was ensured by a comprehensive review of the literature to generate the items that already have been established and tested in previous studies.

Based on factor analysis, items were correctly assigned to their constructs. Construct validity was ascertained. The items showed high loadings on their respective constructs when compared with other constructs. (Chow & Chan, 2008).

Table 5.8 Factor Analysis and Cross Loading

Variables	items	CF	CI	EC	ECT	IA	IT	KM	PM	RD	SP	TE	TI
Customer Focus	**CF1**	**0.81**	0.73	0.60	0.69	0.68	0.67	0.56	0.60	0.53	0.79	0.64	0.61
	CF2	**0.68**	0.57	0.47	0.60	0.44	0.40	0.48	0.41	0.53	0.43	0.31	0.54
	CF3	**0.65**	0.34	0.32	0.50	0.26	0.38	0.33	0.39	0.46	0.38	0.26	0.50
	CF4	**0.75**	0.42	0.41	0.60	0.56	0.52	0.43	0.56	0.50	0.49	0.45	0.56
	CF5	**0.80**	0.57	0.56	0.63	0.68	0.68	0.60	0.64	0.54	0.67	0.59	0.54
	CF6	**0.80**	0.66	0.57	0.74	0.69	0.76	0.53	0.73	0.53	0.76	0.76	0.51
Continuous Improvement	**CI1**	0.67	**0.89**	0.61	0.79	0.59	0.67	0.64	0.67	0.60	0.71	0.60	0.56
	CI2	0.63	**0.89**	0.68	0.72	0.66	0.65	0.65	0.70	0.61	0.71	0.63	0.49
	CI3	0.69	**0.87**	0.58	0.69	0.70	0.71	0.58	0.64	0.43	0.70	0.66	0.47
Employees' Commitment	**EC10**	0.66	0.66	**0.84**	0.73	0.50	0.61	0.67	0.63	0.56	0.61	0.56	0.51
	EC3	0.23	0.36	**0.55**	0.22	0.23	0.18	0.27	0.39	0.19	0.36	0.37	-0.01
	EC8	0.51	0.51	**0.74**	0.58	0.47	0.55	0.51	0.54	0.60	0.56	0.40	0.40
	EC9	0.43	0.47	**0.76**	0.44	0.46	0.40	0.34	0.56	0.44	0.47	0.43	0.30
Employees' Capacity	**ECP1**	0.46	0.45	0.47	**0.62**	0.45	0.44	0.40	0.47	0.63	0.45	0.35	0.59
	ECT10	0.63	0.79	0.52	**0.78**	0.74	0.76	0.60	0.73	0.47	0.78	0.84	0.49
	ECT11	0.59	0.50	0.40	**0.74**	0.43	0.54	0.57	0.57	0.67	0.47	0.42	0.57
	ECT12	0.57	0.57	0.42	**0.69**	0.45	0.59	0.51	0.49	0.41	0.53	0.45	0.47
	ECT13	0.69	0.62	0.51	**0.77**	0.57	0.67	0.60	0.65	0.52	0.59	0.52	0.43
	ECT14	0.68	0.49	0.57	**0.71**	0.51	0.58	0.53	0.51	0.58	0.49	0.40	0.47

	ECT2	0.71	0.72	0.60	**0.84**	0.62	0.72	0.59	0.73	0.76	0.76	0.62	0.65
	ECT3	0.67	0.70	0.60	**0.85**	0.62	0.67	0.64	0.68	0.80	0.69	0.58	0.67
	ECT4	0.75	0.70	0.61	**0.89**	0.68	0.74	0.68	0.72	0.76	0.71	0.59	0.61
	ECT5	0.70	0.52	0.58	**0.78**	0.61	0.61	0.53	0.64	0.69	0.59	0.51	0.57
	ECT6	0.72	0.59	0.56	**0.82**	0.54	0.63	0.56	0.67	0.66	0.67	0.55	0.57
	ECT7	0.66	0.75	0.64	**0.78**	0.73	0.74	0.60	0.67	0.47	0.77	0.68	0.47
	ECT8	0.66	0.76	0.67	**0.75**	0.64	0.76	0.65	0.69	0.48	0.79	0.81	0.42
	ECT9	0.64	0.73	0.61	**0.81**	0.74	0.75	0.57	0.71	0.55	0.75	0.72	0.39
Information And Analysis	**IA1**	0.71	0.70	0.48	0.74	**0.84**	0.70	0.54	0.68	0.49	0.73	0.69	0.42
	IA2	0.68	0.72	0.56	0.73	**0.87**	0.74	0.56	0.74	0.54	0.77	0.67	0.42
	IA3	0.64	0.60	0.54	0.63	**0.89**	0.68	0.46	0.67	0.51	0.76	0.65	0.42
	IA4	0.60	0.60	0.48	0.61	**0.85**	0.57	0.43	0.65	0.54	0.66	0.59	0.49
	IA5	0.68	0.59	0.46	0.68	**0.83**	0.66	0.52	0.62	0.67	0.70	0.63	0.62
	IA6	0.50	0.45	0.42	0.49	**0.74**	0.57	0.36	0.50	0.43	0.49	0.46	0.29
Information Technology	**IT1**	0.68	0.70	0.69	0.74	0.66	**0.83**	0.69	0.70	0.62	0.67	0.61	0.48
	IT2	0.61	0.57	0.57	0.67	0.60	**0.75**	0.61	0.63	0.61	0.60	0.54	0.46
	IT3	0.59	0.54	0.42	0.69	0.63	**0.77**	0.53	0.63	0.50	0.58	0.53	0.45
	IT4	0.63	0.62	0.44	0.70	0.70	**0.82**	0.55	0.66	0.46	0.69	0.71	0.45
	IT5	0.66	0.67	0.55	0.68	0.64	**0.82**	0.59	0.59	0.52	0.67	0.61	0.42
	IT6	0.67	0.64	0.50	0.72	0.64	**0.88**	0.63	0.67	0.54	0.69	0.68	0.38
	IT7	0.66	0.64	0.49	0.71	0.64	**0.87**	0.59	0.63	0.59	0.68	0.65	0.45
Knowledge Management	**KM1**	0.45	0.56	0.63	0.54	0.49	0.50	**0.76**	0.55	0.42	0.55	0.53	0.24

	KM10	0.70	0.69	0.53	0.68	0.64	0.77	**0.71**	0.64	0.50	0.70	0.68	0.43
	KM11	0.65	0.56	0.48	0.65	0.46	0.58	**0.77**	0.48	0.56	0.47	0.43	0.56
	KM2	0.47	0.56	0.58	0.56	0.39	0.51	**0.80**	0.47	0.47	0.48	0.50	0.30
	KM3	0.47	0.48	0.43	0.56	0.33	0.50	**0.74**	0.46	0.38	0.49	0.44	0.29
	KM4	0.41	0.41	0.37	0.43	0.41	0.50	**0.76**	0.40	0.38	0.34	0.35	0.18
	KM5	0.45	0.49	0.49	0.51	0.34	0.46	**0.76**	0.39	0.39	0.44	0.47	0.34
	KM6	0.47	0.52	0.50	0.58	0.34	0.53	**0.76**	0.52	0.43	0.51	0.48	0.30
	KM7	0.37	0.37	0.38	0.40	0.36	0.48	**0.74**	0.41	0.40	0.31	0.35	0.17
	KM8	0.41	0.50	0.41	0.47	0.37	0.52	**0.77**	0.42	0.35	0.44	0.41	0.33
	KM9	0.58	0.66	0.56	0.73	0.57	0.67	**0.89**	0.61	0.57	0.56	0.57	0.39
Process Management	**PM2**	0.64	0.65	0.56	0.73	0.70	0.72	0.58	**0.84**	0.61	0.74	0.67	0.40
	PM3	0.63	0.51	0.46	0.68	0.55	0.61	0.47	**0.77**	0.65	0.58	0.48	0.43
	PM4	0.47	0.61	0.64	0.60	0.53	0.57	0.52	**0.78**	0.56	0.58	0.58	0.20
	PM5	0.46	0.38	0.44	0.57	0.39	0.42	0.36	**0.66**	0.58	0.41	0.36	0.30
	PM6	0.69	0.62	0.64	0.60	0.69	0.59	0.53	**0.77**	0.56	0.65	0.66	0.51
Role Of The Quality Department	**RD1**	0.57	0.56	0.60	0.69	0.53	0.62	0.58	0.67	**0.85**	0.61	0.48	0.49
	RD2	0.57	0.52	0.58	0.65	0.60	0.56	0.52	0.69	**0.86**	0.58	0.49	0.57
	RD4	0.59	0.53	0.40	0.66	0.49	0.55	0.44	0.56	**0.82**	0.49	0.38	0.57
	RD5	0.59	0.46	0.56	0.63	0.57	0.53	0.44	0.59	**0.76**	0.55	0.48	0.48
Strategic Quality Planning	**SP1**	0.69	0.56	0.58	0.72	0.70	0.67	0.56	0.68	0.62	**0.80**	0.72	0.58
	SP2	0.75	0.68	0.66	0.79	0.70	0.73	0.59	0.77	0.64	**0.90**	0.75	0.53
	SP3	0.72	0.72	0.70	0.76	0.62	0.70	0.56	0.77	0.57	**0.84**	0.77	0.49

	SP4	0.72	0.74	0.59	0.77	0.73	0.71	0.61	0.70	0.58	**0.89**	0.78	0.61
	SP5	0.55	0.58	0.44	0.54	0.62	0.48	0.36	0.45	0.42	**0.79**	0.56	0.45
	SP6	0.48	0.45	0.30	0.41	0.51	0.48	0.37	0.37	0.26	**0.60**	0.48	0.33
	SP7	0.51	0.62	0.47	0.58	0.66	0.58	0.45	0.57	0.45	**0.67**	0.58	0.28
Training And Education	**TE1**	0.65	0.70	0.58	0.68	0.71	0.72	0.63	0.73	0.50	0.77	**0.93**	0.47
	TE2	0.62	0.61	0.61	0.62	0.64	0.63	0.64	0.71	0.46	0.76	**0.89**	0.35
	TE3	0.65	0.64	0.50	0.72	0.64	0.67	0.54	0.64	0.49	0.78	**0.91**	0.60
	TE4	0.62	0.62	0.48	0.70	0.68	0.69	0.47	0.63	0.45	0.76	**0.87**	0.45
Teamwork And Involvement	**TI1**	0.32	0.28	0.11	0.22	0.20	0.18	0.25	0.10	0.23	0.20	0.17	**0.52**
	TI2	0.57	0.44	0.29	0.52	0.41	0.46	0.28	0.37	0.51	0.52	0.40	**0.81**
	TI3	0.58	0.45	0.48	0.53	0.47	0.41	0.37	0.40	0.49	0.46	0.41	**0.76**
	TI4	0.57	0.48	0.39	0.61	0.42	0.45	0.36	0.46	0.53	0.50	0.47	**0.79**

5.7.2 Convergent Validity of the Measurements

Table 5.9 shows that the composite reliability values exceeded the recommended value of 0.7 (Fornell & Larcker, 1981; Hair et al., 2010). The average variances extracted (AVE) values exceed the recommended rang indicating a good level of construct validity of the measures used (Barclay et al., 1995). These results confirm the convergent validity of the outer model.

