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Challenges To Successful Total Quality Management (Tqm) Implementation In Saudi Higher Education Institutions

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CHALLENGES TO SUCCESSFUL TOTAL QUALITY MANAGEMENT (TQM) IMPLEMENTATION IN SAUDI HIGHER EDUCATION INSTITUTIONS

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ABSTRACT

The purpose of the study was to identify the challenges to successful total quality management (TQM) implementation in Saudi higher education institutions (HEIs) according to the perspectives of faculty members. A quantitative study was conducted to identify the demographic independent variables of faculty members (i.e., years of experience, gender, and job status) that may have impacted the strategic, organizational, human resources, and procedural challenges of TQM implementation as the dependent variables. A total of 194 faculty members of Yanbu Industrial College and Yanbu University College in Yanbu Al Sinaiyah City completed the online survey developed for this study. The survey instrument contained two parts. The first part collected some demographic variables of the respondents, and the second part included the 20 challenges to successful TQM implementation. The survey followed a five-point Likert-type scale to rate the challenges to successful TQM implementation. Quantitative data were collected using an electronic survey to find answers to four research questions found in this study. This study included one descriptive question and three null hypotheses that were tested. The data showed that strategic challenges ranked first as most challenging, followed by procedural challenges, human resources challenges, and organizational challenges. A multivariate analysis of variance (MANOVA) test was applied to see if significant differences existed between faculty members in each four categories of TQM implementation challenges based on the independent variable that was examined for each null hypothesis. The major findings of the study were: (a) a significant difference existed between faculty members based on their years of experience in

strategic, organizational, and human resources challenges; (b) a significant difference did not exist between faculty members based on gender; and (c) a significant difference did not exist between faculty members based on job status. Implications for Saudi HEIs along with further research recommendations were suggested.

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CHAPTER 1

INTRODUCTION

Education is a major contributing factor to success, as it offers students insight into their interests and the means to achieve. It is working to keep with modernity, constantly striving to optimize itself to meet the demands of global education. When the world and principles of business combine with education, there is more demand on output, increasing versatile and intelligent participants of the labor market (In'airat & Kassem, 2014).

Without quality in education, the well-being of society lacks insurance. Improvements in education quality continue on to benefit the society which the institution serves (Alzhrani, Alotibie, & Abdulaziz, 2016). High quality in education results in more capable professionals contributing to and influencing communities (Al Tasheh, 2013). Higher education institutions (HEIs) strive to meet increasing demands with a deficit of resources in an attempt to maintain competitiveness (Altahayneh, 2014). In addition to increased competition and shortage of resources, other struggles include changes in business and technology environments, the transition to knowledge-based from industrialized societies, and unstable market conditions. Such obstacles have pushed HEIs to reevaluate their methods and incorporate total quality management (TQM) into their strategies to reach optimum output (Abbas, 2010). Implementing TQM in Arab HEIs has attracted the interest of many researchers and practitioners (Abbas, 2010; Abu Amer, 2008; J. U. Ahmed, 2008; M. H. Ahmed & Siddiek, 2012; Aldaweesh, Al-

Karaghouli, & Gallear, 2013; Ali & Shastri, 2010; Altahayneh, 2014; Al Tasheh, 2013; Aspinwall & AlaKhalifa, 2000; Alzhrani et al., 2016; Atartouri & Agadir, 2006; Zabadi, 2013). TQM has been used systematically to improve quality in institutions; however, its application has its own set of challenges, due to the fact that preexisting cultures of these institutions may feel threatened by TQM's infrastructure (Zabadi, 2013). "While TQM has been suggested in principle to be effective for improving performance, its application in practice involves many challenges" (Mosadeghrad, 2014b, p. 161). In the same context, several researchers (Al Tasheh, 2013; Beer, 2003; Coate, 1993b; Hansson & Klefsjo, 2003; Lakhe & Mohanty, 1994; Massy, 2003; Matthews, 1993; Mosadeghrad, 2014b; O'Mahony & Garavan, 2012; Owlia & Aspinwall, 1997; Pratasavitskaya & Stensaker, 2010; Zabadi, 2013) pointed out that implementing TQM in both industrialized and developing countries faced several challenges and obstacles. In this research, the main purpose was to identify and investigate the challenges to successful TQM implementation in Saudi HEIs.

Significance of the Problem

Improving the performance of HEIs and maintaining their competitiveness are global challenges. Getting past these obstacles is crucial, not only to enable HEIs in competition, but also for their survival (Zabadi, 2013). TQM's appeal and success has influenced an increased competition for incorporating it into HEIs' frameworks (Alzhrani et al., 2016). "HEIs, Arab ones in particular, are facing challenges that may prevent the effective application of TQM" (Al Tasheh, 2013, p. 213). Understanding the obstacles to implementing TQM allows for more effective strategies to be developed, increasing the likelihood of achieving business excellence. Hence, it is key to define the challenges that must be overcome to execute TQM successfully.

Consequently, this identification process may help to prevent or reduce the failure of TQM implementation in the future.

Purpose of the Study

Education administration in the Kingdom of Saudi Arabia (KSA) has already incorporated TQM, and higher education institutions are currently working to apply and implement quality standards. Having gone through constant explosive growth in economy and education, KSA is mandating that HEIs apply management methods that force universities to implement modern management styles including TQM to maintain a constant effort toward non-stop improvement (Alamri, 2011; Alzhrani et al., 2016). This quantitative study utilized select demographic variables of the respondents (i.e., years of experience, gender, and job status) on levels of challenges to successful TQM implementation. Finally, this study offers insight, potentially assisting higher education institutions with an interest in implementing TQM, by identifying the challenges of successful TQM implementation in Saudi HEIs.

Research Questions

This study sought to answer the following questions:

1. What are the current challenges of successful TQM implementation in Saudi HEIs?

2. Based on the participants' years of experience, are there significant differences on the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM?

3. Based on the participants' gender, are there significant differences on the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM?

4. Based on the participants' job status, are there significant differences on the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM?

Null Hypotheses

Research Question 1 is to be addressed through descriptive statistics.

Research Question 2: H_01. Based on the participants' years of experience, there is not a significant difference on the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM.

Research Question 3: H_02. Based on the participants' gender, there is not a significant difference on the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM.

Research Question 4: H_03. Based on the participants' job status, there is not a significant difference on the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM.

Limitations

The study's limitations are suggested in its title. *Challenges to Successful Total Quality Management (TQM) Implementation in Saudi Higher Education Institutions* are derived from perspectives of faculty members. Another possible methodological limitation of the study was in regard to education's adoption of TQM, the misinterpretation of TQM philosophy, and the incomplete knowledge about TQM, which could affect participants' answers to some questions.

Delimitations

1. The study looked at HEIs in Yanbu Al Sinaiyah City, Saudi Arabia.

2. The study looked only at public HEIs in Yanbu Al Sinaiyah City, Saudi Arabia, and private HEIs were not included.

3. The study only looked at faculty members employed at public HEIs in Yanbu Al Sinaiyah City, and administrators were not included.

4. The challenges to successful TQM implementation in this study were limited to only some personal variables.

Definitions of Terms

The following terms are used in this study:

Challenge is something requiring immense effort in order to be done successfully, or the situation of handling such a demand ("Challenge," 2016).

Faculty members at a Saudi public university are professors, associate professors, and assistant professors, in addition to lecturers, teachers, and research assistants (Ministry of Higher Education, 1996b).

Gender, either male or female*,* represents the sex of each faculty member in the sample.

Higher education (HE) is postsecondary learning having various stages and having academic degrees based on programs completed in number of years. It ranges from an associate to a doctorate degree (Ministry of Higher Education, 1996a).

Higher education institutes (HEIs) include all educational bodies that provide postsecondary learning (Organization for Economic Cooperation and Development [OECD], 2011).

Job status is one of the variables used in this study to identify faculty members' position in HE academia: teacher, lecturer, assistant or associate professor, or professor.

The Ministry of Higher Education in KSA is a body charged with the task of setting regulations for all HEIs, making sure those regulations are followed, driving all aspects of the development of university education, supervising efforts made to reach those developmental goals, and facilitating the coordination of universities, particularly between university departments and their respective research studies (Alamri, 2011). After January 29, 2015, all the authorities and powers of the Ministry of Higher Education moved to the Ministry of Education (The Official Saudi Press Agency, 2015).

The Royal Commission for Jubail and Yanbu is a governmental organization that was established on September 21, 1975. The commission is meant to strive for improvements of Jubail and Yanbu cities as regions for growth in industry and be a legally independent unit (https://www.rcjy.gov.sa/en-US/Pages/default.aspx).

Total quality management (TQM) is "a strategy to enhance customer satisfaction and organizational performance by providing high-quality products and services by involving stakeholders, encouraging teamwork, customer-driven quality and continuously improving structures and processes by applying quality management techniques and tools" (Mosadeghrad, 2014a, p. 320).

Years of experience is one of the variables used in this study, referring to the number of years worked in one or more institutions of higher education.

Significance of the Study

HEIs have given special care to optimizing infrastructure due to its crucial role in maintaining competitiveness and survival. As a result of the positive impact TQM has had on performance, this approach to quality has attracted the attention of academics and the desire for further research (Al Tasheh, 2013). Although many organizations have experienced the benefits

of TQM, there are quite a number who have failed to utilize TQM due to flawed execution (Brigham, 1993). There is a lack of research on TQM's implementation in the KSA, especially in postsecondary institutions, making identifying the challenges of carrying out this system key to higher success rates in the future. As a result, this study offers the means to building strong quality management in Saudi HEIs.

Structure of the Study

The research is organized into five chapters. The first chapter introduced the study, its significance and purpose, as well as background to the challenges of implementing TQM in HEIs. Chapter 2 provides a brief overview of HE in the KSA and reviews the concepts of quality, TQM, contributors of TQM, and the role TQM has to play in HE. The third chapter covers the method of research, and the fourth chapter presents the study's results. The final chapter discusses results, what those results imply, and recommendations for further research.

CHAPTER 2

LITERATURE REVIEW

A Brief History of the Kingdom of Saudi Arabia's Higher Education

HEIs in the KSA have been huge in their role of leading development in multiple sectors.

HEIs have been largely involved in national development plans of the modern state of KSA

(Ministry of Higher Education, 2014). To grasp fully the role of HE in KSA, one must look at its

history through the objectives, development, and types of Saudi HEIs as well as the methods,

growth, distribution, challenges, and quality in Saudi HEIs.

Historical Preface

In 1927 King Abdul-Aziz sent 14 students ranging in specialties to Egypt, which gave

Saudi Arabia its first exposure to higher education outside the country. Established in 1949, the

first HEI in KSA was the college of Islamic Law (Shari'a) in Makkah (Ministry of Education,

Ministry Deputyship for Planning and Information, 2013). Subsequently, KSA's Ministry of

Higher Education was established in 1975. The ministry was in charge of planning and

coordinating the requirements of higher education. It also provided national cadres to serve the

country's development academically and administratively (Ministry of Education, 2016).

Higher education in the KSA has progressed in all aspects and now consists of 39

universities affiliated with the Ministry of Education with a degree of independency on the

academic and administrative level. It responds to all policies and regulations established by the

ministry. The ministry is also in charge of Saudi students studying abroad (Ministry of Education, 2016).

Objectives of Higher Education

The Ministry of Education (1996) identified the objectives of HE as the following:

1. To offer academic specialization and help high potential students, sponsoring talented academics to achieve development and interests of the nation.

2. To promote loyalty to Allah (God), provide students with Islamic culture, and support students' potentials and capabilities.

3. To prepare and equip citizens with academic knowledge and experience so that they perform their duties and maintain responsibilities in serving their holy land.

4. To provide opportunities to exceptional students of higher education in various specializations.

5. To maintain a positive role in academia, promote international academic efforts in all subjects as well as find appropriate solutions to the demands of modern life and adapt to new technology.

6. To promote publication and academic research to service the Islamic religion and to enable the country to contribute humanitarian efforts for the betterment of humanity.

7. To translate academic text into the Arabic language, encouraging translation into Arabic and making knowledge more accessible.

8. To conduct training services for graduates to prepare them for the labor market. (pp. 21–22)

Higher Education Stages

Saudi HEIs continued to be founded until the country achieved prosperity, as demonstrated by the establishment of colleges and universities all over the KSA along with growing admissions. According to the Ministry of Higher Education, Ministry Deputyship for Planning and Information (2013), higher education's development in the kingdom had three stages: establishment stage, expansion stage, and comprehensive stage.

Establishment Stage: 1949–1960

At this stage, HE sprouted in the KSA. The College of Shari'a's (Islamic Law) founding was followed by that of a teacher college in 1952, another college of Shari'a (Islamic Law) in Riyadh, and a college of Arabic language in 1954. In 1957 the kingdom's first university, King Saud University, was founded in Riyadh. Colleges of the arts, sciences, administration, and pharmacy were subsequently established in various parts of the country (Ministry of Higher Education, Ministry Deputyship for Planning and Information, 2013).

Expansion Stage: 1961–1980

The KSA experienced growth in the number of universities in this period, beginning with the Islamic University in Madina (1961), followed by King Abdulaziz University in Jeddah (1967), Imam Muhammad Ibn Saud Islamic University in Riyadh (1974), King Fahad for Petroleum & Minerals University in Dhahran (1974), and King Faisal University in Ihsaa (1974). This stage concluded with the founding of Umm Al-Qura University in Makkah (1980). Containing 58 colleges in total, these universities offer a range of specializations. Some of these universities have established branch campuses, namely in Abha and Kassim. This expansion of specializations in higher education resulted in an increased demand for educators and a growth in the number of teacher colleges in Riyadh, Abha, Dammam, Rass, and Taif. All are affiliated

with the Ministry of Higher Education (Ministry of Higher Education, Ministry Deputyship for Planning and Information, 2013).