Table 5.9 Convergent Validity Analysis

Variables	Items	Loading	AVE	Composite Reliability	Cronbachs Alpha
Customer Focus	CF1	0.806	0.565	0.885	0.846
	CF2	0.681			
	CF3	0.646			
	CF4	0.754			
	CF5	0.802			
	CF6	0.803			
Continuous Improvement	CI1	0.886	0.781	0.914	0.859
	CI2	0.893			
	CI3	0.871			
Employees' Commitment	EC10	0.842	0.535	0.818	0.710
	EC3	0.553			
	EC8	0.740			
	EC9	0.760			
Employees' Capacity	ECP1	0.619	0.602	0.955	0.948
	ECP10	0.776			
	ECP11	0.742			
	ECP12	0.694			
	ECP13	0.774			
	ECP14	0.710			
	ECP2	0.840			
	ECP3	0.850			
	ECP4	0.888			
	ECP5	0.778			
	ECP6	0.816			
	ECP7	0.778			

	ECP8	0.751			
	ECP9	0.812			
Information And Analysis	IA1	0.836	0.701	0.933	0.914
	IA2	0.871			
	IA3	0.886			
	IA4	0.855			
	IA5	0.826			
	IA6	0.741			
Information Technology	IT1	0.827	0.675	0.935	0.919
	IT2	0.753			
	IT3	0.774			
	IT4	0.822			
	IT5	0.817			
	IT6	0.880			
	IT7	0.869			
Knowledge Management	KM1	0.760	0.592	0.941	0.931
	KM10	0.707			
	KM11	0.767			
	KM2	0.803			
	KM3	0.741			
	KM4	0.756			
	KM5	0.761			
	KM6	0.762			
	KM7	0.740			
	KM8	0.766			
	KM9	0.886			
Process Management	PM2	0.835	0.596	0.898	0.864
	PM3	0.774			
	PM4	0.784			
	PM5	0.659			
	PM6	0.771			
Role Of The Quality Department	RD1	0.849	0.625	0.892	0.849
	RD2	0.860			
	RD4	0.821			
	RD5	0.758			
Strategic Quality Planning	SP1	0.796	0.622	0.919	0.896
	SP2	0.896			
	SP3	0.835			
	SP4	0.889			
	SP5	0.786			
	SP6	0.599			
	SP7	0.673			
Training And Education	TE1	0.926	0.809	0.944	0.921
	TE2	0.890			
	TE3	0.908			

	TE4	0.872			
Teamwork And Involvement	TI1	0.515	0.535	0.817	0.710
	TI2	0.813			
	TI3	0.764			
	TI4	0.794			

Note.
[a] Composite Reliability (CR) = $(\Sigma \text{ factor loading})^2 / \{(\Sigma \text{ factor loading})^2) + \Sigma \text{ (variance of error)}\}$
[b] Average Variance Extracted (AVE) = $\Sigma \text{ (factor loading)}^2 / (\Sigma \text{ (factor loading)}^2 + \Sigma \text{ (variance of error)}\}$

5.7.3 Discriminant Validity of the Measures

The discriminant validity of the measures was confirmed by employing the method of Fornell and Larcker (1981). As illustrated in Table 5.10, the square root of average variance extracted (AVE) for all the constructs were placed at the diagonal elements of the correlation matrix. As the diagonal elements were higher than the other elements of the row and column in which they were located, this confirms the discriminant validity of the outer model. In sum, having established the construct validity of the outer model, it is assumed that the obtained results pertaining to the hypotheses testing should be valid and reliable.

Table 5.10 Discriminant Validity Analysis

Variables	CF	CI	EC	ECP	IA	IT	KM	PM	RD	SP	TE	TI
Customer Focus	**0.75**											
Continuous Improvement	0.75	**0.88**										
Employees' Commitment	0.66	0.71	**0.73**									
Employees' Capacity	0.84	0.83	0.72	**0.78**								
Information And Analysis	0.77	0.74	0.59	0.78	**0.84**							
Information Technology	0.78	0.76	0.64	0.86	0.78	**0.82**						
Knowledge Management	0.66	0.71	0.64	0.74	0.57	0.73	**0.77**					
Process Management	0.76	0.76	0.73	0.83	0.77	0.79	0.65	**0.77**				
Role Of The Quality Department	0.68	0.62	0.64	0.78	0.64	0.67	0.58	0.76	**0.79**			
Strategic Quality Planning	0.81	0.80	0.69	0.85	0.83	0.80	0.64	0.80	0.66	**0.79**		
Training And Education	0.70	0.71	0.61	0.76	0.74	0.75	0.63	0.75	0.53	0.85	**0.90**	
Teamwork And Involvement	0.72	0.57	0.47	0.68	0.54	0.54	0.43	0.49	0.63	0.60	0.52	**0.73**

5.8 Goodness of Fit (GoF) of the Model

To support the validity of the PLS model, GoF value was estimated according to the Using the formula, the GoF value was 0.742 obtained.

$$Gof = \sqrt{(\overline{R^2} \times \overline{AVE})}$$

Table 5.11 Goodness of Fit of the Model

Constructs	R Square	AVE
Customer Focus		0.565
Continuous Improvement		0.781
Employees' Commitment		0.535
Employees' Capacity		0.602
Information And Analysis		0.701
Information Technology		0.675
Knowledge Management		0.592
Process Management		0.596
Role Of The Quality Department		0.625
Strategic Quality Planning		0.622
Training And Education		0.809
Teamwork And Involvement		0.535
Total Quality Management (Tqm)	0.878	0.502
Average	0.878	0.626
GoF		**0.742**

A comparison was made with the baseline values of GoF (small = 0.1, medium = 0.25, large = 0.36), as suggested by Wetzels et al. (2009). Table 5.11 shows that the model's goodness of fit measure was large, indicating an adequate level of global PLS model validity.

5.9 Effect Size

Effect size f2 is not automatically given in PLS; it has to be manually calculated by the formula:

$$\text{Effect size} : f^2 = \frac{R^2_{incl} - R^2_{excl}}{1 - R^2_{incl}}$$

Following Cohen's (1988) criterion, f2 is assessed as: 0.02 small, 0.15 medium and 0.35 is large. The results are showed below in table 5.12.

Table 5.12 Effect Size

DV	IV	R2incl	R2excl	R2incl-R2excl	1-R2incl	Effect Size
TQM	ECT	0.878	0.842	0.036	0.122	29.5%
	EC	0.878	0.867	0.011	0.122	9.0%
	IT	0.878	0.859	0.019	0.122	15.6%
	KM	0.878	0.878	0	0.122	0.0%

5.10 Assessing the Inner Model and Hypotheses Testing Procedures

After the goodness of the outer model had been ascertained, the next step was to test the hypothesized relationships among the constructs. Using the SmartPLS2.0, the hypothesized model was tested by running the PLS algorithm. The path coefficients were then generated, as illustrated in Figure 5.2 and Figure 5.3

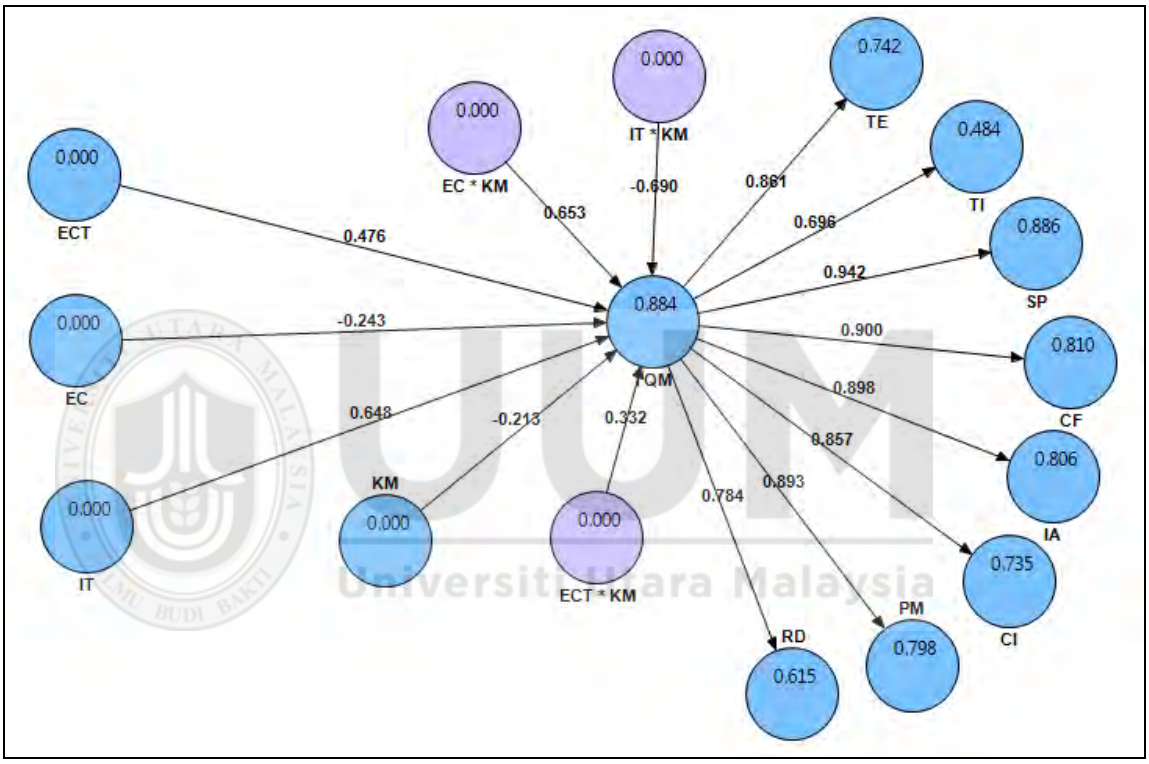

Figure 5.2 Path Model Results

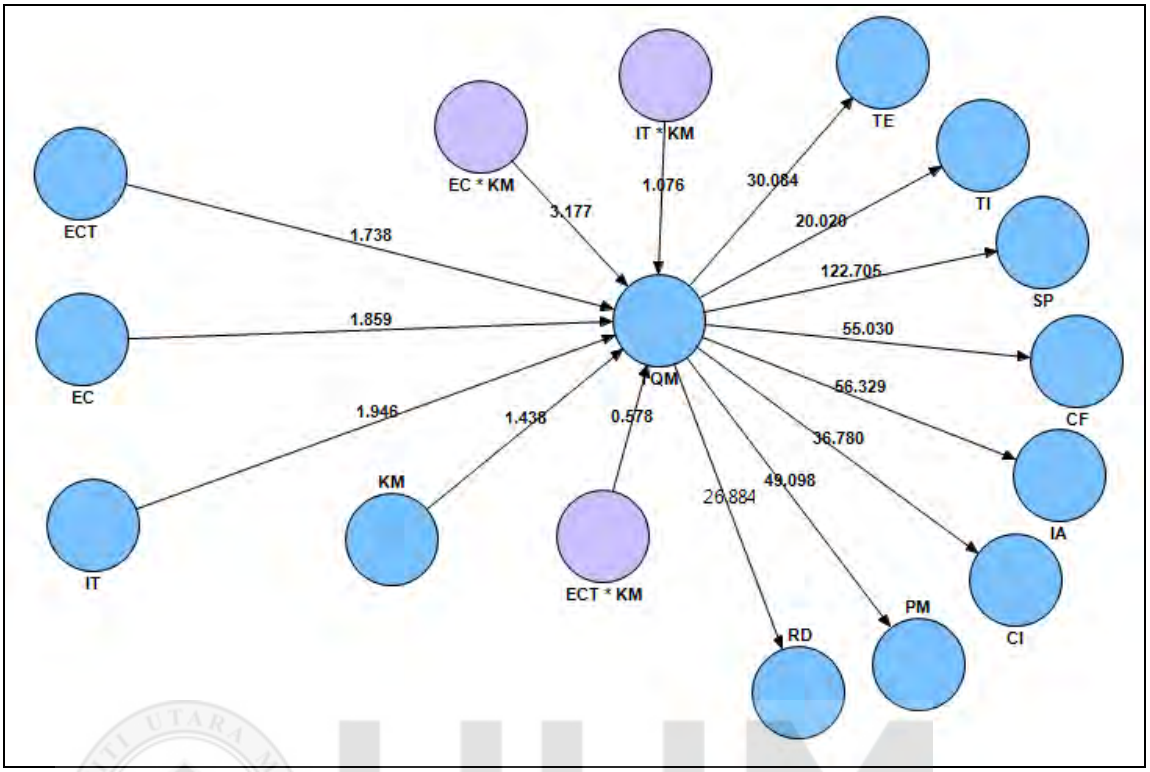

Figure 5.3 Path Model Significance Results

To be able to conclude whether the path coefficients were statistically significant or not, this study employed the bootstrapping techniques embedded with the SmartPLS2.0. To run the bootstrapping of this model, the researcher used 500 samples with number of cases equal to the observations out of 154 cases. More specifically, the T values accompanying each path coefficient were generated using the bootstrapping technique and subsequently the p values were generated, as reported in Table 5.13.

Result showed that Employees' Commitment had a negative effect and insignificant impact on TQM (β = -0.243, t = 1.859, p> 0.01). Moreover, a positive and significant impact of Employees' Capacity on TQM (β = 0.476, t = 1.738, p < 0.01) was

observed. The result also indicated that the influence of Information Technology on TQM was positive and significant (β = 1.036, t = 3.764, p <0.1).

Result also showed that the relationship between Knowledge Management and TQM was negative and significant (β = -0.213, t = 1.438, p < 0.01).

Table 5.13 Results of the Inner Structural Model

Hypothesis	Path Coffecient	Standard Error (STERR)	T.Value	P. Value	Decision
EC -> TQM	-0.243	0.131	1.859	0.032	Not supported
ECT -> TQM	0.476	0.274	1.738	0.041	Supported
IT -> TQM	1.036	0.275	3.764	0.000	Supported
KM -> TQM	-0.213	0.148	1.438	0.076	Not supported

Note. *p < 0.1; **p < 0.05; *** p < 0.01

5.11 Testing the Moderating Hypotheses

Moderating variable is the variable that moderates the strength of causal effects from independent variable X, to its dependent variable Y, Let M, said to be a moderator variable in the X-Y relationship. The moderation effects of M would “alter” the causal effects of independent variable X on dependent variable Y (Hair et al., 2010). Table 5.14 showed the results of moderation effect.

Table 5.14 Results of moderating hypotheses

Hypothesis	Path Coffecient	Standard Error (STERR)	T.Value	P. Value	Decision
EC * KM -> TQM	0.653	0.206	3.177	0.001	Supported
ECT * KM -> TQM	0.332	0.574	0.578	0.282	Not Supported
IT * KM -> TQM	-0.690	0.641	1.076	0.141	Supported

It could be seen from the table above that there is positive moderation effect of Knowledge Management on the relationship between Employees' Commitment and TQM at significant level ($\beta = 0.653$, $t = 3.177$, $p < 0.01$), there is no moderation effect of Knowledge Management on the relationship between Employees' Capacity at significant level ($\beta = 0.332$, $t = 0.578$, $p > 0.01$), in addition, there is negative moderation effect of Knowledge Management on the relationship between Information Technology and TQM at significant level ($\beta = -0.690$, $t = 1.076$, $p > 0.01$).

5.12 Summary of the Findings

This research employed partial least squares structural equation modeling (PLS-SEM) as the major analysis technique, since PLS SEM is a relatively new analytical technique in construction. Prior to testing the model of the study, rigorous procedures to establish the validity and reliability of the outer model were followed. Once the measurement model was shown to be valid and reliable, the next step was to test the hypothesized relationships. Before examining the hypothesized

relationships, the predictive power of the model was investigated and reported and the goodness of the overall model was confirmed. After that, the structural model was examined and the results were reported in detail. As shown and reported in Table 5.15 and 5.16. In the next chapter, discussion of the findings is offered in relation to the underpinning theories and previous studies together with the conclusions and recommendations of the study.

CHAPTER SIX

DISCUSSIONS AND CONCLUSIONS

6.1 Introduction

The primary goal of the present research is to investigate the factors that influence the provision of TQM practices in the public healthcare sector in Saudi Arabia represented by the Saudi public hospitals. Specifically, the impact of four independent variables on TQM practices is investigated in this study. The independent variables include information technology, employees' capacity, and finally employees' commitment. The influence of these independent variables on TQM practices was investigated through the moderating effect of knowledge management. To achieve these goals, the present chapter introduces the discussions on the findings that are previously reported. The chapter also draws the conclusions together with the recommendations. Specifically, the chapter begins with a section that presents a recapitulation of the findings in which a summary about the findings generated in the previous chapter is presented. The chapter carries on with presenting the discussions on the findings that are previously generated. It is noteworthy to state here that such discussions are in line with the previous related available literature on the links between the study's variables. The chapter proceeds with presenting the implications of the study (recommendations). The chapter then introduces the limitations of the study followed by recommendations and suggestions for future

research before concluding with the contribution of the study. The following section addresses the recapitulation of the study.

6.2 Recapitulation of the Study

To provide some guidance in this section, it is helpful to remind here about the research questions and then provide a summary for each questions. This study attempted to answer five main research questions, they are the following:

1. To which extent does ***Information Technology*** affect TQM practices in the public hospitals in Saudi Arabia?

2. Does ***Employees' Capacity*** affect TQM practices in the public hospitals in Saudi Arabia?

3. To what extent does ***Employees' Commitment*** affect TQM practices in the public hospitals in Saudi Arabia?

4. To what extent does ***Knowledge Management*** moderate relationship between the independent variables of Information Technology, Employees' Capacity,

Employees' Commitment and the dependent variable of TQM practices in the public hospitals in Saudi Arabia?

Before addressing each of the research questions above, it is important to present a highlight overview about the descriptive statistics of the study. First of all 154 hospital directors took part in the study in which they participated in a questionnaire about the study's variables. The respondents were from the different regions in the country, namely Central Region, Western Region, Eastern Region, Northern Region, and Southern Region. However, majority of the respondents were from the Western Region (29%). Furthermore, nearly half of the respondents had a high work experience of more than fifteen years (51.3%). Finally, 42.9% of the respondents' age ranged between 36 and 43 years old.

The first research question attempted to examine the impact of the construct of information technology on TQM practices in the Saudi pubic healthcare sector. The findings of the study revealed that there is a positive relationship between information technology and TQM in the Saudi public healthcare context and thus the hypothesis regarding this research question was supported.

The second research question attempted to examine the impact of the construct of employees' capacity on TQM practices in the Saudi pubic healthcare sector. The findings of the study revealed that there is a positive relationship between

employees' capacity and TQM in the Saudi public healthcare context and thus the hypothesis regarding this research question was supported.

The third research question attempted to examine the impact of the construct of employees' commitment on TQM practices in the Saudi pubic healthcare sector. The findings of the study revealed that employees' commitment had a negative but insignificant effect on TQM and thus the hypothesis regarding this research question was not supported.

The following table (Table 6.1) provides a summary of the findings regarding the direct relationships between the independent variables and the dependent variable which appear in the first four research questions.