Comprehensive Stage: 1981–2012

At this stage, all regions contained HEIs. As a result, students in all provinces were able to complete their studies without having to go to major cities. Specializations were available in all colleges in subjects to meet labor market demands, national planning, and community demands of specialties in computer science, medicine, and engineering as well as in the humanities. The beginning of this stage started with the opening of King Khalid University in 1989. A university for electronics was also established in 2011. During this time, higher education was given special attention and support, and state colleges, institutes, and universities flourished kingdom wide. Leading up to 2013, colleges and universities numbered 543 and 33 (public and private), respectively (Ministry of Higher Education, Ministry Deputyship for Planning and Information, 2013).

Types of Higher Education

The KSA's Ministry of Higher Education (1996b) stated that post-secondary studies follow stages of academic degrees based on programs and years of study. Higher education ranges from an associate's degree to a doctorate degree. Saudi HEIs have two major types of studies: undergraduate and graduate.

Undergraduate Studies

Undergraduate studies are divided into two parts—associate's diploma and bachelor's degree. The programs available lead to different kinds of degrees, according to the program of study and the number of years (Ministry of Higher Education, 1996b). The following is a description of all types of undergraduate studies

The associate degree. This degree consists of a specialized program for two or three years postsecondary. The program is comprehensive and has the flexibility to meet the needs of the individual, society, and development plans. There are 400 programs provided by community and technical colleges to meet the desperate need for technicians and professionals with the skills and expertise for development plans in Saudi Arabia, thus growing a more trained and experienced workforce to help and to contribute to the progress of the national economy and sustainable development in the country. There are 40 technical colleges kingdom wide offering specializations in various fields as well as 26 technical institutes for women that provide a postsecondary diploma. Their key specializations are clothing design and production, computers, and cosmetology. Likewise, two industrial and two university colleges in Jubail and Yanbu supervised by the Royal Commission of Jubail and Yanbu grant associate diplomas in various engineering technology sectors. The two university colleges also grant associate diplomas in private programs and community service (Ministry of Higher Education, 1996b).

The bachelor's degree. This degree represents a higher stage in postsecondary education. This degree entails four years or eight semesters of study. There are two colleges in Jubail and Yanbu supervised by the Royal Commission of each respective city, offering bachelor's degrees in technological specializations, which are available to both male and female students. There are about 2,029 available bachelor's degree programs collectively in the KSA (Ministry of Higher Education, 1996b).

Graduate Studies

Graduate studies are the advanced stage of academics and include higher diplomas, master's degrees and doctorate degrees, along with fellowship programs. Students must obtain their bachelor degree to enroll in a graduate degree program. Below is a description of all types

of graduate studies, ranging from the higher diploma degree to the fellowship (Ministry of Higher Education, 1996a).

Higher diploma degree. Having a one- to two-year program, postgraduate programs offer courses similar to those for undergraduates. The completion of a simple academic research project is required to graduate. Schools that do not have a research requirement usually have a graduation project requirement to earn the degree (Ministry of Higher Education, 1996a).

Master's degree. According to the Ministry of Higher Education (1996a), a master's degree has two tracks—thesis and non-thesis. In the first track, a minimum of 24 credit hours of coursework and a thesis are required. The non-thesis track consists of a minimum of 42 credit hours and a research project, but not a written thesis.

The doctorate degree. This degree can also be obtained in two approaches. The first approach consists of a minimum of 30 credit hours of coursework and a dissertation. The second approach requires a minimum of 12 credit hours and a dissertation (Ministry of Higher Education, 1996a).

The fellowship. This is a technical degree granted to those who have earned a bachelor's degree in medicine to get a consultant degree after studying for four to six years. The fellowship of a healthcare professional degree offers training in a specific medical specialization. A limited number of Saudi universities offer fellowship programs (Ministry of Higher Education, 1996a).

Methods of Providing Higher Education

According to Ministry of Higher Education, Ministry Deputyship for Planning and Information (2013), the types of Saudi higher education offered are designed to cope with the requirements of different stakeholders and learners of the society it serves. Saudi HEIs provide

seven types of higher education studies. The following is a description of the types provided by Saudi HEIs.

Full-time education. Students focus on attending lectures and practical sessions, providing that attendance is not less than 75% of lectures for each class. Full-time students compose 85% of the higher education student body (Ministry of Higher Education, Ministry Deputyship for Planning and Information, 2013). Full-time students can learn in two styles: traditional education and parallel education.

Traditional education. This is the traditional learning style, which complies with the standard quality of education according to the components of the learning process (i.e. in-person communication between teachers and students). It is a widespread type of full-time education in Saudi HEIs. Regular students are given an incentive to commit to academics in the form of a monthly stipend (Ministry of Higher Education, Ministry Deputyship for Planning and Information, 2013).

Parallel education. This is a new type of learning which allows students to study at a college without admission. Tuition varies depending on the specialization. This approach was introduced in Saudi Arabia in 2002 and is offered for bachelor's degrees, master's degrees, and doctorate degrees. Ten universities offer bachelor's degree programs using parallel education, and there are two universities that provide programs for higher studies (Ministry of Higher Education, Ministry Deputyship for Planning and Information, 2013).

Distance education. This type of learning uses the computer and Internet as the main platforms for communication and completion of education. There is usually no direct contact between teachers and students. The KSA offers part-time and developed part-time distance

learning (Ministry of Higher Education, Ministry Deputyship for Planning and Information, 2013).

Part-time education. This is a university system that promotes education and learning, especially to those who are already working and are unable to attend regular lectures. Interest in this style of education continues to grow as the number of secondary education graduates increases. The first university to implement this system was the College of Islamic Law (Shari'a) at Imam Muhammad Ibn Saud Islamic University in 1955. To improve learning services, some universities provide an extensive selection of courses each semester for part-time learners. About 15% of students in the KSA are in a part-time program (Ministry of Higher Education, Ministry Deputyship for Planning and Information, 2013).

Developed part-time education. This is not too different from traditional part-time education. Lectures are attended online where educators and learners interact, materials are provided, and support is given to students. Students complete all course requirements online (Ministry of Higher Education, Ministry Deputyship for Planning and Information, 2013).

Growth and Distribution of Higher Education Institutions

The growth in the number of HEIs in the KSA is the result of the increased demand and development in higher education. In the past few years, Saudi Arabia has seen unprecedented development and growth, namely in the expansion and construction of universities, as well as the setting up of new programs and specialties. Universities have been founded in all parts of the country, and higher education has been made available to most of the population (Ministry of Higher Education, 2014).

Growth in Number of Universities

According to the Ministry of Education (2015), the number of universities increased from 32 in 2010 to 39 in 2014. Table 1 shows the development and growth of universities during the years 2010–2014. In 2014, of the 39 universities, 28 were public and 11 were private. The total number of universities in 2010 was 32, and from this number 24 universities were public.

Table 1

Growth in Number of Universities in the Kingdom of Saudi Arabia from 2010–2014

Universities	2010	2011	2012	2013	2014	Annual Growth PCT	Total Growth PCT
Public	24	24	24	25	28	4%	17%
Private	8	8	9	9	11	8%	38%
Total	32	32	33	34	39	5%	22%

Note. From *The Education in KSA: National Indicators and International Comparisons,* by the Ministry of Education, 2015, Riyadh, Kingdom of Saudi Arabia: The Ministry of Education. Copyright 2015 by the Ministry of Education.

Growth in Number of Colleges and Institutes

The growth trends of universities also applies to colleges in Saudi Arabia. Colleges have increased in number, as shown in Table 2. The total number of colleges in 2014 reached 585 public and 79 private; those numbers in 2010 were 395 and 39, respectively. Growth percentage of colleges during these years was 52%. It is worth noting here that private colleges significantly outnumbered public colleges (Ministry of Education, 2015).

Table 2

Growth in Number of Colleges and Institutes in the Kingdom of Saudi Arabia (2010–2014)

College Type	2010	2011	2012	2013	2014	Annual Growth %	Total Growth %
Public	395	411	487	524	582	10%	47%
Private	39	31	68	68	79	19%	13%
Total	434	452	555	592	661	11%	52%

Note. From *The Education in KSA: National Indicators and International Comparisons,* by the Ministry of Education, 2015, Riyadh, Kingdom of Saudi Arabia: The Ministry of Education. Copyright 2015 by the Ministry of Education.

The Growth of University Numbers Per Million Citizens

Table 3 shows the number of universities per million citizens. The indicator value increased from 1.2 to 1.27 in a relatively short time (i.e., there was a total growth average of 6% from 2010–2014). This change was due to universities experiencing explosive growth in student population (Ministry of Education, 2015).

Table 3

Growth of University Numbers For Each One Million People

Number of Universities	2010	2011	2012	2013	2014	Annual Growth %	Total Growth %
Per million	1.2	0.8	1.15	1.16	1.27	1%	6%

Note. From *The Education in KSA: National Indicators and International Comparisons,* by the Ministry of Education, 2015, Riyadh, Kingdom of Saudi Arabia: The Ministry of Education. Copyright 2015 by the Ministry of Education.

Challenges in Saudi Higher Education Institutions

According to the Ministry of Higher Education (2009), there were some challenges and obstacles in Saudi Arabia's HEIs, which led to the weakness of university output. The obstacles were as follows:

- severe centrality in university management and lack of employee evaluation;

- management incompetence, manifested in disregard of academic policy, incompetent admission system and curriculum structure, overcrowded classes, and lack of support for academic research;

- high student-teacher ratio, too many students and not enough teaching staff; and

- failure to produce graduates that met labor market requirements, absence of interaction between universities and labor production sectors, and shortage of curriculum development professionals.

In order to face these challenges, two solution tracks were proposed by the Ministry of Higher Education (2009):

- A short-term track that focused on problem areas in admission, managing growth, and developing the ability to produce graduates that meet labor market demands.

- A long-term track that focused on making sustainable improvements in infrastructure that also supported competitiveness for HEIs, expanded research, and increased funding for studying abroad.

As a result, all efforts acting as development initiatives were described as having the following characteristics:

- allowed for extensive improvement in all aspects of higher education,

- were able to respond to changes in labor market demands,

- considered what the community needed and initiatives were provided to meet the demands of development,

- fostered positive international study abroad experiences and exposure to globalization for students,

- developed competition among HEIs and enable HEIs to establish their own distinctiveness,

- reinforced standards of quality, brought the institution to or beyond standards of excellence, and

- created open communication among HEIs, allowing for the sharing of experience and a culture of inter-learning (Ministry of Higher Education, 2009).

Quality in Saudi Higher Education Institutions

As mentioned in the characteristics of development initiatives, plans and programs were needed to promote the success of quality. Promising standards of quality in higher education had been a goal of the Ministry of Higher Education in the KSA. The National Commission for Academic Accreditation and Assessment (NCAAA) and the National Center for Assessment in Higher Education (NCAHE) was one of the key organizations established to expedite this process (Ministry of Higher Education, Ministry Deputyship for Planning and Information, 2013).

National Center for Assessment in Higher Education

The NCAHE was established to promote development, control quality, strive toward higher competency, and review performance according to international criteria. It was established in 2001 to facilitate the international vision of assessment and quality in education. These criteria were meant to raise the competency of educational institutions, which provided

quality in the outputs of higher education as well as set up criteria for postsecondary admissions (NCAHE, 2016).

National Commission for Academic Accreditation and Assessment

Established in 2004, NCAAA strives to improve quality in HEIs by defining performance criteria, providing clarity of expectations, and providing objectives. The organization evaluates the implementation of its policies by reviewing HEIs' performance in an attempt to maximize each institution's ability to meet the demands of the labor market and compliance with set criteria (Ministry of Higher Education, Ministry Deputyship for Planning and Information, 2013). In order to compete with international postsecondary educational standards, the NCAAA offered support and evaluation to push for the facilitation of quality (NCAAA, 2015).

The organization also assumes responsibility for other factors that contributed to quality, such as educational resources, adherence to policies, and services offered, all of which ultimately contributed to the quality of the learning experience. Eleven articles of policy were developed that outlined expectations of learning output for each level of HE. All HEIs are expected to apply these policies to create quality internally to satisfy all 11 requirements (NCAAA, 2015).

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Quality in Education

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The idea of quality has many interpretations; however, the common denominator lies in standards for excellence (Ellis, 1993). Viewing education as a service industry as opposed to one of production allows for the parameters of quality to be more easily identified, as stakeholders and customers have expectations in the design and execution of courses, as well as the support and guidance offered (Sallis, 2002). In the same context, the definitions of quality also vary. Some institutions define quality as meeting objectives, whereas others attach the concept to building reputation, expanding student body perspective, and developing philosophy

on the utilization of knowledge in the field. These definitions point to the inputs and outputs of education, as indicated by Chapman and Adams (2002). The inputs consist of student-faculty ratio, instructor training, quantity of resources made available, and extent of instructor–student interface; meanwhile, the outputs consist of test scores, graduation rates, and success of graduates in the field.

Malkova (1989) established quality as standards that graduates must be able to meet in values, skill set, and knowledge. In contrast, the United Nations Organization for Education, Science, and Culture (UNESCO, 2005) saw quality at education's core, taking place in the importance of the learning environment while meeting basic education needs. Quality in education is also interpreted as an institution's capacity to satisfy the needs of whom and what it services (Shadreck, 2013). Achieving quality in education to satisfy consumers effectively is an all-encompassing process that begins from administration and has the capacity to raise the standard of the institution to be more competitive in local and global markets.

Total Quality Management

W. Edwards Deming created TQM as a tool for guiding the improvement of quality. It is a comprehensive approach that aims to improve quality continuously, whether it is for a service or product. It is a non-stop effort to achieve quality in all aspects of organization by focusing on systematic, integrated, consistent, organization-wide perspective including everything and everyone (Poornima, 2011). This system of management perpetuates higher standards through all characteristics that allow a business to survive: the ability to be competitive, efficient, flexible, and cohesive (Ho & Wearn, 1995).