Table 6.1 Summary of Findings of Direct Relationships

Hypothesis	T. Value	P. Value	Decision
EC -> TQM	1.275	0.101	Not supported
ECP -> TQM	2.274	0.012	supported
IT -> TQM	3.764	0.000	supported

Moving on with the summary of the findings, the fourth research question attempted to examine the moderating impact of the construct of knowledge management on the relationships between the independent variables of information technology,

employees' capacity, and employees' commitment and the dependent variable of TQM practices in the public healthcare sector. The findings of the study revealed that the construct of knowledge management has a moderating impact on the relationship between employees' commitment and TQM while it does not seem to have a moderating impact on the relationships between the two independent variables of employees' capacity and information technologies and the dependent variable of TQM. The following table (Table 6.2) provides a summary of the findings regarding the moderating impact of knowledge management on the relationships between the independent variables and the dependent variable which appear in the fifth research question of the study.

Table 6.2 Summary of Findings of Moderating Relationships

Hypothesis	T. Value	P. Value	Decision
EC * KM -> TQM	2.618	0.005	Supported
ECP * KM -> TQM	0.178	0.429	Not Supported
IT * KM -> TQM	2.668	0.004	Not Supported

Thus, the previous section presented a summary of findings of the study which are shown in the research objectives and questions. The following section provides some discussions of these findings and these discussions are grounded on findings generated in the study together with the findings and revelations of the previous

related literature and the discussion is also in accordance with the local context of the Saudi healthcare sector represented by the Saudi public hospitals.

6.3 Discussion of Findings

The discussion section of this chapter provides further details on the findings generated from the previous chapter. Such details attempt to shed more light into the hypotheses that have previously been generated and tested. To remind here, the hypotheses of the study were as follows:

Hypothesis 1: *Information Technologies is positively associated with TQM practices.*

Hypothesis 2: *Employees' Capacity are positively associated with TQM practices.*

Hypothesis 3: *There is a positive relationship between employees' commitment and TQM practices.*

Hypothesis 4: *Knowledge Management moderates the positive relationship between Information Technologies and TQM practices.*

Hypothesis 5: *Knowledge Management moderates the positive relation between Employees' Capacity and TQM practices.*

Hypothesis 6: *Knowledge Management strengthens the positive relationship between Employees' Commitment and TQM practices.*

The above mentioned hypotheses are discussed in the following sections and the discussions on these hypotheses are in line with the local Saudi healthcare context and also the available related literature on the links between the study's variables.

6.3.1 The Relationship between Information Technology and TQM

In terms of the impact of information technology on TQM in the Saudi public hospitals, the findings of the current study revealed that the use of information technology has a positive and significant impact on TQM in the hospitals. This finding makes complete sense which is grounded on other findings from previous studies. In this context and in relation to the use of information technology and its impact on TQM, Donabedian (1992) indicated that technology plays a vital role in increasing the capabilities of the staff, which in turn promotes better quality management as when the staff are capable, this leads to better overall quality management and this is achieved as the use of technology allows for regular and better monitoring of the quality and performance of the entire health system in the hospital (Alharbi, 2014). Apart from that, the impact of technology use in the public healthcare sector in Saudi Arabia goes beyond promoting staff capacity, but it also has been seen to have a direct main effect on the service quality of the hospital taking into account the well-established link between healthcare service quality and TQM.

Guided by the views and argument of Rust and Tuck (2006), hospitals and healthcare providers should focus on making the appropriate information to the right people in

the perfect time in order to see improvements in the quality of service. In this regard, information technology has the ability to significantly increase TQM by providing opportunities to create communication channels between hospitals, doctors, other units and patients, as well as securing appointments and bookings, and to relay test results efficiently between the parties involved. Apart from that, more advanced technology has the ability to provide coded files of the patients which would allow easier retrieval of patient history and medical information that would help health workers to assess the patients more effectively through the use of the available information and this is important in enhancing total quality management as suggested by Thomas (1997).

In addition to that and based on the specific findings of this study, the participant directors rated their respective hospitals as having an advanced implementation of information technology also rated TQM as high. This goes in line with the findings of other research studies in the literature such as Karimi, Somers and Gupta (2001), Sun and Shibo (2005) and Singh and Ranchod (2004). These researchers suggested that effective information technology system is capable of being refined and of adapting to the changing times, as timeliness of system is very important. Apart from that, Sun and Shibo (2005) also argue that up-to-date information technology systems allow timely exchange of information, that reduces time lags between medical processes in the hospital allow for better treatment of the patients, thus, enhancing the overall TQM in the hospital. The researchers further elaborate that advanced information technology setups within modern day hospitals allow for much

easier inter-department communication, as well as much more efficient way of monitoring the progress of the patients and this would make assessment of the condition of the patients much more accurate since the clinicians and nurses are provided with all the information that they need in the soonest time possible.

Apart from what has been mentioned, the effective implementation of information technology not only directly impacts the quality of service provided to the patients but it also increases the capacity and competence of the employees by providing them with the needed information that would increase their knowledge and skill level, which would also ultimately increase the level of quality. However, in order for information technology to have a profound influence on TQM of the Saudi public hospitals, a few conditions should first be met. In this regard, Dutton and Starbuck (2002) stated that investment in technology that would improve the processes, procedures, and service are essential. Consequently, the MOH in Saudi Arabia has the responsibility to provide enough budgetary assistance to each of the public hospitals around the country in order for them to be able to afford these advanced technology systems. As previously mentioned, this is much more complicated among public hospitals as compared to private hospitals due to the difference in available financial resources as stated by Al-Homayan et al. (2013). In this regard, the researchers further elaborate that private hospitals in Saudi Arabia have the funding to invest in high technology equipment as they attract more customers, despite the relatively high prices of their services considering that the Saudi nationals have a negative impression on the quality of service provided by public hospitals. As a

result, this allows the private hospitals to have more revenues that could be used to invest in technology. These investments are easily returned by the increasing number of customers, since the satisfaction of the quality of service they provide is high among their customers. On the other hand, the public sector is left with scarce resources to invest in more efficient and timely technology system, which hinders the improvement of the quality of the service they could provide and in turn negatively influence TQM in the hospitals.

In addition to that, advanced information technology also needs highly capable staff or healthcare professionals, who have the knowledge and the ability to operate, control, understand or maintain the advanced facilities as suggested by Cibulskis and Hiawalyer (2002). In Saudi Arabia, there seems to be a problem with recruiting highly skilled workers in the public healthcare sector as compared to the highlight skilled healthcare professionals recruited by the private hospitals. In other words, even if the government or MOH invests in advanced technology to improve the healthcare service and in turn TQM in the hospitals, the lack of qualified personnel that are capable of operating such systems would still hinder the improvement of the overall TQM in these public hospital.

Finally, the findings regarding the relationship between IT and TQM go in line with the theory of RBV, which constituted the theoretical ground of this study. To remind here, the theory states that organisations can utilise their resources in an intelligent and unique way to achieve their objectives and in turn secure a competitive edge in a

highly competitive market. Thus, Saudi hospitals can utilise the massive technological capabilities they have, considering that rich status of the country and its ability to provide such advanced technologies, to achieve better implementation of TQM and in turn better organisational performance. The following section addresses the discussions regarding the relationship between employees' capacity and TQM.

6.3.2 The Relationship between Employees' Capacity and TQM

The findings of the current research revealed that as the level of the capacity of the healthcare professionals of the Saudi public hospitals increases, the likelihood of high TQM also increases. Such findings conform to most of the findings generated from the previous research on this impact as suggested by Argote (2000) who argued that the need for highly skilled and efficient healthcare professionals and workers is profound in the healthcare sector. Of course such argument is logical considering that this particular sector is concerned with the lives of people and to do so, it is critical to realize that the well-being and the competency of healthcare professionals in a given hospital have the ability to spell the difference between life and death as put by Alharbi (2014). However, there seems to be a problem that lies within the Saudi public healthcare sector and in the Saudi public hospitals in particular and this problem lies in the scarcity in the labour force of those highly qualified trained doctors healthcare professionals as many of the highly qualified ones tend and prefer to work in the private sector that is willing to pay better salaries and provide better services that would help such healthcare professionals improve and develop in their

work as argued by Al-Homayan et al (2013). Thus and as a result of this, the public healthcare sector constantly suffers from the lack of workforce which has a negative influence on the existing staff who complain about stress and long working hours. To link this to the findings of this study, when employees in the Saudi public hospitals complain about stress and express their dissatisfaction and even compare themselves to those working in the private sector, this will definitely lead to the lack of effective implementation of TQM.

In response to this scarcity of highly qualified and trained healthcare professionals within the Saudi public healthcare sector, the Saudi government has been taking many steps to attract more qualified and trained employees to work for the public hospitals in the country. Among these steps is what is referred to as King Abdullah Programme for giving away hundreds of thousands of scholarships for students in different fields, and in the medical field in particular. Most of these scholarships are given to young Saudis in highly recognised universities around the world, particularly in Western universities in the United States, the United Kingdome, Australia, and New Zealand. The government hopes that such students will come back a few years later to fill in the gap in the scarcity of highlight qualified healthcare professionals in the country. Among the other steps taken by the Saudi government is by providing more competitive compensation packages provided for the healthcare professionals working in the Saudi public hospitals during the past few years. Yet and despite these steps and few others, such benefits are perceived to

be not as competitive as the ones provided by the private sector (Al-Homayan et al., 2013).

Brown and Duguid (2003) argued that if hospitals want to enhance the capacity of their employees, hospitals have to provide training and education to their staff whether they are physicians, nurses, admins, etc. Such training and education have the ability to increase and enhance their knowledge and skill levels. The researchers further elaborate that by providing training courses to existing employees, these employees become more updated to the current advancements in the medical field and this would help them make more informed decisions that would benefit the patients, and in turn would yield better TQM in the hospitals considering the well-established link between TQM and customer satisfaction as suggested by Brown and Duguid (2003). However and as far as the public healthcare in Saudi Arabia in concerned, if public hospitals want to provide training and education for their employees as to enhance their capacity, this would require the allocation of more budget. In Saudi, private hospitals allocate more funding considering the more revenues and this would also suggest that private hospitals provide more training for their employees and this would lead to an even bigger gap in terms of employees' capacity between the two categories of hospitals in the country. More importantly, the lack of funding among public hospitals may act as an obstacle for the managements of these hospitals in providing regular employee development programs for their employees and in this case it would be difficult for these employees to contribute to the overall TQM in the hospitals where they work.

Finally, the findings regarding the relationship between employees' capacity and TQM go in accordance with the basic principles of the theory of RBV. Similarly, the theory is grounded on the idea that organisations can utilise their resources in an intelligent and unique way to achieve their objectives and in turn secure a competitive edge in a highly competitive market. In any organisation, employees are regarded as the most important assets that organisations have and working on the capacity and skills of these employees will assist the Saudi hospitals in having skilled employees and healthcare professionals who would in turn help the hospitals perform better by implementing the practices of TQM. The following section sheds some light on the link between employees' commitment and TQM in the Saudi public healthcare sector.

6.3.3 The Relationship between Employees' Commitment and TQM

In terms of the relationship between the independent variable of employees' commitment and the dependent variable of TQM in the Saudi pubic healthcare sector, the findings of the study revealed that employees' commitment had a negative but insignificant effect on TQM which means that the hypothesis regarding this relationship was not supported. Generally speaking, the construct of employees' commitment has been agreed by many researchers and practitioners to be a strong determinant of organizational performance as suggested by Farr-Wharton and Brunetto (2003) and considering the well-established link between TQM and organisational performance, it makes more sense if the findings of the study reported

a significant relationship between the two constructs of employees' commitment and TQM. However and in the context of this study, it has been mentioned earlier that there have been complaints forming a kind of dissatisfaction by the Saudi employees working in the Saudi public hospitals. These employees keep comparing themselves to the ones working in the private sector saying that private sector employees receive better salaries and work in better working environments with less stress and better opportunities to develop. Such feelings have the ability to negatively influence the commitment of employees towards their work. In this context, Khatibi, Asadi & Hamidi (2009) stated that employees' commitment is influenced by many organisational factors where they reported that there is a negative relationship between stress and organizational commitment in which the more stressed employees are, the less committed they become towards their work.

In addition and looking at the items that measure the construct of employees' commitment in this study, one could notice that the mean score for the commitment construct was reported to be the lowest as compared to the other variables of the study when the means for the respondents' responses was 4.294. This could indicate that the respondents' level of commitment towards working in the hospitals was not high and this could explain why no significant relationship between employees' commitment and TQM was reported. Some factors may have impact on why commitment levels are low or not as high as targeted by the organisation. Among these factor, apart from stress as mentioned earlier, is the construct of motivation to work as suggested by Bhatti and Quaishi (2007) who also found that employee

participation in decision making is very important to create committed employees because it has impact on the job satisfaction, and employee productivity.

Another factor that has been hypothesised to influence commitment is the construct of empowerment as stated by Avolio, Zhu and Bhatia (2004) who argued that in order to increase the commitment of an employee towards the organization higher level management should increase the psychological empowerment among the employees. This is because when employees are feeling empowered, they are more likely to have a clarified vision about their work and this would enhance their motivation level and in turn their commitment towards their work. To link this to the context of the current study, there seems to be a problem with these factors of motivation, participation in decision making, and empowerment in the public Saudi hospitals and this might explain why their level of commitment was not high in this study which in turn may have had an impact on the significance of the relationship between employees' commitment and TQM.

Finally, the findings regarding the relationship between employees' commitment and TQM go in line with the basic principles of the theory of RBV. The theory suggests that organisations can utilise their resources in an intelligent and unique way to achieve their objectives and in turn secure a competitive edge in a highly competitive market. While the hypothesis was not supported, the findings still suggest that the two constructs of commitment and TQM are related but only the trend of relation (positive/negative) was not in line with the proposed hypothesis. Again, commitment

of employees is regarded as one of the important resources any organisation can utilise to help achieve its objectives and in turn perform better. As mentioned previously, employees are regarded as the most important assets of organisations and it is important that organisations (Saudi hospitals) work on enhancing such commitment. The following section addresses the moderating influence of the construct of knowledge management.

6.3.4 Moderating Influence of Knowledge Management

Apart from testing the direct relationships between the independent variables of employees' commitment, their capacity, and information technologies on the dependent variable of TQM, the study also attempted to examine whether the construct of knowledge management moderates these direct relationships. In other words, the study attempted to examine whether the interference of knowledge management alters the causal effects of independent variables on the dependent variable. It has been mentioned earlier that the findings of the study reported that the construct of knowledge management has a moderating impact on the relationship between employees' commitment and TQM while it did not seem to have that moderating impact on the relationships between the two independent variables of employees' capacity and information technologies and the dependent variable of TQM

As for moderating impact for knowledge management on the relationship between employees' commitment and TQM, it is important to remind here that the construct

of knowledge management refers to the process of gathering, managing and sharing employees' knowledge throughout the organisation (Bhojaraju, 2005). The researcher further elaborates that this sharing of knowledge within the organisation has the ability to enhance the existing processes of organisational business and it also introduces more efficient and effective processes through removing redundant ones. In addition, activities related to knowledge management within an organisation help these organisations to acquire, store and utilize knowledge for problem solving and decision making activities. These positive features of knowledge management could explain why the construct had a moderating impact on the relationship between the independent variable of employees' commitment and the dependent variable of TQM. Specifically, when existing processes are carried out efficiently and redundant processes are removed, employees will be more likely to feel more satisfied and motivated and this will enhance their commitment towards work. Apart from that, if knowledge management helps organisations to acquire, store and utilize knowledge for problem solving and decision making activities, this would require an adoption of an organisational culture where employees are the real assets of organisations and that it is important that knowledge is managed and channelled effectively to all members of the organisation. In other words, knowledge management implies that employees are regarded as integral part of any organisation and that each one is valuable to achieving the overall outcome of the organisation and this is why it is important that knowledge is shared and exchanged throughout the organisation. Thus and in brief, when knowledge is distributed across employees from different departments, these employees will feel valued and that the company cares about

them and also trust them with their knowledge and this would in turn enhance their commitment.

On other hand and as for failing to report a moderating impact for knowledge management on the relationships between the independent variables of employees' capacity and information technologies and the dependent variable of TQM. In this regards, one could argue that information technologies is just a tool or a means used to share knowledge and the interference of knowledge management will not influence its impact on TQM. Apart from that, Bhojaraju (2005) argues that knowledge management is an organisational approach that is not easily implemented stating a number of challenges to utilising the construct within organisation. Among the challenges addressed was that the idea of knowledge-sharing depends on the voluntary participation and many employees might block their knowledge from other employees fearing some competition or being replaced by other employees. This could be the case in the Saudi public hospitals considering that many employees in the public healthcare sector look for chances to leave to better working environment in the private sector and probably they feel that sharing their knowledge might not be in the best of their personal interests. This however, may require another study to examine the case as it is not among the objectives of the current study. The following section addresses the recommendations (implications) of the study including some recommendations for future research in the area of TQM in the healthcare sector worldwide.

6.4 Recommendation of the Study

The recommendations section (implications) is divided into three categories, namely theoretical recommendations, practical recommendations and recommendations for future research. The following section addresses the theoretical recommendations of the current study.

6.4.1 Theoretical Recommendations

The current study is grounded on a theoretical framework whereby the Resource Based View theory (RBV) of business management constituted its theoretical ground. The theory stresses how organisations, in different fields and sectors, are able to utilise assets and resources within their structure and systems for the sake of gaining a competitive edge in a highly competitive and global market as suggested by Barney (1991). Specifically, the theory suggests that any organisation possesses multiple resources, that could be tangible or intangible, and these resources allow for competitive advantage that would in turn sustain the organization in the long-term (Barney, 1991). The findings of this study provided some kind of support to the RBV theory considering that the independent variables in this study (Information Technologies, Employees' Commitment, and Employees' Capacity) are considered to be among the organisation's (hospital's) important assets (intangible assets) which public hospitals can utilise in order to secure a competitive advantage in a highly competitive Saudi healthcare sector hospitals, taking into account the competition from the hospitals in the private sector. The intelligent and effective utilisation of these assets can help public hospitals enhance their performance through the impact

of these assets on TQM as shown in the findings of the study. Thus, the current research provided empirical evidence that a western-based theory (RBV) is also applicable in a Middle Eastern Arabic country setting despite the various differences, whether cultural, economic, or environmental. In other words, the current research and its findings contribute to the body of knowledge that supports the generalizability of the RBV theory.

In addition to the generalisability of the theory of RBV, the research is believed to have a theoretical contribution to the literature. This is done through utilising the adapted measures and scales that have been used to measure the variables of the study considering that these scales have been adapted and redesigned to suit the context of the study. What this means is that the body of literature on TQM and its influential variables can consider using these adapted scales in their future studies and validate their usability, especially research that is yet to be conducted in the Middle East region. The following section addresses the practical (managerial) recommendations of the study.

6.4.2 Practical (Managerial) Recommendations

The findings of the current research are believed to have provided sufficient insight to hospital managers and also to policy makers in the Saudi public healthcare sector as to how they can utilize and make use of the resources available in the hospitals for the sake of enhancing their TQM and in turn the performance of these hospitals which would ensure better customer satisfaction and even loyalty. What is meant by resources in this context is the independent variables in this study and this is

grounded on the principles of RBV theory which states that organisation in general (hospitals in this study) can utilise their resources (tangible & intangible) in an intelligent manner so that they can secure a better competitive position in a highly competitive environment.

The findings of this study revealed that information technologies, one of the independent variables in this study, has a significant impact on TQM, which means that if Saudi hospitals want to enhance their TQM, it is necessary that they pay attention to the effective use of information technologies in the structure and systems of these hospitals. In other words, this finding does imply that it is essential that Saudi public hospitals invest in advanced technology and also in information technology as this would enhance the effective implementation of TQM and in turn hospital performance. Apart from that, investment in advanced technologies has tremendous benefits to the hospital and also to the employees working in these hospitals as it would allow easier and smoother exchange of needed information and it would also provide better service and save on time and cost in the long term.