Concepts of Total Quality Management

Many definitions of TQM have been developed, and this section presents several examples. The American Society for Quality (ASQ, 2016) defined TQM as a management-driven process to achieve the ultimate goal of customer satisfaction. TQM requires complete and mindful participation of all members of an organization to maximize the efficiency of inputs, resulting in ideal output in the form of quality (ASQ, 2016). According to American National Standards Institute (ANSI, 1994), "TQM is management approach of an organization centered on quality based on participation of all its members and aiming at long-term success through . . . customer satisfaction, and benefits to all members of the organization and to society" (p. 6). The British Standards Institution (BSI) described TQM as a management philosophy and company mindset created through practice, all of which aim to utilize resources efficiently to satisfy an institution's goals (Kiran, 2016).

Tobin (1990) defined TQM as "the totally integrated effort for gaining competitive advantage by continuously improving every facet of organizational culture" (p. 10). Corrigan (1995) outlined TQM as "a management philosophy that builds a customer-driven, learning organization dedicated to total customer satisfaction through continuous improvement in the effectiveness and efficiency of the organisation and its processes" (p. 61). Roosevelt (1995) defined TQM as strategic infrastructure design that demands assessment, revision, and continuous improvement of approach. Similarly, Marsh (1996) believed that "total quality is a philosophy with tools and processes for practical implementation aimed at achieving a culture of continuous improvement driven by all the employees of an organization in order to satisfy and delight customers" (p. 44). TQM is a complete company culture philosophy in which all

participants must invest effort to work toward quality; each member is aware of this concept and the role it plays in meeting objectives and satisfying clientele (Zabadi, 2013).

As described, the interpretations of TQM describe similar processes—inclusiveness of all organizational members, creation of an organizational culture that moves toward objectives of quality, and constant working toward improvement to meet goals and satisfy customers. TQM is a total management philosophy, strategy, tool, technique, and process for continuous, comprehensive improvement throughout an organization via all levels of employees (Sallis, 2002).

History of Total Quality Management

TQM came to be when the Naval Air Systems Command described its Japanese-influenced management strategy, an umbrella strategy for constantly striving to improve quality in its entirety. TQM is composed of aspects of several fields: behavioral sciences, the analysis of quantitative and non-quantitative data, economics theories, and process analysis (Westcott, 2006). As a management system in Japan, TQM has proven to be quite effective. The idea of total quality presented itself in early 20th century studies as a movement to work toward the idea of modern efficiency. When TQM was first utilized by the Japanese, principles of quality were applied in order to reconstruct the crippled industry, which proved to be most effective in the late 1970s (Al-Amri, 2012).

TQM was then developed and widely adopted by industries around the world. TQM quickly developed a reputation as an effective implement to sharpen competitiveness (Yang, 2012). Although this management system was initially designed for production, Deming brought to light that its principles also applied to service. Prominent authors also promoted TQM, such as Crosby, Ishikawa, and Juran (as cited in Crawford & Shutler, 1999).

Since the beginning of TQM's implementation, it was natural that its components developed over time and experienced modifications. Research and usage of the management system have contributed to these changes. Table 4 contains the history of TQM.

Table 4

The History of Total Quality Management

Period	Events
1920s	• The idea of quality management sprouts in the United States as an approach to methodical management. • Planning and executing a plan become two finite processes. Union opposition results from employees lacking a say in the ongoings of their work environment. • Hawthorne experiments reveal a relationship between employee productivity and participation.
1930s	• Methods for statistical analysis and quality control were developed by Walter Shewhart.
1950s	• TQM begins: W. Edwards Deming shared his statistical analysis and quality control methods with Japanese engineers and executives. • Joseph M. Juran taught methods of quality control. • Total Quality Control by Armand V. Feigenbaum, was published. • Philip B. Crosby's zero defects was developed and sought to eliminate defects in production.
1968	• The term "Quality management systems" is established. • Kaoru Ishikawa's contributions establish Japan as a leader in quality.
Today	• TQM is an established approach to organizational quality management. • Quality standards such as the ISO 9000 series, the Deming Prize, and the Malcolm Baldrige National Quality Award delineate and recognize TQM principles.

Note. From "*Quality Models and Theories*" by R. T. Westcott, 2006, Milwaukee, WI, *in the certified manager of quality/organizational excellence handbook* (3rd ed., pp. 292–648): American Society for Quality Press. Copyright 2006 by the American Society for Quality.

Pioneers of Total Quality Management

The promoters of TQM thoroughly explored and analyzed its value. Researchers such as Deming, Crosby, and Juran have shown that TQM led to transition from focus on quality just in products to also include people (as cited in Mukhopadhyay, 2005). The following section examines the works of Deming, Crosby, and Juran, all of whom are regarded as major contributors to quality management.

W. Edward Deming

Dr. W. Edwards Deming (1900–1993) is known as a major icon in management theory development and made major contributions to reconstructing Japan's management techniques in industry (Van Horn & Schaffner, 2003). Believing that statistical analysis could give management guidance, Deming was attracted to the world of numbers and graduated with a Ph.D. in mathematics and physics from Bell University. Using his skills as a statistician, he offered management consulting and helped Japanese businesses become competitive after World War II, subsequently resulting in a shift toward quality in the 1980s (Van Horn & Schaffner, 2003).

His influence affected business in the United States, and the development of TQM, a means of using statistical data to monitor quality and dictate what management should do. Although Deming developed TQM, he was also critical of it, applying his own theory to itself to create a more refined philosophy (Petersen, 1999). The following are three of Deming's main contributions: Deming's 14 points for management, management's seven deadly diseases, and system of profound knowledge (Knowles, 2011).

Deming's 14 Points for Management. Deming (1986) clarified his theories in his "principles for transformation of western management," also known as Deming's 14 points for management. His principles are:

1. Create constancy of purpose toward improvement of product and service and strive to create jobs and be competitive.

2. Adopt the new philosophy. Management must be fully aware of duties and be a driver of change whenever necessary.

3. Cease dependence on inspection to achieve quality. Integrate quality into the product itself, eliminating dependency on inspections.

4. End the practice of awarding business on the basis of price tag. Consolidate suppliers to achieve efficiency, build relationships based on trust, and decrease costs.

5. Improve constantly and forever the system of production and service to improve quality and productivity, and thus constantly decrease costs.

6. Institute training on the job.

7. Institute leadership. Overseeing of management and management itself is meant to provide support, helping jobs to be performed better.

8. Drive out fear. Foster confidence in workers who can then perform effectively.

9. Break down barriers between departments. Create unity among departments through a common platform for clear communication, encouraging a culture of teamwork in problem-solving.

10. Eliminate slogans, exhortations, and targets for the work force asking for zero defects and new levels of productivity. These facilitate adversity and lead to poor productivity and quality.

11a. Eliminate work standards (quotas) on the factory floor. Replace these demands with effective administration.

11b. Eliminate management by objective. Eliminate performance by numbers or numerical goals. Again, support the meeting of objectives with effective administration.

12a. Remove barriers that rob the hourly workers of their right to pride of workmanship. Supervisors are obligated to work toward creating work environments of quality as well as creating a quality product and service.

12b. Remove barriers that rob people in management and in engineering of their right to pride of workmanship.

13. Institute a vigorous program of education and self-improvement.

14. Put everyone in the company to work to accomplish the transformation. All employees must be committed to the effort of continuously improving. (Deming, 1986, pp. 23–24)

Management's seven deadly diseases. Deming delineated seven items that hinder the success of an organization. Deming (1985) called them management's seven deadly diseases. They are as follows:

1. Failure to continuously work toward creating a product or service that has a market, maintaining the survival of the business, and providing jobs.

2. Focus on short-term profits, caused usually by financial stressors (e.g., dividend owners and a failure to focus on constancy).

3. Evaluate personnel via performance or merit ratings or appraisals. For members of management, these can be detrimental on the relationships with those being reviewed.

4. Change management frequently to meet objectives.

5. Use numerical objectives.

6. Spend excessively on medical costs.

7. Spend excessively on warranty. (Deming, 1985, p. 7)

System of profound knowledge. Deming sought to reform the western approach of organizational management. He called his theory "the system of profound knowledge," and it consisted of four parts: appreciation for a system, knowledge about variation, theory of knowledge, and psychology (Petersen, 1999). Taking business as a system, it is essential to understand how a system functions and its variations; moreover, businesses are systems that require people but also seek to satisfy people. As a result, psychology is a necessity. Deming was also convinced that management is reliant upon being able to make predictions and having extensive knowledge. With these ideas combined, studying systems in the absence of one of the aforementioned components would be incomplete (Roehm & Castellano, 1997). The system of profound knowledge constructed a theory that is applicable to the field. Deming's system survived its earlier counterpart, TQM, because of its practical nature (Petersen, 1999). Deming (1994) described profound knowledge and how it is related to the 14 points for management.

The route to transformation is what I call *Profound Knowledge*. The system of profound knowledge is composed of four parts, all related to each other: appreciation for a system, knowledge about variation, theory of knowledge, psychology; my 14 points for

management follow naturally as application of the system of profound knowledge, for

transformation from the present style of management to one of optimization. (Deming,

1994, pp. 15–16)

Joseph M. Juran

In addition to Deming, Juran is also acknowledged as one of the "fathers of quality"

(Arcaro, 1995). Starting out on his quest for quality, he wondered if it could be achieved and

was convinced that organizational failure started with management. He also believed that it was

up to management to be knowledgeable of how to reach goals in quality and that quality should

be the highest priority (Plenert, 2012). Below are a few of Juran's works and ideas that have

played contributing roles to the development of quality and how to achieve it:

- The Pareto principle, or the 80–20 rule. This claims that 80% of problems come from

  20% of causes, and that efforts in management must focus on the 20%.

- The Juran trilogy, which outlines the three parts of managing for quality according to

  his philosophy are planning, control, and improvement.

- Juran's *Quality Control Handbook*.

- Countless works in the form of papers and speeches. (Edmund, 2008, pp. 24–25)

The Juran trilogy. The purpose of the Juran trilogy was to connect his three principles

for managing quality and to show how quality can be incorporated into process.

(1) Quality planning: This explains all of the necessities for bringing together all parts of

the planning process and requires the following: (1) establish the project; (2) identify the

customers; (3) discover the customer needs; (4) develop the product; (5) develop the

process; (6) develop the controls and transfer to operations (Juran & Godfrey, 1999, p.

3.3).

Without clearly defined goals for quality, executing a proper plan cannot be feasible for achieving goals of quality (Plenert, 2012).

"(2) Quality control: It is the process of executing managerial operations to create stability and 'maintain the status quo'" (Juran & Godfrey, 1999, p. 4.2). Quality control requires self-control. There has to be a means for individuals to know what their quality objectives are and how accurately they are working towards them.

(3) Quality improvement: Management organizes projects and actively partakes in them. Management members have to guide workers to understand that working toward quality is not a temporary trend, but a continuous major project that is achieved by tackling smaller ones along the way (Plenert, 2012).

Within each step mentioned above is another series of steps. The training programs for Juran's processes are designed to guarantee that learners understand the process, the tools required, and the skills needed to apply everything learned in the field (M. I. Ahmed, 2011).

Juran's 10 steps for Total Quality Management. The following outlines Juran's steps that have to be followed when implementing TQM:

1. Educate on the necessity of and opportunity for improvement.
2. Establish clearly defined objectives for improvement.
3. Establish an organizational body that leads the process to improvement.
4. Ensure that training is provided for all personnel.
5. Approach problem solving using a project approach.
6. Define and document improvements.
7. Recognize excellent performance and encourage it.
8. Communicate results.

9. Document changes.

10. Incorporate a yearly, organization-wide improvement system into the company.

(Mukhopadhyay, 2005)

One of the most significant contributions Juran made to the process of achieving quality was the incorporation of human involvement, the necessity of all members of an organization to strive actively toward quality.

Philip B. Crosby

Crosby was another key contributor to TQM. His experience in entrepreneurship, communications, and corporate cultivated the skills needed to act in TQM development (Petersen, 1999). Crosby's contribution to quality improvement focused on the cultural factors that are present in the workplace. According to Crosby, low-quality institutions present an assortment of symptoms ranging from employee and customer complaints, unclear management (especially one lacking in objectives related to quality), and management that fails to take responsibility for issues related to quality (Plenert, 2012).

According to Petersen (1999), Crosby's philosophy was made clear in his four absolutes of quality management: "(a) The definition of quality is conformance to requirements, (b) the system of quality is prevention, (c) the performance standard is zero defects, and (d) the measurement of quality is the price of nonconformance" (p. 474). Conformance to requirements accurately captured Crosby's interpretation of what quality is. Hence, some form of assessment has to be implemented to evaluate how well requirements are being conformed to; in addition, this system depends upon management that understands what the requirements are (Richardson, 1997).

Crosby's improvement program. Like Deming, Crosby had 14 steps for quality improvement. They are "management commitment, quality improvement team, measurement, cost of quality, quality awareness, corrective action, ZD (zero defects) planning, employee education, ZD day, goal setting, error-cause removal, recognition, quality councils, and do it over again" (Crosby, 2005, pp. 62–64). Crosby's methods produce quality managers as a result of long-term employee participation (Crosby, 2005).

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The Four Absolutes of Quality Management

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Crosby (1984) explained management's responsibility in facilitating an entity that strives for quality in his four absolutes.

1. Quality has to be defined as conformance to requirements, not as goodness. It is management's responsibility to define requirements, provide the knowledge to meet those requirements, and support employees to do their jobs to satisfy those requirements. In simple terms, DIRFT—"Do It Right the First Time." Requirements for quality must be thoroughly understood and accepted.

2. Create quality through error prevention, not inspection. By thoroughly understanding how the product or service is produced, when error presents itself, knowing its causes will be clear.