Investment in advanced technologies could be done in many ways; for example Saudi hospitals could implement human resource information system (HRIS) as a tool to facilitate and enhance the handling of records and delivery of healthcare service to patients. HRIS is defined as “the interrelated people, data, technology, and organisational procedures a company uses to collect, process, store, and disseminate

information" as stated by Dessler (2011, p. 706). In addressing the importance of HRIS to organisation, Maguire and Redman (2006) argues that the system can be seen as an integration mechanism between human resources management and information technologies. The researchers further elaborate that the system needs centralized hardware resources which means that this needs a group of experts in information system who can be part of the human resource department can manage and support the system. Apart from that, HRIS supports many activities within the organisation or the hospital in the context of this study. Among these activities are planning, administration, decision-making, and control. Furthermore, HRIS supports other management practices including the selection of employee, their placement, their payroll, their pension, and many other related activities. All these activities are essential and integral part of TQM in any organisation and working on this system will in turn enhance TQM within the public hospitals in Saudi Arabia.

Apart from the significant impact of the construct of information technologies on TQM, the study also found that employees' capacity has a significant impact on the effective implementation of TQM practices. This finding is important to the Saudi public hospital as it could imply that managers of these hospitals could enhance the implementation of TQM practices through the selection and recruitment processes when hiring employees in the sense that only qualified and skilled employees are recruited to work in the Saudi public hospitals. Apart from that, it is important for public hospitals in Saudi Arabia to work hard on existing employees through continuous training and upskilling programmes. However, it has already been

mentioned that there might be an issue with such strategy of recruiting highly skilled workers and this issue lies in retaining such workers considering that many employees working in the Saudi public hospitals look for chances to work in better and more competitive environments in the private healthcare sector where salaries and benefits are more attractive. A way to respond to this challenge is that the MOH in Saudi Arabia may provide better packages for their employees in which compensations are more attractive. This would be very beneficial for both the hospitals and also the employees as it would not only make jobs in public hospital more attractive to qualified applicants, but would also increase the motivation of the existing employees and this would in turn lead to better performance and increased quality of service.

In addition to what has been mentioned above, the findings of the current study revealed that the construct of knowledge management had a moderating impact on the relationship between the independent variable of employees' commitment and the dependent variable of TQM practices. It is worth to remind here that the construct of knowledge management refers to a discipline that promotes and encourages managing and sharing of all of an organisation's (hospital's) information assets among the employees working in the organisation. Such information assets include many activities such as sharing database documents, policies procedures and also other activities related to customers. The finding of this study showed that knowledge management influences how variables like employees' commitment influence TQM practices in the sense that when knowledge and information are

shared among employees, they will feel more satisfied as they feel they are trusted and dealt with as members of the organisation; it is about instilling this feeling of trust and value among these employees and this would lead to more committed workers. Furthermore, knowledge management influences how organisational culture is perceived and practiced in organisations as suggested by Alharbi (2012) and this means that the more knowledge and information an organisation shares among employees, the more organisational culture positively influences employees' commitment to work considering that culture itself is regarded as shared beliefs and practices within an organisation. From the previous argument, one could conclude and recommend at the same time that Saudi public hospitals should pay close attention to the construct of knowledge management and work hard towards ensuring that knowledge and information are shared within the structure of the hospitals as this would have positive impact on the effective implementation of TQM practices. The following section addresses the recommendations and suggestions for future researchers who might conduct similar studies on TQM practices and its determinants in the healthcare sector.

6.4.3 Recommendations for Future Research

As far as research in general is concerned, one cannot claim that their research is perfect with no flaws whatsoever and there is always room for improvement that can be taken into account by future researchers. Thus and as far as the current research is concerned, future researchers attempting to run similar research may want to consider examining the influence of the three independent variables that have been

used in this study towards one another. For example, it is inferred from the findings of this study that the construct of employees' capacity may be influenced by the construct of information technologies and this may need further research to validate its grounds.

Another recommendations that may have influenced or probably enriched the findings of this study is if the construct of culture have been taken into account. This is because the respondents for the current study come from different countries and cultures but this has not been taken into account in the context of this study although it may have influenced the findings. In this context, Hofstede (1980) addresses the idea how cultural differences between people from diverse cultural background influence the attitudes and in turn the behaviour of people. Thus, it may be beneficial for future researchers to consider including culture as one of the independent variables in the conceptual frameworks of their studies.

In addition to what have been suggested above, it is recommended that future researchers may want to conduct the conceptualisation of the current study on a wider scale, probably, in both the private and public Saudi hospitals. This is because such step might provide some insight into the similarities and differences between the two sectors in terms of the impact of the independent variables on the dependent variable of TQM practices, considering that the current study kept discussion the context of the public hospitals in comparison with the context of the private hospitals. This is also because it has been mentioned that private hospitals in Saudi

Arabia have better funding capabilities as compared to public hospitals and this helps private hospitals to invest in better services and infrastructure such as high technology equipment. On the other hand, the public sector is left with scarce resources to invest in more efficient and timely services such as advanced technologies. Despite these idea, scarce research seems to have addressed the idea of comparing TQM or its influential determinants (independent variables in this study) between the public and the private healthcare sectors in Saudi Arabia. Thus, it is recommended that future researchers consider the idea of comparing the variables of the current study between public and private hospitals whether in Saudi Arabia or worldwide.

Finally and considering that one of the objectives of the current study was to conceptualise a comprehensive framework that would provide a better and more thorough explanation for the operationalisation of TQM practices, the findings of the study revealed that not all the independent variables had a significant impact on TQM. Specifically, while the independent variables of employees' capacity and information technologies had a significant impact on TQM, the impact of the construct of employees' commitment was not statistically significant. In addition, while the construct of knowledge management was found to have a significant moderating impact on the relationship between the independent variable of employees' commitment and the dependent variable of TQM, it was not found to have a moderating impact on the relationship between the two independent variables of employees' capacity and information technologies and the dependent variable of

TQM practices. Considering that each study has its own circumstances and settings that may influence its findings, it is recommended that future researchers validate such findings by examine this study in other countries and with other cultures around the world.

6.5 Research Contribution

In the course of this study, a lot of insights relating to the implementation of TQM in the public hospitals in Saudi Arabia have been drawn. Till date, this study is one of the few ones conducted in Saudi Arabia in particular and Arabian world in general especially in the context of public hospitals. Additionally, no previous empirical work has been conducted to study the relationship between IT, employee capacity, employee commitment and TQM implementation in the public hospital in Saudi. Notably, most studies have majorly considered influence of TQM on firm performance. In addition, this study equally tested the moderating influence of knowledge management on the relationship between joint influence of IT, employee commitment, employee capability and TQM. By integrating the influence of IT, employee commitment, employee capacity, knowledge management and TQM, this study has made a lot of contributions to the literature and to the practice. In this regard, some of the contributions of this study are further expatiated in the following paragraphs.

6.5.1 Contribution to the Literature

From the theoretical perspective, this study has been able to demonstrate the importance of TQM especially in the hospital industry in particular, and in the service industry in general. Aside, the study equally contributed to the TQM literature through thorough re-examination of unresolved issues concerning the relationship between the independent and dependent variables of this study. In essence, the controversy surrounding the composition of TQM, its causal relationship with other variables and TQM performance require more investigated as unveiled in this study. This study therefore, significantly contributes to the literature by integrating the influence of IT, employee commitment and employee capacity on TQM implementation. Since the results of the previous studies are inconclusive, this study has made a contribution by testing the moderating effect of KM on the relationship and which has assisted in strengthening the relationship for the purpose of effective implementation of TQM.

Second, this research has shown the theoretical importance of IT in the implementation of TQM. This is coming as a contribution as this study has re-examined the impact of IT on TQM implementation. A critical review of literature has shown that where few past studies have examined the relationship between IT and TQM, the results are inconsistent. In this regard, a number of scholars have been begun to question the IT-TQM nexus. For this relationship to be explained further and effectively, suggestions have been made to incorporate other factors as done in this study. The findings of this study, however, confirmed the positive and

significant relationship between IT and TQM implementation which is regarded as a contribution to the body of literature.

Third, the theoretical significance of employee commitment has been brought to light. Even though the relationship between employee commitment and TQM has been discussed by the previous studies, the inconclusiveness of the findings made this study to examine the relationship. Based on the positive and significant relationship between employee commitment and TQM implementation, this study has been able to conceptualize a framework that coming researchers can build foundation on when trying to predict implementation of TQM especially as it influences organizational performance.

Fourth, the influence of employee capacity has equally been established on the implementation of TQM. Employee capacity as found in this study that it effectively translates into effective decisions and actions to assist in in implementing TQM for both short term and long term (Slack & Lewis, 2002). However, the results of previous studies have been inconsistent. Therefore, re-examination of this relationship comes as a contribution as it will assist researchers since testing this variable in conjuction with others will assist future researchers to have a complete framework that can be used to predict TQM implementation effectively.

Apart from the influence of a number of factors (variables) on the implementation of TQM practices, the study took a step further by examining the influence of the moderating influence of knowledge management on the relationships between the

antecedent factors and TQM, which has not been thoroughly addressed in the literature. In other word, by incorporating a moderating variable in this study, this contributes to the body of knowledge in the literature as it helps in expanding the typical framework that appeared in the literature in which the impact of a number of variables on TQM practices is examined.

In addition, the current study provided some cross-cultural understanding of how the independent variables in the study influence its dependent variable of TQM considering that most of the research studies that have been conducted on TQM focused on Western countries or other developed countries around the world while limited research focused on the case of TQM in emerging and developing countries as suggested by (Al-Harbi, 2012). Thus and through conducting this study in an emerging Middle Eastern country, namely Saudi Arabia, the current study gains part of its theoretical contribution.

6.5.2 Contribution to Practice

Not only does the current study have theoretical contribution but also it carries some valuable practical and managerial contribution considering that the Saudi public healthcare sector encounters many challenges related to the implementation of TQM which in turn negatively influences the quality of services provided to patients, especially when compared to the private sector where services provided to patients are reported to be of high quality.

By examining what influences TQM and by providing a better understanding of how TQM implementation is achieved, the findings of the study are expected to contribute to the efforts done by the country through drawing their attention to the most influential factors that influence of the provision of TQM and thus the quality of the services provided to the Saudi public.

In addition, the findings of this study will assist the policy makers in the public hospitals to come up with policies that will ensure quality of services to the patients especially that the hospitals would have to compete with the private hospitals. In this realm, it is therefore essential that the findings of this study with respect to application of employee capacity, employee commitment and IT should be taken seriously by the hospital management. When this is done, it will go a long way to assist the public hospital directors, and other government officials in general to effectively implement TQM and which will eventually improve the performance of the hospitals.

6.6 Summary of the Chapter

The current chapter represented the last chapter in this PhD thesis and it addressed the discussions of the findings that have been generated in the previous chapter together with drawing the conclusions and the recommendations of the study. The chapter began with the recapitulation of the findings in which a summary about the findings generated in the previous chapter was provided. The chapter continued with presenting the detailed discussions about the findings that have been generated.

Having done that, the chapter proceeded with presenting the recommendations and implications of the study that were categorised into theoretical implications and practical (managerial) implications before providing the recommendations for future research. The chapter concluded with the contribution of the study.

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Appendix A

Research Questionnaire

Dear Participant,

Warm greetings from the researcher, Abdulrahman Alghamdi,

I am a PhD candidate at Universiti Utara Malaysia, Malaysia. I am doing a research titled "**Determinants of Total Quality Management: The Case of the Public Hospitals in Saudi Arabia".** This survey uses a fixed-response format so that you will be able to complete it easily and quickly (around 20-25 minutes). I simply want your opinions based on your knowledge and experience of practice in your hospital and in your field of expertise.

As a participant in this survey you face no risks as your name and identity will not be collected, so your responses cannot be associated with you. Furthermore, survey data will only be available to the researcher in aggregate and will be used mainly for academic purposes.

If you require additional information or have questions, please contact me at the details listed below.

Sincerely,
Abdulrahman Alghamdi

Mobile no.: +966555777550
E-mail: abonwaf555@hotmail.com

PART (ONE): DEMOGRAPHICS

Please (√) in the appropriate box.

1. Region

1.☐ Central Region 2.☐ Northern Region

3.☐ Southern Region 4.☐ Eastern Region

5.☐ Western Region

2. Manager Age

1.☐ 20 years – 27 years 2.☐ 28 years - 35 years

3.☐ 36 years - 43 years 4.☐ 44 years - 50 years

5.☐ Above 50

3. Working Experience

1.☐ Below 3 years 2.☐ 3 years- 7 years

3.☐ 7 years-11 years 4.☐ 11 - 15 years

5.☐ Above 15

PART (TWO): TOTAL QUALITY MANAGEMENT (TQM)

Please indicate the extent to which each of the following statements reflects the case of total quality management in your hospital based on your knowledge and experience. You can use the following rating scale:

Strongly Disagree (0%)	Disagree (20%)	Somehow Disagree (40%)	Somehow Agree (60%)	Agree (80%)	Strongly Agree (100%
1	**2**	**3**	**4**	**5**	**6**

No.	DIMENSION/ITEM	1	2	3	4	5	6
	TRAINING AND EDUCATION						
1.	Hospital employees are given education and training in how to identify and act on quality improvement opportunities.	○	○	○	○	○	○
2.	Hospital employees are given education and training in statistical and other quantitative methods that support quality improvement.	○	○	○	○	○	○
3.	Hospital employees are given the needed education and training to improve job skills and performance.	○	○	○	○	○	○
4.	Hospital employees are rewarded and recognized (e.g., financially and/or otherwise) for improving quality.	○	○	○	○	○	○
	TEAMWORK AND INVOLVEMENT	**1**	**2**	**3**	**4**	**5**	**6**
5.	Teamwork and consensus are important in our hospital.	○	○	○	○	○	○
6.	Our hospital encourages employees to participate in decision making.	○	○	○	○	○	○
7.	Our hospital tries to understand the point of view of patients in defining the quality of health services.	○	○	○	○	○	○
8.	Our hospital's senior management encourages teamwork across units and disciplines.	○	○	○	○	○	○
	STRATEGIC QUALITY PLANNING	**1**	**2**	**3**	**4**	**5**	**6**
9.	Hospital employees are given adequate time to plan for and test improvements.	○	○	○	○	○	○
10.	Each department and work group within this hospital maintains specific goals to improve quality.	○	○	○	○	○	○

11.	The hospital's quality improvement goals are known throughout the organization.	○	○	○	○	○	○
12.	Hospital employees are involved in developing plans for improving quality.	○	○	○	○	○	○
13.	Middle managers (e.g., department heads, program directors, and first line supervisors) are playing a key role in setting priorities for quality improvement.	○	○	○	○	○	○
14.	External customers are playing a key role in setting priorities for quality improvement.	○	○	○	○	○	○
15.	Non-managerial employees are playing a key role in setting priorities for quality improvement.	○	○	○	○	○	○
CUSTOMER FOCUS		**1**	**2**	**3**	**4**	**5**	**6**
16.	The hospital does a good job of assessing current patient needs and expectations.	○	○	○	○	○	○
17.	Hospital employees promptly resolve patient complaints.	○	○	○	○	○	○
18.	Patients' complaints are studied to identify patterns and prevent the same problems from recurring.	○	○	○	○	○	○
19.	The hospital uses data from patients to improve services.	○	○	○	○	○	○
20.	The hospital does a good job of assessing physician satisfaction with hospital services.	○	○	○	○	○	○
21.	The hospital uses data on customer expectations and/or satisfaction when designing new services.	○	○	○	○	○	○
INFORMATION AND ANALYSIS		**1**	**2**	**3**	**4**	**5**	**6**
22.	The hospital collects a wide range of data and information about the quality of care and services.	○	○	○	○	○	○
23.	The hospital uses a wide range of data and information about the quality of care and services to make improvements.	○	○	○	○	○	○
24.	The hospital continually tries to improve how it uses data and information on the quality of care and services.	○	○	○	○	○	○
25.	The hospital continually tries to improve the accuracy and relevance of its data on the quality of care and services provided.	○	○	○	○	○	○
26.	The hospital continually tries to improve the timeliness of its data on the quality of care and services provided.	○	○	○	○	○	○
27.	The hospital compares its data to data on the quality of care and services at other hospitals.	○	○	○	○	○	○
CONTINUOUS IMPROVEMENT		**1**	**2**	**3**	**4**	**5**	**6**
28.	Associates in the hospital try to improve the quality of their	○	○	○	○	○	○

	service.						
29.	Associates in the hospital believe that quality improvement is their responsibility.	○	○	○	○	○	○
30.	Associates in the hospital analyse their work services to look for ways of doing a better job.	○	○	○	○	○	○
PROCESS MANAGEMENT		**1**	**2**	**3**	**4**	**5**	**6**
31.	Quality data (defects, complaints, outcomes, time, satisfaction, etc.) are available.	○	○	○	○	○	○
32.	Quality data are timely.	○	○	○	○	○	○
33.	Quality data are used as tools to manage quality.	○	○	○	○	○	○
34.	Quality data are available to hourly workers.	○	○	○	○	○	○
35.	Quality data are available to managers and supervisors.	○	○	○	○	○	○
36.	Quality data are used to evaluate supervisor and managerial performance.	○	○	○	○	○	○
ROLE OF THE QUALITY DEPARTMENT		**1**	**2**	**3**	**4**	**5**	**6**
37.	Visibility of the quality department.	○	○	○	○	○	○
38.	Quality department's access to divisional top management.	○	○	○	○	○	○
39.	Autonomy of the quality department.	○	○	○	○	○	○
40.	Amount of coordination between the quality department and other departments.	○	○	○	○	○	○
41.	Effectiveness of the quality department in improving quality.	○	○	○	○	○	○

PART (THREE): EMPLOYEES' CAPACITY

Please indicate the extent to which each of the following statements reflects the situation in your hospital based on your knowledge and experience. You can use the following rating scale:

Strongly Disagree (0%)	Disagree (20%)	Somehow Disagree (40%)	Somehow Agree (60%)	Agree (80%)	Strongly Agree (100%
1	**2**	**3**	**4**	**5**	**6**

No.	Item	1	2	3	4	5	6
1.	Our hospital encourages employees to accept education and training in our hospital.	○	○	○	○	○	○
2.	Employee in this hospital are familiar with the hospital training and development programmes.	○	○	○	○	○	○
3.	When designing the hospital training and development programme, employees' views and needs are considered and taken into account by the management of the hospital.	○	○	○	○	○	○
4.	Capacity for innovation, learning new skills and applying them in practice is encouraged and promoted in our hospital.	○	○	○	○	○	○
5.	Our employees are given the opportunity to suggest improvements for key projects being introduced into practice in our hospital.	○	○	○	○	○	○
6.	Our employees are given the opportunity to be actively involved in the change implementation processes in our hospital.	○	○	○	○	○	○
7.	Resources are available for employee education and training in our hospital.	○	○	○	○	○	○
8.	Most employees in our hospital are trained on how to use quality management methods (tools).	○	○	○	○	○	○
9.	Our hospital gives quality awareness education to employees.	○	○	○	○	○	○
10.	Our hospital gives specific work-skills training to all employees.	○	○	○	○	○	○
11.	Our hospital regards employees as valuable, long-term resources worthy of receiving education and training throughout their career.	○	○	○	○	○	○
12.	Staff members in this hospital know how to handle complaining patients.	○	○	○	○	○	○
13.	Staff members in this hospital know how to handle patient problems.	○	○	○	○	○	○
14.	Staff members in this hospital are able to provide good service of high quality to patients.	○	○	○	○	○	○

PART (FOUR): INFORMATION TECHNOLOGY

Please indicate the extent to which each of the following statements reflects the situation in your hospital based on your knowledge and experience. You can use the following rating scale:

Strongly Disagree (0%)	Disagree (20%)	Somehow Disagree (40%)	Somehow Agree (60%)	Agree (80%)	Strongly Agree (100%
1	**2**	**3**	**4**	**5**	**6**

No.	Item	1	2	3	4	5	6
1.	Our hospital presents and transmits important information to employees.	○	○	○	○	○	○
2.	Our hospital collects and analyses data related to its activities.	○	○	○	○	○	○
3.	Our hospital harnesses information to improve its key processes and services.	○	○	○	○	○	○
4.	Our hospital has precise data about the competition used to identify areas of improvement.	○	○	○	○	○	○
5.	Up-to-date appointment booking system is available in this hospital.	○	○	○	○	○	○
6.	Existing information systems in this hospital have the capacity to respond to future demands in quality improvement.	○	○	○	○	○	○
7.	There is an appropriate system that ensures internal communications among different departments within the hospital.	○	○	○	○	○	○