3. The goal is zero defects, not "that's close enough." This mindset compliments DIRFT. From chief executive officer . . . to line worker, zero defects must be the standard of everyone.

4. Quality is measured by conformance to requirements, not by numerical objectives. (p. 58)

Prevention is fundamental to Crosby's philosophy on achieving quality. After the huge success of his first book in 1979, Crosby proceeded to expound upon his work in over a dozen books (Johnson, 2001). The full development of his theory was captured in the following: (a) "do it right the first time," (b) "zero defects" and "zero defects day," (c) the "four absolutes of quality," (d) the "prevention process," (e) the "quality vaccine," and (f) "the six C's" (Suarez, 1992, p. 4).

Total Quality Management in Higher Education

Quality in education is crucial to stay competitive in the academic business. TQM in higher education more or less retains its components in application as a systematic management approach to quality (Hammersley & Pinnington, 1999). Although TQM was not incorporated into HE until a decade after industry, it has been successfully implemented as an efficient solution to quality and competitive weakness (Coate, 1993a).

History of Implementing Total Quality Management in Higher Education

TQM was first utilized in higher education in 1985 with two colleges in the United States (Decosmo, Parker, & Heverly, 1991). Subsequently, the management approach gained popularity, and by 1990, 78 institutions of higher education were utilizing it (Coate, 1993b). Less than a decade later, Lozier and Teeter (1996) reported that over 300 U.S. HEIs were implementing total quality philosophies into their management and infrastructure. All participating HEIs shared a common quality—limited funding (Owlia & Aspinwall, 1997). TQM's start in HE took the following main paths, according to Williams (1993): (a) through those that have witnessed TQM in action in the business world and also have relations in HE, (b) through departments that teach TQM, such as business and engineering, (c) from outside stresses (e.g., government pushing HEs to admit more students without providing more resources), and

(d) through the development of a university's functions (e.g., research). TQM has been

implemented in various ways. Some HEIs have attempted to focus on a campus-wide

application, on specific parts of campus, or on specific principles of the TQM philosophy (Owlia

& Aspinwall, 1997).

TQM has been implemented in some HEIs in the KSA, but only a small portion of the

institutions have successfully incorporated the philosophy's principles into action. According to

the Royal Commission Yanbu Colleges and Institutes' (RCYCI) mission and vision, RCYCI

decided to prioritize quality and put quality management system into practice. Achieving quality

was incorporated into strategic plans and development of administration and has become a

continuous goal to work toward (Royal Commission for Jubail and Yanbu, n.d.).

Total Quality Management in Higher Education Institutions

Utilizing TQM has gained recognition for its ability to be effective in education (Michael,

Sower, & Motwani, 1997). TQM's principles have the capacity to hone HEIs' capacity to satisfy

all of their customers: students, parents, stakeholders, and the labor market (Ali & Shastri, 2010).

Originally, TQM was made to satisfy the needs of industry and manufacturing, making it hardly

applicable to academia; however, as observed by practitioners and researchers (M. H. Ahmed &

Siddiek, 2012; Michael et al., 1997; Zabadi, 2013), HEIs have modified TQM for their own

benefit and service improvement. As explained by Olimat (2004), the full implementation of

TQM can encompass all aspects of academic service to achieve internal and external objectives.

TQM in HEIs assists in producing excellence in service and satisfying expectations. By

establishing standards of quality and self-checking the process of achieving it, HEIs can

efficiently stabilize quality within their organizations and be competitive (Zabadi, 2013). Harris

(1994) stated,

There are three generic approaches to TQM in higher education; first, there is a customer

focus where idea of service to students is fostered through staff training and development,

which promotes students' choice and autonomy. The second approach has a staff focus

and is concerned with value and enhances responsibility for action by defined working

groups. The third approach focuses on service agreements stance and seeks to ensure

conformity to specification at certain key measurable points of the educational processes

(p. 33).

Therefore, TQM in educational systems may be considered as an administrative process for

continuous development of the administrative and educational operations, based on a set of

values and principles, collective effort (i.e., teamwork, investing in employees' skills to maintain

continuous development, and improvement of entire elements of educational process), namely

the inputs and outputs to meet beneficiaries' expectations and requirements.

The Total Quality Management Basic Principles and Practices in Higher Education

"Attention to the following TQM principles is the main guarantee for successful

implementation of TQM" (Ho & Wearn, 1995, p. 27). According to many authors and

researchers (Arumugam, Ooi, & Fong, 2008; Jaeger & Adair, 2016; Sallis, 2002; Unal, 2001),

the success of TQM relies on soft principles such as leadership and total commitment. This

section breaks down the principles that are related to management in academia. A significant

portion of this analysis is provided by Deming's 14 points, which are equally applicable to the

quality improvement in the HE setting (Hughey, 2000; Mukhopadhyay, 2005).

1. Create constancy of purpose; colleges and universities must develop their own

    mission and establish plans for quality. Each individual playing a role in executing

these plans must be aware of the value of his or her work and the opportunity to contribute to quality whenever possible.

2. Adopt the new philosophy "quality is a continuous journey." A quality journey is one that is sustainable yet brings the institution to strive for growth. Institutions of HE rely more on students than the other way around, so customer satisfaction has to be taken into account wherever possible, ensuring satisfaction while at the institution, but also after when graduates are expected to perform in the field.

3. Go beyond mass inspection to achieve quality. Instead, HEIs must be sensitive to what aids and hinders their ability to provide quality.

4. Develop long-term relationships. HEIs must develop relationships with the K-12 institutions that provide customers. Established channels between the two parties increase the likelihood of customers being equipped with the skill set needed to be eligible and successful at an HEI.

5. Refine processes of service production and costs continuously. Revision committees and five-year reviews can monitor this process, but HE professionals must be open to their customers and their needs. All of these aspects have to be accounted for when considering all objectives and plans.

6. Implement on the job training. For TQM to work smoothly in academia, faculty and staff need to be well trained with hands-on experience. Although this process can be exhausting, it can be simplified via seminars and training sessions, giving each professional time and practice to understand everyone's part in the organization.

7. Employ and improve leadership skills. An administration that is in sync with the HEI's culture should utilize teamwork to problem-solve.

8. Drive out fear. Create a communication platform accessible by all employees.

9. Create unity of departments via an inclusive stream of information.

10. Eliminate slogans. Slogans might procure some short-term progress; however, without organizational cohesiveness and communication with management, these signs of progress will fade.

11. Eliminate management by objectives (MBO). In the beginning, these types of goals might have a role to play in order to monitor expenditures, but product quality determines the survival of the business.

12. Abolish annual ratings and professional work plan agreements (PWPA). Evaluate by comparing inputs and outputs, examining where quality can be improved, and using management by policy deployment.

13. Adopt self-improvement in education. Equip faculty and staff to be better able to target customers' needs.

14. Involve everyone in the transformation. All constituents of an organization must be active participants (Hughey, 2000, pp.41-44; Mukhopadhyay, 2005, pp. 40-41).

More recently, Mukhopadhyay (2016) gathered the following 15 points that have facilitated the success of TQM in HEIs in India:

1. Nurture a vibrant familial ambience in the institution.

2. Ensure proactive participation of all the partners in the institution.

3. Create mechanisms for expression of mutual concerns among the partners in the institutions.

4. Create awareness that an on–campus experience is a holistic living experience.

5. Develop collective future vision and long-term and short-term perspective plans.

6. Develop indicators of quality and benchmarks for each major and minor activity in the institutions.

7. Define quality parameters and insist on quality in every sphere and activity.

8. Review and redefine goals and targets for continuous improvement.

9. Develop data and information systems for each activity and function.

10. Introduce cost analysis and develop cost consciousness.

11. Create mechanisms for interdepartmental and inter-subject group dialogue planning by breaking barriers.

12. Generate a staff development blueprint for each staff member and execute it with care.

13. Mentor leadership.

14. Innovate and encourage innovation; document and discuss outcomes.

15. Celebrate organization successes and failures. (pp. 45–55)

The quality management principles of the ISO 9001 can be implemented by any product or service-driven organization: (a) customer focus, (b) leadership, (c) engagement of people, (d) process approach, (e) improvement, (f) evidence-based decision-making, and (g) relationship management (ASQ, 2015).

Overall, there are several approaches to explain the same concept. Literature indicated that an understanding of a multitude of principles and practices was necessary to implement TQM in HE.

The Elements and Components of Total Quality Management in Higher Education

The application of TQM to an HE setting affects the structure of all components in their entirety. Unal (2001) noted that TQM impacted the institutions' physical structures, policies,

curriculum, personnel, development, and planning. In American HEIs, TQM first appeared in the Air Force Academy in curriculum development and improvement (Winn & Green, 1998). Oregon State University (OSU) was one of the first research HEIs in the United States to apply TQM in the 1990s (Coate, 1993b). The University of Tennessee (UT) followed shortly after, incorporating TQM methods into its Master of Business Administration (MBA) program. UT's Dean of the College of Business Administration wanted to create a team with the objective of revamping the master's of business administration program (J. U. Ahmed, 2008). Harvard University likewise incorporated TQM to improve the workings of its library. The formed team molded a new culture and statement of purpose as well as modified faculty and staff roles to facilitate lasting changes (Clack, 1993).

Texas Southern University (TSU) incorporated TQM under the name of the TIGER SPIRIT 2000 Program, which created four management training courses to refine management in charge of the TSU employee experience (J. U. Ahmed, 2008). Abu Amer (2008) indicated that

> TQM in HEIs encompasses all processes and contributors to quality: university administration, faculty members, students, teaching programs and methods, class materials and content, university spending, academic performance assessment, facilities and equipment, regulations, follow up for graduates, internal assessment, and external assessment (pp. 52–53).

TQM in higher education has demonstrated its capacity to produce quality output. When taking improvements of an HEI into consideration, the aforementioned components should be incorporated to yield a stable environment that can efficiently move towards a system that constantly works to strengthen quality. TQM's goal is to improve continuously all components of HEIs: human, incorporeal, and physical.

"Customer" in Higher Education

"The question of 'customer' for higher education poses a very sticky problem. No college or university seems willing or able to settle on a specific definition of customer" (Michael et al., 1997, p. 107). From the perspective of services provided (i.e. guidance to pupils and their guardians, lectures, and assessments), stakeholders are the customers and can be categorized into three levels: primary, secondary, and tertiary. Primary customers are those directly receiving the service, and in the case of an HEI, the students. Secondary customers (i.e. parents, government, sponsoring employers, and scholarship providers) are those who have a role in providing primary customers with the fiscal means to be entitled to the service. Tertiary customers are those that benefit from the primary customers after graduation, i.e. future employers and society (Sallis, 2002). Ali and Shastri (2010) grouped customers into two groups (i.e. internal and external customers) and are more inclusive of those participating in the exchange of outputs and inputs. Internal customers include faculty and staff while external customers include students, taxpayers, and society.

Abbas (2010) held that the labor market benefits most from HE. Assuming the graduates become financially independent and contribute to the local economy, parents and community also benefit. Beneficiaries of the higher education process should play a role in the institutions' programs and teaching methods. HEIs are hesitant to label students as the customer of their service, knowing that the phrase "the customer is always right" is in their minds (Abbas, 2010). Harvard University clarified that "the customer is defined as anyone to whom we provide information or service" (Hubbard, 1994, p. 21). OSU defined customers as their reason for existing and also divided them into two groups (Coate, 1993a). Missouri University defined the customer as the following: "In classrooms, students and teachers are the vendors who procure the

output (knowledge). This product is evaluated by independent future customers" (Abbas, 2010, p. 69). Michael et al. (1997) stated that the customer encompassed the students, future employers or educators, and society, as all of these institutions consume the result of HE service in some form. As demonstrated, the customer is not such a simple concept in HE and is interpreted to be inclusive of students, those who provide students with the fiscal means to afford education, and everyone who benefits from a quality graduate after graduation.

The Importance of Total Quality Management Practices in Higher Education

TQM methods facilitate efficiency and quality output, and in business, it has the capacity to increase profit and value for stakeholders (Kanji, 2002). Participants in education administration advocate that the principles of TQM, if properly implemented, can create paths to improved quality in education (Mehrotra, 2013). Enhanced quality increases consumer appeal, and in the process of constantly working toward increased quality, an HEI can protect its competitiveness (Aldaweesh et al., 2013). As a management strategy, TQM

> aims to enhance customer satisfaction and organizational performance through providing high-quality products and services through the participation and collaboration of all stakeholders, teamwork, customer-driven quality, and continuously improving the performance of inputs and processes by applying quality management techniques and tools. (Mosadeghrad, 2014b, p. 160)

In academia, TQM guides HEIs in order to improve the learning process comprehensively, which impacts learners, parents, educators, administration, stakeholders, and society (Zabadi, 2013). In order to put TQM into action, HEIs must take administration, total participation, and continued improvement into account. By synchronizing all of these

components, the quality of the learning process and graduates can be improved and HEIs can stabilize their competitiveness in the market (Alzhrani et al., 2016).

Benefits of Total Quality Management in Higher Education Institutions

Since the beginning of the 21st century, transportation and communication have supplemented economies with globalization, leading businesses without TQM unable to compete globally. This parallel can be found within education (In'airat & Kassem, 2014). Adopting TQM demands communication and cooperation on all fronts in order to succeed. As explained by Clack (1993), TQM can help HEIs better react to demanded outputs, facilitate a problem-solving environment and cooperative culture, and provide a methodical approach to self-regulation and foresight.

Abbas (2010) outlined the advantages of successfully executed TQM in HEIs:

1. To develop an administrative system in the university, identifying roles and responsibilities.

2. To upgrade the level of educational services provided to students that would be reflected on their personalities.

3. To promote collective work among cadre in the university.

4. To increase educational competency of cadre in the university and to promote the performance of academics and administrators.

5. To create a supporting work environment which increases continuous improvement.

6. To promote the competitiveness, programs, and research of the university.

7. To set up an effective financial and administrative system.

8. To ensure quality of an educated individual, ethically and culturally.

9. To associate the needs of the beneficiaries with educational operations. (p. 66)

Similarly, Atartouri and Agadir (2006) presented key notes that justified TQM's presence in HEIs. Those key notes are:

1. Establishing a thorough process of quality management in HEIs, facilitating the refining and strengthening of curricula.

2. Guiding HEIs to build themselves so that they can meet labor market demands.

3. Establishing a common administrative body that drives quality of education in HEIs.

4. Discarding all components of the HEI that are ineffective and establishing standards of performance.

5. Using marketing methods that strengthen the HEI's competitiveness.

6. Transporting or transferring authority and responsibility amongst all levels of employees.

7. Encouraging a culture of teamwork that fosters inter-learning, providing additional opportunity for strengthening of skill sets.

8. Having a common platform of communication that is effective on and off campus.

9. Modifying employee culture.

10. Focusing on the total quality in universities, offering higher quality services to students (Atartouri & Agadir, 2006, pp.131–132).

In'airat and Kassem (2014) emphasized the pros of TQM in educational institutions were encouraging improved service and working continuously to satisfy expectations of quality. TQM in HE has played a major role in enabling organizations to reach their goals and satisfy multiple facets of customer satisfaction. The system works by developing quality from the inside out and promoting self-regulation, resulting in a better learning experience.

Stages of Implementation of Total Quality Management in Higher Education Institutions

Several case studies have examined what conditions optimize TQM's effectiveness (Richardson, 1997). TQM affects every aspect of an organization, and implementing it is a huge undertaking; hence, it must be carried out strategically and carefully (Lakhe & Mohanty, 1994). Applying TQM to an HEI is not a uniform process per each institution; each HEI has to deduce which aspects of TQM are most suitable for its objectives. How TQM is executed is unique to each organization (Michael et al., 1997).

The six TQM methods currently being used are:

1. The TQM element approach. Prevalent in the early 1980s, this approach utilizes quality improvement programs (e.g. quality circles and quality functional development), instead of a comprehensive application of the system.

2. The guru approach. This uses the works of Deming, Juran, or Crosby to assess what the institution lacks and then applies their theories to make modifications.

3. The Japanese model approach. Organizations using this use the Japanese "Deming prize winners" as a model to design their approach.

4. The industrial company model approach. Organizations visit a U.S. TQM using company, map out its strengths, and formulate a plan to develop those strengths.

5. The Hoshin planning approach. It emphasizes proper planning, application, and monthly inspections.

6. The Baldrige Award criteria approach. Institutions use eligibility requirements for the Malcolm Baldrige National Quality Award to isolate weaknesses and areas of improvement (Coate, 1993a, p. 46).

Some universities had notable success with merging two or more of the above strategies in designing their own TQM models. OSU developed its own eight-step model, combining the Hoshin planning model and the Baldrige Award criteria (Michael et al., 1997). First, the customer is defined in order to identify needs and be able to work toward meeting them. Second, the organization and its purpose is delineated in a mission statement that includes the organization it serves and the purpose of that organization's existence. The third step is to make employees aware that their opinions have the power to make changes and will be acknowledged. This, combined with adequate training and a wise use of rules/regulations, creates an environment where workers are not afraid to share and are confident in their abilities, allowing management to drive out fear and give TQM a chance to succeed. The fourth step is to develop pilot teams. Pilot teams must represent everyone from management to employees and should focus on administration. The fifth step is to provide thorough training. Gaps in training result in discouraged workers who are not confident in their positions, leaving them unequipped to carry out TQM to its full potential. Beyond understanding individual responsibilities, employees also need to develop their ability to cooperate on a team prior to taking on the processes of TQM. The sixth step is to develop measurement criteria. Concrete, specific goals and the quantitative benchmarks to achieve them must be in place. These could be in the form of a statistic, such as an assessment of the decrease in turnaround time for returning phone calls. The seventh step is to recognize and reward success; contributions and acknowledgments in the workplace have to be acknowledged as they happen. This can be in the form of a newsletter, a thank-you note, an announcement in a meeting, or even a party to give recognition and show appreciation. The eighth and final step is to improve continuously. TQM is a non-stop journey toward raising the

standard of quality. The continuity of TQM relies on regular checks in place to monitor goal progress and to make any modifications if needed (Michael et al., 1997).

As explained by Abbas (2010), HEIs use five stages to execute TQM. First is the approval stage. Senior officials are trained in the process, expectations, and principles of TQM. The planning stage follows as stage two. In this phase, everything needed to implement the system is arranged. The evaluation stage is third. It consists of assessing progress made and asking the right questions about how to utilize the system better. Fourth is the execution stage, where teams are trained in how to utilize TQM successfully. The fifth and final stage is expertise, where the application of TQM is further refined for optimizing. Richardson (1997) examined five aspects that must be carefully treated for successfully applying TQM: "(1) preparation, (2) planning, (3) assessment, (4) implementation, and (5) networking" (p. 137).

Key Challenges and Obstacles Facing the Implementation of Total Quality Management in Higher Education Institutions

"Applying TQM in education is a continuous search for quality at personal, group, institutional, and societal levels" (Mukhopadhyay, 2005, p. 43). Due to their established culture, HEIs do not mix well with TQM. The diction used to describe TQM, such as *product* and *customer*, lead HEIs to believe ideas so fundamental to business do not belong in academic institutions' organizational priorities (Zabadi, 2013). HE may struggle to implement TQM due to centralization in decision making despite that TQM relies basically on participation, insufficient financing for implementation of TQM, dependency on conventional approaches and criteria in implementation, and the prevailing organizational culture in universities observe and reward individual achievements rather than collective ones (Abbas, 2010). Pratasavitskaya and Stensaker (2010) reported that TQM fails in HE due to an inability to adopt a new culture, lack

of teamwork experience, and unwillingness to invest time and resources into training and application.

To that, Amaral, Rosa, and Sarrico (2012) attributed TQM's failure in HE to an initial lack of a thorough communication system and complexity of assessing results. In addition, HEIs have multiple objectives, internal competition, and bureaucracy networks, further inhibiting the benefits of TQM. Massy (2003) explained,

> The greatest resistance to quality process improvement comes from professors who think it's just another business-oriented fad. The language of some TQM advocates contributes to this view, customer, scientific method and removal of all forms of waste is sure to raise the hackles of academies. (p. 165)

Matthews (1993) explained that challenges in implementing TQM in HE are typical when there is an unclear definition on the role of quality in the institution and when senior administration does not have a significant amount of control over academic personnel.

Mosadeghrad (2014b) addressed the causes of TQM failure into the following: "Ineffective or inappropriate TQM model, ineffective or inappropriate method for TQM implementation; and inappropriate environment for TQM implementation" (pp. 162–163).

1. Ineffective or inappropriate TQM model: A model that does well for one organization may fail when applied to another. Research shows that TQM is more effective when supplemented with aspects of other fields, such as psychology or sociology (Mosadeghrad, 2014b).

2. Ineffective or inappropriate method for TQM implementation: How the model is executed is just as important as the model itself (Hansson & Klefsjo, 2003). Improper implementation has three main causes: overuse of, underuse of, and misuse of

resources. Overuse happens when managers utilize resources that their workers have not been taught how to employ. Underuse is a result of only partially executing a TQM model. Misuse is a consequence of applying methods that do not harmonize with an institution's needs.

3. Inappropriate environment for TQM implementation: The members and environment of an organization both have to support TQM for it to be effective. Challenges to applying TQM were categorized into five different types: strategic challenges, structural challenges, human resources challenges, contextual challenges, and procedural challenges (Mosadeghrad, 2014b). Mosadeghrad (2014b) explained that understanding these challenges is also crucial, as they can influence failure of TQM approaches. Coate (1993a) noted six challenges of OSU's use of TQM: "scepticism, time, language, middle management, university governance, and dysfunctional units." (pp. 314–317)

Coate (1993b) also identified common outlooks that can be challenges to TQM: "looking for the big fix, institutional arrogance, suspicion, and unwillingness to change" (p. 318). Hill (2008) analyzed and found 21 challenges to TQM implementation, resulting in poor planning, poor training, and poor leadership. Lakhe and Mohanty (1994) pointed out issues particular to developing nations executing TQM:

- Lack of understanding of TQM;
- Employees doubt management's intention;
- Management fails to maintain long-term commitment;
- Employees misunderstand TQM as a bandwagon;
- Evaluation of TQM's ability to yield results is difficult;

- Unwillingness to adopt a new system;

- Lack of dedication from management;

- Lack of education and training resources;

- Dustomer needs and satisfaction is difficult to measure; and

- Weak communication internally.

Bani Ahmed (2012) explained that HEIs generally, and Arab ones especially, are dealing with a set of obstacles to quality. These can be found in weaknesses of incentive, training, time, knowledge, funding, leadership, and commitment. In this study I addressed the challenges of applying TQM in HEIs as dependent variables into four groups of challenges as follows:

Strategic Challenges

Poor and ineffective leadership. Brigham (1993) noted that weak leadership is a common error in applying TQM. Strong leadership has three aspects: "the communication of a clear statement of mission, successful implementation of quality processes, utilizing an empowerment approach and the use of timely data, information and knowledge of best practices" (O'Mahony & Garavan, 2012, p. 186).

Poor and ineffective planning. Planning is essential for organizational success. Moving forward with development in any capacity relies on it. Weaknesses in planning hinder the success of TQM to deliver quality in an educational product (Suleman & Gul, 2015).

Lack of strong commitment from all higher education leaders. Total investment and support from senior management is essential to promote organizational quality (O'Mahony & Garavan, 2012). Management has to encourage the entire institution to strive continuously for quality and to push for resources that enable the organization to carry out quality objectives; however, the organization has to be prepared to educate themselves constantly throughout the

process (Neave, 1987). Vora (2002) argued, "The successful implementation of quality management in HE is difficult without the involvement, commitment and sponsorship of senior HE leaders" (p. 1154).

Unjustified total quality management program. Leaders of an organization have to establish and justify the necessity of TQM to employees. If TQM is perceived as imposing, workers will not be interested or have trust in its ability to yield positive results (Beer, 2003; Mosadeghrad, 2014b). This contributes to the importance of justifying TQM, as leaders have the responsibility of understanding what changes have to be made and then of explaining those changes (O'Mahony & Garavan, 2012).

Lack of long-term view. TQM is a long-term strategy. Applying TQM is a complex, long-term, never-ending process. Implementing TQM's basic processes and implementing it into culture and structure can take years (Beer, 2003).

Organizational challenges

Lack of a continuous improvement culture. Organizational culture is critical in the acceptance of quality management because it facilitates an accepting mindset toward quality among employees (O'Mahony & Garavan, 2012). TQM requires constant refining and depends on an organization's sincere commitment to quality service and product. The mindset required to implement TQM is a cultural part of quality that has to be embraced by all participants (Talib & Rahman, 2015).

Lack of an information management system. Information is necessary to utilize and allocate resources efficiently, identify consumer needs, monitor progress, and track weaknesses (Mosadeghrad, 2014b). Lacking an effective information system obstructs the success of

strengthening quality (Mosadeghrad, 2013). Information management system is one of the main components of quality programming (O'Mahony & Garavan, 2012).

Lack of funding and resources. Funding and resources enable TQM application in education. Inadequacies in these areas lead to weaknesses in management and administration, ability to plan, students' performance, infrastructural facilities, and the learning process (Ater, 2013; Suleman & Gul, 2015).

Lack of evaluation and self-assessment system. Self-assessment is the procedure of reflection that is a foundational part of implementing quality management (O'Mahony & Garavan, 2012). Monitoring the application of TQM is essential to know what is effective and what is not. The process has to be continuously modified to evaluate the extent of its effectiveness and areas of weakness (Mosadeghrad, 2014b).

Lack of team orientation. The cohesion needed to implement TQM is rooted in teamwork and the ability to problem solve (Talib, Rahman, & Qureshi, 2011). Effective teams have higher morale and are more productive than individuals (Mosadeghrad, 2014a). Westcott (2006) explained that shortcomings in teamwork are some of the issues that occur when implementing TQM.

Human Resources Challenges

Inadequate human resource development. By definition, human resource development is the strengthening of an employee's knowledge, skill, and experience for doing a job well through training (Mosadeghrad, 2014a). After adopting TQM, one of the first stages of application in an HEI is training senior management followed by academic staff (Owlia & Aspinwall, 1997). TQM requires total cooperation of all members of an organization and constant training to encourage quality product (Al-Amri, 2012).

Poor internal communication. Weaknesses in communication hinder TQM's success. This gap in cooperation is a huge obstacle in executing TQM; its success is dependent upon system-wide coordination (Talib & Rahman, 2015). Lakhe and Mohanty (1994) noted that this issue was especially prominent in developing nations trying to adopt TQM. According to Lakhe and Mohanty (1994), "Poor internal communication is one key obstacle that is encountered in implementing TQM specifically in the developing nations" (p. 27).

Lack of stakeholder involvement and commitment. Stakeholder involvement (i.e. employees, students, and graduates) is a key contributor of TQM application in an HEI (O'Mahony & Garavan, 2012). In order for TQM to flourish, participation of all constituents is needed to reach the ultimate goal, enhanced quality in HE product (Alzhrani et al., 2016).

Employee resistance to change. In the beginning, TQM's presence may cause some resistance from employees, presenting challenges to the system's success. A large part of this resistance comes from not fully understanding TQM, its expectations, and the benefits it offers. It is management's responsibility to present TQM not as an additional set of demands, but as an ongoing process of what is already being done for the benefit of everyone. TQM has to be presented as a mindset, not an overbearing sense of added responsibility (Lakhe & Mohanty, 1994).