PART (FIVE): EMPLOYEES' COMMITMENT

Please indicate the extent to which each of the following statements reflects the situation in your hospital based on your knowledge and experience. You can use the following rating scale:

Strongly Disagree (0%)	Disagree (20%)	Somehow Disagree (40%)	Somehow Agree (60%)	Agree (80%)	Strongly Agree (100%
1	**2**	**3**	**4**	**5**	**6**

No.	Item	1	2	3	4	5	6
1.	It would be very hard for me to leave my hospital right now, even if I wanted to.	○	○	○	○	○	○
2.	I do not feel my obligation to remain with my current hospital.	○	○	○	○	○	○
3.	I would be very happy to spend rest of my career with this hospital.	○	○	○	○	○	○
4.	I owe a great deal to my hospital.	○	○	○	○	○	○
5.	Too much of my life would be disrupted if I decided that I want to leave my hospital right now.	○	○	○	○	○	○
6.	I feel that I have too few options to consider if I decided leaving this hospital.	○	○	○	○	○	○
7.	I do not feel "emotionally attached" to this hospital.	○	○	○	○	○	○
8.	This hospital deserves my loyalty.	○	○	○	○	○	○
9.	If I had not already put so much of myself into this hospital, I might consider working elsewhere.	○	○	○	○	○	○
10.	I would not leave my hospital right now because I have a sense of obligation to the people in it.	○	○	○	○	○	○

PART (SIX): KNOWLEDGE MANAGEMENT

Please indicate the extent to which each of the following statements reflects the situation in your hospital based on your knowledge and experience. You can use the following rating scale:

Strongly Disagree (0%)	Disagree (20%)	Somehow Disagree (40%)	Somehow Agree (60%)	Agree (80%)	Strongly Agree (100%
1	**2**	**3**	**4**	**5**	**6**

No.	Item	1	2	3	4	5	6
1.	My hospital has processes for acquiring knowledge about our patients.	○	○	○	○	○	○
2.	Employees in our hospital have skills that are needed to maintain high-quality services.	○	○	○	○	○	○
3.	Employees in our hospital make effort to pass on their work knowledge.	○	○	○	○	○	○
4.	Employees in our hospital create learning environment for themselves and other employees.	○	○	○	○	○	○
5.	Employees in our hospital are eager to develop themselves.	○	○	○	○	○	○
6.	My hospital has processes for distributing knowledge throughout the hospital.	○	○	○	○	○	○
7.	My hospital has processes for exchanging knowledge with other hospitals.	○	○	○	○	○	○
8.	My hospital has processes for inter-organizational collaboration among different departments.	○	○	○	○	○	○
9.	My hospital has processes for acquiring knowledge about new product/services within our sector.	○	○	○	○	○	○
10.	My hospital has team devoted to identifying the best practice as to serve our patients well.	○	○	○	○	○	○
11.	My hospital has processes for exchanging knowledge between individuals.	○	○	○	○	○	○

Thank You

Appendix B

SUMMARY OF RESEARCH ON TOTAL QUALITY MANGAMENT (TQM)

Author	Number of TQM Principles	TQM Practices/principles	Industry
Sinha, Garg & Dhall (2016)	6	Continual improvement, Process approach, Mutual beneficial supplier relationship, factual approach to decision making, customer focus and leadership	Automotive Supply chain
Mohammadi (2013)	5	Staff freedom, staff training, Teamwork, Evaluation system, self-remuneration	Automotive industries
Voon et al (2014)	8	Total employee involvement, continuous improvement, continuous training, teamwork, empowerment, top management commitment, customer satisfaction and culture	Iran Hospital
Talib et al, (2013)	11	employee involvement, continuous improvement, training and education, employee encouragement, customer focus, quality culture, supply chain management, information and analysis process management, quality system and benchmarking	Service industry
Abusa and Gibson (2013)	6	Top management commitment, customer focus, people management, supply quality management, continuous improvement and process management	

Zehir et al (2012)	8	Leadership management, factual approach to decision making, employee management, system approach to management, process management, customer focus and continual improvement	
Talib et al (2013)	17	Top management commitment, customer focus, training and education, customer improvement and innovation, suppliers management, quality systems, benchmarking, quality culture, human resource management, strategic planning, employee encouragement, teamwork, communication, product and service design	
Yag and Yang (2013)	7	Customer focus, quality system, total standardization, pursuit of zero defect, quality culture and elimination of waste	
Pereira-Moliner et al (2012)	10	Management commitment, customer focus, collaboration with intermediaries, staff training, employee motivation, staff involvement, service delivery improvement, objective compliance and monitoring, and quality culture	
Metha et al (2014)	13	Institution resource management, long term strategy and planning, excellence human resource	Academic Institution

		management, continuous assessment and improvement, top management commitment and visionary leadership, student focus, employee focus, alumni focus, information management system, quality mission and vision statement, service culture, innovative academic philosophy and method, industry institution partnership, employee encouragement, teamwork, communication, product and service design	
Wang e tal., (2012)	7	Customer focus, internal and external cooperation, continuous improvement, leadership, employee fulfillment, learning, and process management	
Akgun et al (2014)	7	Process management, customer focus, strategic planning, information and analysis, and people management	
Benavides-Velasco et al (2014)	5	Leadership, employees, strategy, partnership and resources	
Singh and Sushi (2013)	10	Training and education, Teamwork, leadership, customer focus, organizational culture, supplier relationship management, process management, benchmarking, HRM practices, communication	Hotel
Arasis (2012)	10	People continuous improvement,	

Deming (1986)	14	Consistency of purpose, adopt the philosophy, do not award on business on price, constant improvement, training, leadership, drive out of fear, break down barrier, eliminate slogan and exhortation, plan of action	
Oakland (1989)	13	Understanding quality, commitment to quality, policy of quality, organization for quality, measurement for quality, plan for quality, design for quality, system for quality, control for quality, teamwork for quality, capability for quality, training for quality, implementation of quality	
Crosby (1979)	14	Management commitment, quality improvement, quality measurement, cost of quality evaluation, quality awareness, corrective action, zero-defects-committee, supervisor training, zero-defects-day, goal setting, error cause removal, recognition and quality council	
Yasdani et al, 2016	7	Leadership. HRM, strategic planning, customer focus, process management information and analysis	Automobile and supply chain
Bouranta et al, (2016)	5	Practices of top management, strategic quality planning, employee quality management, customer focus, employee knowledge and education	Hotel Industry
Lynn et al (1994)	6	Top management support, quality information , process management,	

		workforce management, supplier involvement and customer involvement
Conca et al (2004)	8	Leadership, quality planning, employee management, supplier management, customer focus, process management and continuous improvement
EFQM (2010)	8	Leadership, policy and strategy, people, process, partner and resources, process, customer results, society result and key results
Anil and Satish (2016)	18	Quality information analysis, quality assurance, quality citizenship, quality culture, benchmarking, process and product design, process management, product innovation, knowledge management, continuous improvement, supplier quality management, customer focus, employee involvement, education and training, strategic management

Appendix C

Facilitate the mission

المملكة العربية السعودية
وزارة الصحة
الإدارة العامة للبحوث والدراسات

١٤٣٨/١/٦هـ الموافق ٢٠١٦/١٠/٢م

خطاب إنهاء مهمة علمية

المحترم سعادة/ الملحق الثقافي السعودي – ماليزيا

السلام عليكم ورحمة الله وبركاته....

إشارة إلى موضوع الطالب/ عبدالرحمن أحمد سعيد الغامدي، مبتعث من قبل وزارة الصحة (مديرية الشؤون الصحية بجدة) لدراسة درجة الدكتوراه على حسابه الخاص في تخصص "إدارة صحية" بكلية إدارة أعمال بجامعة أوتارا بماليزيا، رقم الهوية الوطنية (١٠٣١٤٨٦١٤٣) وعنوان الرسالة: " محددات إدارة الجودة الشاملة: حالة المستشفيات العامة في المملكة العربية السعودية ".

نحيط سعادتكم علماً بأن الطالب المذكور قد أكمل مهمته في جمع البيانات الخاصة بموضوع دراسته وذلك خلال الفترة من (١٤٣٧/١/١هـ) الموافق (١٤ أكتوبر ٢٠١٥م) وحتى (١٤٣٧/٦/٦هـ) الموافق (١٥/مارس ٢٠١٦م) في مستشفيات وزارة الصحة بالمملكة العربية السعودية.

وقد أعطى هذا الخطاب بناءً على طلبه لتقديمه للملحقية الثقافية السعودية في ماليزيا.

وتفضلوا بقبول خالص تحياتي ،،،

مساعد مدير عام الإدارة العامة للبحوث والدراسات

ص. عذاري فيصل العتيبي

الرمز البريدي: ١١١٧٦ ص.ب الرياض: ٢٧٧٥ فاكس: ٠١١٤٧٣٥٠٣٩ هاتف: ٠١١٤٧٣٥٠٣٨
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Kingdom of Saudi Arabia
Ministry of Health
General Directorate for Research and Studies
(GDRS)

Utara University
Graduate School of Business
Malaysia

Date: 02/10/2016

Subject: To facilitate the mission of Mr. Abdulrahman Ahmad Al Ghamdi
Academic Number: 94353

To whom it may concern

Dear Sir/Madam,

This is to inform you that, ***Mr. Abdulrahman Ahmad Al Ghamdi,*** who submitted an application to ***The General Directorate for Researches and Studies, Ministry of Health, at Kingdom of Saudi Arabia (GDRS-MoH)*** to conduct his research project titled "***Determinants of total quality management: The case of the public hospitals in Saudi Arabia***" as a part of his Ph.D degree thesis at Graduate School of Business, Utara University, Malaysia.

Please note that, the candidate finished his mission in data collection from **(14/10/2015)** to **(15/3/2016)** at Governmental Hospitals, Saudi Arabia.

Yours Faithfully

Assistant Director
General Directorate for Research and Studies

Athari F. Alotaibi

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