Inadequate knowledge about total quality management. TQM research indicated that all employees must be aware of how TQM functions and how to implement the system for the betterment of their organization. The success of TQM in HEIs requires full commitment, training, and competency of all of an organization's members (Altahayneh, 2014). However, executing a quality improvement program is not a rapid process. Such programming can take years to implement completely (O'Mahony & Garavan, 2012).

Lack of employee empowerment. Academic professionals often are not included in executing TQM and may play a minor role in its application. This lack of participation and sense of power or contribution to the system at any level takes a toll on TQM success (Aspinwall & AlaKhalifa, 2000). Mosadeghrad (2014b) confirmed that "high-quality empowered employees are critical to producing high-quality products" (p. 178).

Procedural Challenges

Lack of customer focus. TQM offers an organized approach for focusing institutional resources to attract and retain customers (Zabadi, 2013). Sewell (1997) explained that when working toward quality without completely grasping what that goal entails, major gaps in results are probable. Working on quality development necessitates continuous monitoring and honing of users' understanding of the process.

Bureaucracy and increased work load. TQM is not meant to be a burden in the workplace or be a stressor for workers. TQM procedures should be laced into an employee's preexisting duties as seamlessly as possible. If this addition becomes a source of pressure, TQM is likely to be perceived as hindering worker performance (Mosadeghrad, 2014a). "In HE, most of the employees are predominantly professionals who may be more devoted to teaching than to TQM. Further, it is a common belief that TQM adds unnecessary layers of bureaucracy" (Venkatraman, 2007, p. 98).

Lack of proper process management. Treating and implementing TQM as a never-ending process is crucial for its success. Its progress has to be regularly monitored in order to gauge areas that need to be improved, which could lie in procedure development, customer needs, and refining activity that is helpful for the execution of TQM (Mosadeghrad, 2014b).

O'Mahony and Garavan (2012) indicated that the management "processes presents particular challenges in the HEI context" (p. 189).

Lack of coordination between departments. Talib and Rahman (2015) explained that weakness in or lack of coordination between departments is a major communication obstacle in TQM. "Employee relations and coordination between departments influence the performance of the organizational system and consequently determine the nature and extent of TQM implementation" (Talib et al., 2011, p. 568). This corroborates with Mosadeghrad's (2014a) findings that effective coordination and communication between departments is important for the success of a TQM initiative.

Summary

This chapter reviewed relevant literature on topics including a brief history on HE in KSA (i.e., objectives of HE, HE stages, types of HE, growth and distribution of HEIs, challenges in Saudi HEIs, and quality in Saudi HEIs). Furthermore, the literature review covered quality in education, TQM, pioneers of TQM, and TQM in HE. The central focus of the literature review was in regard to key challenges and obstacles facing the implementation of TQM in HEIs. The methodology used is presented in Chapter 3.

CHAPTER 3

METHODOLOGY

The main purpose of this quantitative study was to identify the challenges to successful

TQM implementation in Saudi HEIs according to perspectives of faculty members. In this study,

categories of TQM implementation challenges (strategic challenges, organizational challenges,

human resources challenges, and procedural challenges) were the dependent variables, and the

independent variables within this study were years of experience, gender, and job status.

Information on dependent and independent variables were collected by using a questionnaire.

The data defined the impact of the independent variables on the strategic, organizational, human

resources, and procedural challenges of TQM implementation in Saudi HEIs. This chapter

thoroughly describes this study and discusses the methods and procedures used to test the

hypotheses. The primary components of this chapter are (a) research questions, (b) null

hypotheses, (c) rationale for research design, (d) issues of trustworthiness, (e) data sources, (f)

population and sample, (g) data collection, (h) method of analysis, and (i) summary.

Research Questions

This study sought to answer the research questions below:

1. What are the current challenges of successful TQM implementation in Saudi HEIs?

2. Based on the participants' years of experience, are there significant differences on the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM?

3. Based on the participants' gender, are there significant differences on the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM?

4. Based on the participants' job status, are there significant differences on the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM?

Research Question Analysis and Null Hypotheses

Research Question 1 was addressed through descriptive statistics.

Research Question 2: H_01. Based on the participants' years of experience, there is not a significant difference on the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM.

Research Question 3: H_02. Based on the participants' gender, there is not a significant difference on the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM.

Research Question 4: H_03. Based on the participants' job status, there is not a significant difference on the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM.

Rationale for Research Design

This study used quantitative methodology to determine the challenges to successful TQM implementation in Saudi HEIs based on the perspectives of faculty members. According to Ary,

Jacobs, and Sorensen (2010), "Quantitative research uses objective measurement to gather numeric data that are used to answer questions or test predetermined hypotheses" (p. 22). This study used an electronic survey on an online survey platform called Qualtrics; in addition, the survey was administered to the faculty members of Yanbu Industrial College and Yanbu University College in Yanbu Al Sinaiyah City, KSA. Creswell (2003) concluded, "A survey design provides a quantitative or numeric description of trends, attitudes or opinions of a population by studying a sample of that population" (p. 153). The four groups of challenges to successful TQM implementation were included as the dependent variables; the independent variables were years of experience, gender, and job status.

Issues of Trustworthiness

Instrumentation

A two-sectioned survey was sent to collect the data needed to test the predetermined hypotheses. Part I inquired about background and demographics and included questions that identified years of experience, gender, and job status of faculty members. Questions 1 through 3 were dedicated to this purpose; in addition, they were used to determine which group each participant belonged to for each of the null hypotheses. Part II included the additional 20 challenges to successful TQM implementation according to several studies (Al Tasheh, 2013; Beer, 2003; Coate, 1993b; Hansson & Klefsjo, 2003; Lakhe & Mohanty, 1994; Massy, 2003; Matthews, 1993; Mosadeghrad, 2014b; O'Mahony & Garavan, 2012; Owlia & Aspinwall, 1997; Pratasavitskaya & Stensaker, 2010; Zabadi, 2013). Questions 1 through 5 were about strategic challenges, Questions 6 through 10 were about organizational challenges, Questions 11 through 16 were about human resources challenges, and Questions 17 through 20 were about procedural challenges. Respondents were asked to rate the challenges to successful TQM implementation in

Yanbu Industrial College and Yanbu University College on a five-point Likert-type scale that ranged from 1 to 5 (*strongly agree* = 5, *agree* = 4, *undecided* = 3, *disagree* = 2, and *strongly disagree* = 1). According to Ary et al. (2010), "The various agree-disagree responses are assigned a numeric value, and the total scale score is found by summing the numeric responses given to each item. This total score assesses the individual's attitude toward the topic" (p. 209). In this study, these two parts worked together to serve as the instrument for this survey. The survey was in English since the curriculum in both participating institutions was taught in English. The survey instrument format (Appendix A) contains citations of those contributing expertise to the dependent variables: strategic, organizational, human resources, and procedural challenges in HEIs implementing TQM. Respondents viewed a survey format (Appendix B) without citations. The survey was posted electronically and was available to the participants on Qualtrics' site.

Validity of Survey

"Validity is the most important consideration in developing and evaluating measuring instruments" (Ary et al., 2010, p. 225). According to Creswell (2013), there are two "traditional forms of validity to consider when examining a survey instrument, content validity, and construct validity" (p. 10). Content validity aims to identify whether a survey instrument's items measure the content they were intended to measure. On the other hand, construct validity aims to address whether a survey instrument's items measure hypothetical constructs or concepts (Creswell, 2003). Therefore, validity was checked in two ways—through review by the dissertation committee chairperson along with dissertation committee members and through Saudi doctoral students. Based on the provided constructive criticism, some adjustments were made to the survey.

Data Sources

The faculty of Yanbu Industrial College and Yanbu University College in Yanbu Al Sinaiyah City, KSA served as the target population of this study. The faculty members of the sample were selected from public HEIs in the KSA. Yanbu Industrial College is available to only male students. On the other hand, Yanbu University College is available to male and female students. Male and female faculty members of Yanbu University College and male faculty members of Yanbu Industrial College were surveyed within this study. The faculty members were given a survey to determine demographic information, including years of experience, gender, and job status. It also determined their perceived levels of challenges to successful TQM implementation in Saudi HEIs.

I provided an approved formal consent from the Institutional Review Board (IRB) to give participants the information necessary to decide whether or not to participate. The purpose of the research and the length of time to finish the survey were provided to participants, whose responses were kept confidential. This process created an element of voluntary participation, and participants could stop at any time, as made clear in the IRB paperwork. Survey results were removed from the survey site and exported into a SPSS file on a password-protected server and maintained for three years after the conclusion of the study. The IRB approved human subjects consent form is available in Appendix C.

Population and Sample

There were 388 faculty members of Yanbu Industrial College (Yanbu Industrial College, 2014). There were 104 male and 88 female faculty members of Yanbu University College in Yanbu Al Sinaiyah City, KSA (Yanbu University College, 2017). In total, this study included a population of 580 faculty members. Therefore, data were collected from all faculty members of

both colleges who agreed to participate in the study. Hence, the sample consisted of individuals

who took the survey on Qualtrics voluntarily.

Data Collection Methods

Obtaining permission from Indiana State University to use the survey created in Qualtrics

was the first step in the data collection process (Appendix C). Then, receiving permission from

the director general of the RCYCI followed (Appendix D). As a result, permission allowed me

to send a questionnaire containing an invitation to participate in the study (Appendix E), along

with a formal consent approval from IRB, a cover letter stating the purpose of the study

(Appendix F), questions for collecting the demographic information, and questions about the 20

challenges to successful TQM implementation by link to RCYCI. In turn, the RCYCI sent an

email with a link to all faculty members of both colleges via Outlook. The faculty members of

the colleges who agreed to participate used the link to access the survey through the Qualtrics

website, where they were invited to respond to 23 questions. Questions 1 through 3 asked about

demographics and background, including questions on years of experience, gender, and job

status of faculty members. Years of experience consisted of three options: five years or less, six

to 10 years, and more than 10 years of experience. Gender choices were male or female. The

job status choices consisted of five position types: professor, associate professor, assistant

professor, lecturer, and teacher. Questions 4 through 8 were about strategic challenges, and

Questions 9 through 13 were about organizational challenges. Meanwhile, Questions 14 through

19 were about human resources challenges, and Questions 20 through 23 were about procedural

challenges. Completion of the survey required approximately five to 10 minutes. Upon

receiving the email containing the link to the survey, the data collection period initiated and

terminated four weeks afterwards. At the conclusion of the data collection period, an email was

sent to the RCYCI thanking them for their participation with a request to forward to participants (Appendix G). Data were then entered into IBM SPSS Version 22 for descriptive and inferential testing.

Method of Analysis

Inferential and descriptive analyses were used in this study. Descriptive statistics, such as frequencies, mean scores, standard deviations, and percentages, were utilized to determine the ranking of challenges to successful TQM implementation in Saudi HEIs. A multivariate analysis of variance (MANOVA) test was applied to see if there were significant differences between faculty members in each of the four groups of challenges to successful TQM implementation in Saudi HEIs based on the independent variable being examined for each null hypothesis. According to Field (2015), "MANOVA is designed to look at several dependent variables simultaneously and so is a multivariate test" (p. 624). In addition, MANOVA "has greater potential power to detect an effect, because unlike ANOVA, it can detect whether groups differ along a combination of variables" (Field, 2015, p. 625).

Descriptive statistics were utilized to answer the following research questions:

1. What are the challenges to successful TQM implementation in Saudi HEIs?

A MANOVA test was applied to answer the following:

1. Based on the participants' years of experience, are there significant differences on the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM?

2. Based on the participants' gender, are there significant differences on the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM?

3. Based on the participants' job status, are there significant differences on the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM?

The study used an alpha level of .05 as the significance level for the study.

If the significance value was less than the alpha level (.05), it meant there is a significant difference on at least one of the dependent variable scores based on the independent variable included within the null hypothesis. If significant, this meant the null was rejected with a minimal chance of making a Type I error. Steps and methods for analyzing data are proposed below:

1. For all research questions, I calculated and reported descriptive statistics from the sample population including the number of participants and the number of non-returned surveys. A table provided percentages describing the participants' results.

2. Descriptive analysis of data for all descriptive questions was conducted using SPSS. The means, standard deviations, frequencies, and percentages were examined.

3. To determine any significant differences among faculty members in each dependent variable based on independent variables, years of experience, gender, and job status, MANOVA analyses were conducted.

After completion of the three steps above, findings were reported based upon the evaluation of data through the utilization of descriptive statistics and MANOVA. The results of the calculated data were utilized to examine the descriptive and inferential data relating to the differences of challenges to successful TQM implementation in Saudi HEIs.

Summary

According to their relevance to research questions for this study, null hypotheses, rationale for research design, issues of trustworthiness, data sources, data collection methods, and methods of analysis were discussed. Inferential and descriptive analyses were used. Survey data were collected electronically via Qualtrics, and analysis occurred in SPSS Version 22.

CHAPTER 4

PRESENTATION AND ANALYSIS OF DATA

The purpose of the study was to identify the challenges to successful TQM

implementation in Saudi HEIs according to perspectives of faculty members. Furthermore, the

study examined the effects of selected demographic variables (years of experience, gender, and

job status) on categories of TQM implementation challenges (strategic challenges, organizational

challenges, human resources challenges, and procedural challenges). Data on the relationship

between these factors can be utilized to isolate and address the challenges of applying TQM in

Saudi HEIs.

This chapter describes, analyzes, and presents the findings of the research. The chapter

begins with descriptive analysis derived from data collected from the quantitative questionnaire.

The data were then analyzed in reference to each null hypothesis discussed in Chapter 1. The

components of this chapter are (a) survey instrument, (b) survey reliability, (c) research

questions, (d) demographic data, (e) descriptive statistics, (f) inferential analyses of the null

hypotheses, and (g) summary.

Survey Instrument

The survey instrument was developed using existing surveys and contained two parts.

Part I inquired about background and demographics, including questions identifying years of

experience, gender, and job status of faculty members. Part II included the additional 20

challenges to successful TQM implementation. Respondents in Yanbu Industrial College and

Yanbu University College were asked to rate the challenges to successful TQM implementation

on a five-point Likert-type scale that ranged from 1 to 5 (*Strongly agree* = 5, *Agree* = 4,

Undecided = 3, *Disagree* = 2, and *Strongly disagree* = 1). A two-section survey was written in

English and was distributed via Qualtrics (Appendix B). It was available for an entire month

from September 18 through October 18, 2017.

Survey Reliability

Reliability of a survey instrument is the degree of consistency with which it measures,

whatever it is measuring (Ary et al., 2010, p. 236). Cronbach's alpha was utilized to ensure

reliability with a required score of .70 or greater (Spector, 1992). In this study, reliability testing

had already been completed, and the survey instrument proved internal consistency. The

reliability statistic for the strategic challenges yielded an alpha score of .91, for the

organizational challenges it yielded .87, for the human resources challenges it yielded .87 and for

the procedural challenges it yielded .80. Due to alpha scores, the survey instrument was

considered to have appropriate internal consistency and strong reliability. As a result, there were

no changes made to the instrument, and no questions were eliminated.

Demographic Data

This study was conducted by surveying individuals who were currently serving as

faculty members of Yanbu Industrial College and Yanbu University College in Yanbu Al

Sinaiyah City, KSA. The population of this study included 580 faculty members. Of the

580 invitation emails that were sent, 250 were successfully delivered. Of those, a total of

194 completed responses were received for a response rate of 33.45%.

The first part of the survey was designed to gather demographic information about the

respondents. The demographic information detailed characteristics of the respondents. The demographic information collected included years of experience, gender, and job status. The first demographic question asked respondents to provide their years of experience as faculty members. Regarding their years of experience, 48 (24.7%) faculty members had five years of experience or less, and 66 (34.0%) faculty members had from six to 10 years of experience. The remaining 80 (41.2 %) faculty members had more than 10 years of experience. In the second demographic question, respondents were asked to identify their gender. Of the 194 total respondents who participated in this study, 144 (74.2%) were male respondents, and 50 (25.8%) were female respondents. In the third demographic question, respondents were asked to provide their job status. Of the 194 faculty members who responded, 11 (5.7%) were professors, 10 (5.2%) were associate professors, 44 (22.7%) were assistant professors, 89 (45.9%) were lecturers, and 40 (20.6%) were teachers.

Descriptive Statistics

This study included one descriptive question: What are the current challenges of successful TQM implementation in Saudi HEIs? Descriptive statistics for the whole sample were measured on a five-point Likert-type scale that ranged from 1 to 5 (5 = *Strongly agree*, 4 = *Agree*, 3 = *Undecided*, 2 = *Disagree*, and 1 = *Strongly disagree*). The 20 statements of challenges to successful TQM implementation in Part II were organized to identify the challenges to successful TQM implementation in Saudi HEIs according to perspectives of faculty members. The challenges were divided into four categories: strategic challenges, organizational challenges, human resources challenges, and procedural challenges.

In strategic challenges, the survey included five statements, which are shown in the top part of Table 5. The faculty members' response scores ($M = 3.72$, $SD = 1.06$) were higher than

the other categories of challenges. The faculty members' responses leaned predominantly

toward agreement with all strategic challenges. The construct "Poor and ineffective leadership"

had the highest level of agreement responses ($n = 135$, 69.5%), and overall disagreement came

from 41 respondents (21.1%). The strategic challenges had the highest percentage and frequency

for the *Strongly Agree* response among all constructs of challenges in the whole sample. "Poor

and ineffective planning" scored the highest for *Strongly Agree* ($n = 77$, 39.7%) among all

challenges in the whole sample. This was followed closely by "Poor and ineffective leadership,"

for which respondents chose *Strongly Agree* (n = 74, 38.1%). All constructs of strategic

challenges had a lack of agreement ($n = 38$, 19.6%). "Lack of long-term view" had the highest

level of disagreement ($n = 46$, 23.7%) and 127 (65.4%) chose overall agreement. "Unjustified

(TQM) program" had the highest percentage and frequency for the *Undecided* response among

all constructs of challenges for whole sample ($n = 34$, 17.5%), 122 (62.9%) chose total

agreement, and 38 (19.6%) chose total disagreement.

The category of organizational challenges consisted of five statements. Descriptive

statistics showed the faculty members' response scores of organizational challenges ($M = 3.57$,

$SD = 0.96$) scored lower on the survey compared to the other categories of challenges. Faculty

members' perspectives were predominantly toward agreement with all statements. The highest

rate of agreement was for the constructs "Lack of a continuous improvement in culture," "Lack

of an evaluation and self-assessment system," and "Lack of team orientation" ($n = 127$, 65.5%).

Respondents chose *Agree* more than *Strongly Agree,* which reached the double in some

situations. The faculty members' perspective on "Lack of an evaluation and self-assessment

system" was *Strongly Agree* ($n = 38$, 19.6%) and *Agree* ($n = 89$, 45.9%). On the other hand, the

highest rate of disagreement was found in the construct "Lack of funding and resources" ($n = 48$,

24.8%); 122 (57.7%) were in total agreement. Table 5 also displays how faculty members responded to organizational challenges.

The third section of Table 5 illustrates the respondents' views on challenges in human resources. Response scores ($M = 3.62$, $SD = 0.81$) were higher on the survey compared to the response scores of organizational challenges. On the other hand, they were lower than the response scores of strategic and procedural challenges. The faculty members were in agreement for all statements. The highest level of agreement was for "Inadequate human resource development" ($n = 136$, 70.1%) and the lowest level of agreement was for "Employees' resistance to change" ($n = 120$, 61.9%). Likewise, for the responses of organizational challenges, *Agree* was chosen more than *Strongly Agree*. In addition, the large number of *Agree* responses was for the construct "Inadequate knowledge and information about TQM" ($n = 110$, 56.7%). *Undecided* was highest for the construct "Employees resistance to change" ($n = 34$, 17.5%). "Inadequate knowledge and information about TQM" had frequencies and percentages of disagreement ($n = 26$, 13.4%), which was the lowest rate of disagreement in whole sample.

In the procedural challenges, descriptive statistics showed that response scores ($M = 3.65$, $SD = 0.77$) were lower than response scores of the strategic challenges and higher than the other categories of challenges. The frequencies and percentages showed similarities in responses among challenges. All constructs of procedural challenges were located in agreement. In addition, the highest level of agreement in the whole sample was for "Bureaucracy and increased workload" ($n = 142$, 73.2%), "Lack of proper process management", and "Lack of coordination between departments" were chosen by 138 (71.1%). *Agree* was the most commonly selected. "Lack of proper process management" and "Bureaucracy and increased workload" ($n = 112$,

57.7%) had the greatest level of *Agree* among all challenges in the whole sample. Faculty

members' perspectives on procedural challenges are presented in the last section of Table 5.

Table 5

Faculty Members' Responses for Whole Sample

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Strategic Challenges					
Poor and ineffective leadership	74 (38.1%)	61 (31.4%)	18 (9.3%)	29 (14.9%)	12 (6.2%)
Poor and ineffective planning	77 (39.7%)	56 (28.9%)	17 (8.8%)	36 (18.6%)	8 (4.1%)
Lack of strong commitment from all higher education leaders	62 (32.0%)	60 (30.9%)	28 (14.4%)	37 (19.1%)	7 (3.6%)
Unjustified (TQM) program	56 (28.9%)	66 (34.0%)	34 (17.5%)	26 (13.4%)	12 (6.2%)
Lack of long-term view	53 (27.3%)	74 (38.1%)	21 (10.8%)	35 (18.0%)	11 (5.7%)
Organizational Challenges					
Lack of a continuous improvement in culture	50 (25.8%)	77 (39.7%)	19 (9.8%)	39 (20.1%)	9 (4.6%)
Lack of an information management system	45 (23.2%)	77 (39.7%)	25 (12.9%)	34 (17.5%)	13 (6.7%)
Lack of funding and resources	40 (20.6%)	72 (37.1%)	34 (17.5%)	36 (18.6%)	12 (6.2%)
Lack of an evaluation and self-assessment system	38 (19.6%)	89 (45.9%)	23 (11.9%)	36 (18.6%)	8 (4.1%)
Lack of team orientation	41 (21.1%)	86 (44.3%)	25 (12.9%)	33 (17.0%)	9 (4.6%)

Table 5 (continued)

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Human Resources Challenges					
Inadequate human resource development	40 (20.6%)	96 (49.5%)	25 (12.9%)	26 (13.4%)	7 (3.6%)
Poor internal communication	41 (21.1%)	93 (47.9%)	18 (09.3%)	33 (17.0%)	9 (4.6%)
Lack of stakeholder involvement and commitment	34 (17.5%)	95 (49.0%)	28 (14.4%)	31 (16.0%)	6 (3.1%)
Employees resistance to change	30 (15.5%)	90 (46.4%)	34 (17.5%)	32 (16.5%)	8 (4.1%)
Inadequate knowledge and information about TQM	25 (12.9%)	110 (56.7%)	33 (17.0%)	18 (9.3%)	8 (4.1%)
Lack of employee empowerment	28 (14.4%)	100 (51.5%)	32 (16.5%)	26 (13.4%)	8 (4.1%)
Procedural Challenges					
Lack of customer focus	23 (11.9%)	105 (54.1%)	28 (14.4%)	32 (16.5%)	6 (3.1%)
Bureaucracy and increased work load	30 (15.5%)	112 (57.7%)	26 (13.4%)	21 (10.8%)	5 (2.6%)
Lack of proper process management	26 (13.4%)	112 (57.7%)	29 (14.9%)	20 (10.3%)	7 (3.6%)
Lack of coordination between departments	28 (14.4%)	110 (56.7%)	26 (13.4%)	24 (12.4%)	6 (3.1%)

In the strategic challenges, descriptive statistics scores showed those respondents with zero to five years of experience ($M = 3.63$, $SD = 0.92$) scored lower than the whole sample ($M = 3.72$, $SD = 1.06$). All constructs of strategic challenges were located in the agreement rating. Furthermore, "Poor and ineffective planning" had the highest level of agreement ($n = 34$, 70.9%), and 10 (20.9%) indicated overall lack of agreement. All constructs except the previous construct had the same frequencies and percentages of agreement ($n = 30$, 62.5%).

Descriptive statistics of organizational challenges showed those with zero to five years of experience ($M = 2.43$, $SD = 0.85$) scored similar to the whole sample average score. Similarly, responses for constructs of strategic challenges and all constructs of organizational challenges had agreement scale. Moreover, the lowest level of agreement of faculty members with zero to five years of experience came from the statement concerning "Lack of a continuous improvement in culture" ($n = 27$, 56.2%); 16 (33.4%) had a total disagreement rating. This was followed closely by "Lack of funding and resources" ($n = 29$, 60.5%). This same construct had the largest number of *Disagree* responses ($n = 14$, 29.2%) for the zero to five years of experience subgroup. The construct with the highest agreement rating focused on "Lack of an evaluation and self-assessment system" ($n = 36$, 75%), compared to the agreement level ($n = 27$, 56.2%). Also, this same construct had the lowest lack of agreement rating ($n = 7$, 14.6%).

In human resources challenges, descriptive statistics showed the group with zero to five years of experience ($M = 2.41$, $SD = 0.79$) scored higher on the survey compared to the whole sample ($M = 2.38$, $SD = 0.81$). The frequencies and percentages demonstrated agreement scale among all constructs for human resources challenges. "Poor internal communication" had the highest agreement rating ($n = 35$, 73%) and 10 (20.9%) had an overall lack of agreement. Nevertheless, the construct "Lack of stakeholder involvement and commitment" had the lowest agreement rating ($n = 28$, 58.4%), and 10 (20.9%) had an overall lack of agreement. Faculty members with zero to five years of experience rated agreement scale regarding inadequate human resource development ($n = 31$, 64.6%) and total lack of agreement ($n = 9$, 18.8%). With the exception of the previous constructs, the remaining constructs had the same frequencies and percentages ($n = 30$, 20.9%).

On procedural challenges, faculty members who were in the zero to five years of experience subgroup ($M = 2.29$, $SD = 0.76$) scored lower on the survey compared to the whole sample ($M = 2.34$, $SD = 0.76$). A similar pattern for chosen agreement scale among all constructs appeared in procedural challenges. Among the zero to five years of experience subgroup, "Bureaucracy and increased workload" had the highest agreement rating ($n = 37$, 77.1%), and overall lack of agreement was 6 (12.5%). Nonetheless, the "Lack of proper process management" construct had the lowest lack of agreement rating ($n = 5$, 10.4%) among the zero to five years of experience subgroup. Both of the previous constructs had the largest number of *Agree* replies ($n = 28$, 58.3%) among the zero to five years of experience subgroup. Furthermore, *Agree* was chosen more than *Strongly Agree* among faculty members who had zero to five years of experience. Results for the four categories of challenges for faculty members with zero to five years of experience are presented in Table 6.

Table 6

Zero to Five Years of Experience Responses

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Strategic Challenges					
Poor and ineffective leadership	10 (20.8%)	20 (41.7%)	7 (14.6%)	9 (18.8%)	2 (4.2%)
Poor and ineffective planning	14 (29.2%)	20 (41.7%)	4 (8.3%)	9 (18.8%)	1 (2.1%)
Lack of strong commitment from all higher education leaders	12 (25.0%)	18 (37.5%)	9 (18.8%)	8 (16.7%)	1 (2.1%)
Unjustified (TQM) program	10 (20.8%)	20 (41.7%)	11 (22.9%)	4 (08.3%)	3 (6.3%)
Lack of long-term view	11 (22.9%)	19 (39.6%)	5 (10.4%)	11 (22.9%)	2 (4.2%)
Organizational Challenges					
Lack of a continuous improvement in culture	11 (22.9%)	16 (33.3%)	5 (10.4%)	14 (29.2%)	2 (4.2%)
Lack of an information management system	11 (22.9%)	19 (39.6%)	7 (14.6%)	9 (18.8%)	2 (4.2%)
Lack of funding and resources	9 (18.8%)	20 (41.7%)	8 (16.7%)	8 (16.7%)	3 (6.3%)
Lack of an evaluation and self-assessment system	10 (20.8%)	26 (54.2%)	5 (10.4%)	6 (12.5%)	1 (2.1%)
Lack of team orientation	8 (16.7%)	22 (45.8%)	7 (14.6%)	10 (20.8%)	1 (2.1%)
Inadequate human resource development	8 (16.7%)	23 (47.9%)	8 (16.7%)	7 (14.6%)	2 (4.2%)
Poor internal communication	9 (18.8%)	26 (54.2%)	3 (06.3%)	8 (16.7%)	2 (4.2%)
Lack of stakeholder involvement and commitment	8 (16.7%)	20 (41.7%)	10 (20.8%)	9 (18.9%)	1 (2.1%)
Employees resistance to change	8 (16.7%)	22 (45.8%)	8 (16.7%)	8 (16.7%)	2 (4.2%)
Inadequate knowledge and information about TQM	7 (14.6%)	23 (47.9%)	12 (25.0%)	5 (10.4%)	1 (2.1%)
Lack of employee empowerment	7 (14.6%)	23 (47.9%)	11 (22.9%)	7 (14.6%)	0 (0.0%)

Table 6 (continued)

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Procedural Challenges					
Lack of customer focus	8	25	4	10	1
	(16.7%)	(52.1%)	(08.3%)	(20.8%)	(2.1%)
Bureaucracy and increased	9	28	5	4	2
work load	(18.8%)	(58.3%)	(10.4%)	(8.3%)	(4.2%)
Lack of proper process	5	28	10	4	1
management	(10.4%)	(58.3%)	(20.8%)	(8.4%)	(2.1%)
Lack of coordination	11	23	8	5	1
between departments	(22.9%)	(47.9%)	(16.7%)	(10.4%)	(2.1%)

Descriptive statistics in strategic challenges showed scores for the subgroup with six to 10 years of experience ($M = 4.12$, $SD = 0.79$) scored higher than the whole sample average score ($M = 3.72$, $SD = 1.06$). The frequencies and percentages in the first part of Table 7 show the largest number of agreement responses for "Poor and ineffective leadership" ($n = 60$, 90.9%). The same construct had the highest percentage and frequency for *Strongly Agree* among all constructs of challenges for faculty members with six to 10 years of experience ($n = 37$, 56.1%). The construct highest in the number of *Undecided* responses was "Unjustified (TQM) program" ($n = 13$, 19.7%); overall agreement was 45 (68.2%) and lack of agreement was eight (12.1%). Most constructs of strategic challenges had one response for *Strongly Disagree,* ($n = 1$, 01.5%), except for the constructs of "Lack of long-term view" ($n = 2$, 3.0%) and "Unjustified (TQM) program" ($n = 3$, 4.5%) for the *Strongly Agree* response, respectively. As a result, all of the strategic challenges constructs had agreement scale.

In organizational challenges, descriptive statistics showed that scores of faculty members who had six to 10 years of experience ($M = 3.87$, $SD = 0.79$) scored higher on the survey compared to the whole sample ($M = 3.57$, $SD = 0.96$). In the part on organizational challenges

in Table 7, the frequencies and percentages leaned predominantly toward agreement with all statements. The highest rate of agreement was the construct "Lack of a continuous improvement in culture" ($n = 56$, 84.8%). On the other hand, the highest rate of disagreement was the construct "Lack of an evaluation and self-assessment system" ($n = 11$, 16.7%). However, the highest number of *Undecided* responses was found in "Lack of funding and resources" ($n = 13$, 19.7%) and "Lack of an information management system" ($n = 10$, 15.2%).

Descriptive statistics in human resources challenges showed the scores for the subgroup with six to 10 years of experience ($M = 3.91$, $SD = 0.61$) scored higher than the whole sample average score ($M = 3.62$, $SD = 0.81$). In Table 7, it was noticeable that all human resources challenges constructs had agreement scale. However, the highest rates of agreement were the constructs of "Inadequate human resource development" ($n = 58$, 87.9%) and "Lack of stakeholder involvement and commitment" ($n = 56$, 84.8%). The highest number of *Agree* responses came from "Lack of employee empowerment" ($n = 45$, 68.2%) and had a total agreement rating ($n = 53$, 80.3%). The highest percentages and frequencies for lack of agreement was found in the construct of "Poor internal communication" ($n = 9$, 13.6%). The choice of *Undecided* was insignificant for all constructs. However, the highest number of *Undecided* responses was found in the "Employees resistance to change" construct ($n = 9$, 13.6%); overall agreement was 51 (77.3%) and the lack of agreement was six (9.1%).

In procedural challenges, descriptive statistics showed scores for the six to 10 years of experience subgroup ($M = 3.80$, $SD = 0.56$) scored higher on the survey compared to the whole sample ($M = 3.65$, $SD = 0.77$). In Table 7, the frequencies and percentages demonstrate that all procedural challenges constructs had high levels of agreement. Specifically, the construct of "Lack of coordination between departments" had high responses for *Agree* ($n = 48$, 72.7%) and a

total lack of agreement rating ($n = 5$, 7.6%). *Agree* was selected far more than any of the other responses. In addition, the highest number of *Agree* responses came from the construct "Lack of coordination between departments" ($n = 48$, 72.7%) and the lowest frequency of *Agree* responses came from the challenges about "Bureaucracy and process management" ($n = 43$, 65.2%). *Strongly Disagree* had very negligible levels for all constructs. The frequency of the *Strongly Disagree* response ranged from zero to two. The highest level of *Undecided* response was 10 (15.2%) on the challenge "Lack of customer focus"; overall agreement was 53 (80.3%), and total disagreement was three (4.5%). Overall, among faculty members with six to 10 years of experience, there was no single *Strongly Disagree* option chosen by more than three (4.5%), which signified a strong agreement tendency among respondents. As a result, all challenges constructs had an agreement scale.

Table 7

Six to 10 Years of Experience Responses

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Strategic Challenges					
Poor and ineffective leadership	37 (56.1%)	23 (34.8%)	2 (3.0%)	3 (4.5%)	1 (1.5%)
Poor and ineffective planning	34 (51.5%)	20 (30.3%)	5 (7.6%)	6 (9.1%)	1 (1.5%)
Lack of strong commitment from all higher education leaders	26 (39.4%)	25 (37.9%)	7 (10.6%)	7 (10.6%)	1 (1.5%)
Unjustified (TQM) program	25 (37.9%)	20 (30.3%)	13 (19.7%)	5 (7.6%)	3 (4.5%)
Lack of long-term view	23 (34.8%)	33 (50.0%)	4 (6.1%)	4 (6.1%)	2 (3.0%)
Organizational Challenges					
Lack of a continuous improvement in culture	23 (34.8%)	33 (50.0%)	3 (4.5%)	5 (7.6%)	2 (3.0%)
Lack of an information management system	19 (28.8%)	28 (42.4%)	10 (15.2%)	6 (9.1%)	3 (4.5%)
Lack of funding and resources	18 (27.3%)	31 (47.0%)	13 (19.7%)	2 (3.0%)	2 (3.0%)
Lack of an evaluation and self-assessment system	16 (24.2%)	31 (47.0%)	8 (12.1%)	10 (15.2%)	1 (1.5%)
Lack of team orientation	17 (25.8%)	31 (47.0%)	8 (12.1%)	7 (10.6%)	3 (4.5%)

Table 7 (continued)

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Human Resources Challenges					
Inadequate human resource development	19 (28.8)%	39 (59.1%)	5 (7.6%)	3 (4.5%)	0 (0.0%)
Poor internal communication	18 (27.3%)	34 (51.5%)	5 (7.6%)	7 (10.6%)	2 (3.0%)
Lack of stakeholder involvement and commitment	16 (24.2%)	40 (60.6%)	6 (9.1%)	2 (3.0%)	2 (3.0%)
Employees resistance to change	11 (16.7%)	40 (60.6%)	9 (13.6%)	4 (6.1%)	2 (3.0%)
Inadequate knowledge and information about TQM	10 (15.2%)	44 (66.7%)	5 (7.6%)	5 (7.6%)	2 (3.0%)
Lack of employee empowerment	8 (12.1%)	45 (68.2%)	6 (9.1%)	4 (6.1%)	3 (4.5%)
Procedural Challenges					
Lack of customer focus	8 (12.1%)	45 (68.2%)	10 (15.2%)	3 (4.5%)	0 (0.0%)
Bureaucracy and increased work load	7 (10.6%)	43 (65.2%)	8 (12.1%)	7 (10.6%)	1 (1.5%)
Lack of proper process management	8 (12.1%)	43 (65.2%)	9 (13.6%)	4 (6.1%)	2 (3.0%)
Lack of coordination between departments	6 (09.1%)	48 (72.7%)	7 (10.6%)	4 (6.1%)	1 (1.5%)

The descriptive statistics in strategic challenges showed the scores for the more than 10 years of experience subgroup ($M = 3.44$, $SD = 1.23$) scored lower than the whole sample average score ($M = 3.72$, $SD = 1.06$). In Table 8, the frequencies and percentages demonstrated agreement among all constructs of strategic challenges for faculty members with 10 or more years of experience. The construct with the highest level of *Strongly Agree* responses was "Poor and ineffective planning" ($n = 29$, 36.3%); overall agreement was 45 (56.3%). The lowest disagreement response in the subgroup was 23 (28.8%) for the construct that addressed "Unjustified (TQM) program." The selection for *Undecided* was highest on the constructs "Lack

of strong commitment from all higher education leaders" and "Lack of long-term view" ($n = 12$, 15%). The previous construct "Lack of strong commitment from all higher education leaders" had the highest number of *Disagree* responses ($n = 22$, 27.5%). The constructs with the lowest agreement rating were "Lack of strong commitment from all higher education leaders" and "Lack of long-term view" ($n = 41$, 51.3%), compared to the highest in agreement for "Unjustified (TQM) program" ($n = 47$, 58.8%).

In organizational challenges, faculty members who were in the more than 10 years of experience subgroup ($M = 3.31$, $SD = 1.07$) scored lower on the survey compared to the whole sample ($M = 3.57$, $SD = 0.96$). The frequencies and percentages in Table 8 show that all constructs reflected agreement except "Lack of funding and resources" ($n = 34$, 42.6%). The construct highest in agreement responses was "Lack of team orientation" ($n = 49$, 61.3%). On the other hand, the construct of "Lack of funding and resources" had highest disagreement responses ($n = 33$, 41.3%). This same construct had the largest number of *Undecided* replies ($n = 13$, 16.3%). "Lack of team orientation" and "Lack of an evaluation and self-assessment system" had the same number of *Undecided* responses ($n = 10$, 12.5%). The *Agree* choice was highest for the construct on "Lack of team orientation" ($n = 33$, 41.3%).

Descriptive statistics in human resources challenges showed that faculty with more than 10 years of experience ($M = 3.40$, $SD = 0.91$) scored lower than the whole sample ($M = 3.62$, $SD = 0.81$). Faculty members responded in all human resources challenges by the agreement scale except one construct: "Employees resistance to change" ($n = 39$, 48.8%). The highest rate of agreement in human resources challenges was 51 (63.8%) for the construct that addressed "Inadequate knowledge and information about *TQM.*" This same construct had the largest number of *Agree* responses in the more than 10 years of experience subgroup ($n = 43$, 53.8%).

Undecided appeared most in the more than 10 years of experience subgroup for the two

constructs of human resources challenges "Employees' resistance to change" ($n = 17$, 21.3%)

and "Inadequate knowledge and information about TQM" ($n = 16$, 20.0%).

　　Descriptive statistics in procedural challenges showed that faculty with more than 10

years of experience ($M = 3.50$, $SD = 0.92$) scored lower on the survey compared to the whole

sample ($M = 3.65$, $SD = 0.77$). The frequencies and percentages in Table 8 show that all

procedural challenges constructs had agreement scale. It also shows the largest number of

agreement responses in the more than 10 years of experience subgroup for the constructs of

"Bureaucracy and increased workload" ($n = 55$, 68.8%) and "Lack of proper process

management" ($n = 54$, 67.6%). Little disagreement was present except for the construct

focusing on "Lack of customer focus" ($n = 24$, 30.1%), and overall agreement was 42 (52.6%).

On the other hand, the construct of "Bureaucracy and increased workload" had the lowest lack of

agreement ($n = 12$, 15.0%). The same construct was dwarfed by the more than 10 years of

experience subgroup ($n = 2$, 02.5%) for *Strongly Disagree*.

Table 8

More than 10 Years of Experience Responses

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Strategic Challenges					
Poor and ineffective leadership	27 (33.8%)	18 (22.5%)	9 (11.3%)	17 (21.3%)	9 (11.3%)
Poor and ineffective planning	29 (36.3%)	16 (20.0%)	8 (10.0%)	21 (26.3%)	6 (7.5%)
Lack of strong commitment from all higher education leaders	24 (30.0%)	17 (21.3%)	12 (15.0%)	22 (27.5%)	5 (6.3%)
Unjustified (TQM) program	21 (26.3%)	26 (32.5%)	10 (12.5%)	17 (21.3%)	6 (7.5%)
Lack of long-term view	19 (23.8%)	22 (27.5%)	12 (15.0%)	20 (25.0%)	7 (8.8%)
Organizational Challenges					
Lack of a continuous improvement in culture	16 (20.0%)	28 (35.0%)	11 (13.8%)	20 (25.0%)	5 (6.3%)
Lack of an information management system	15 (18.8%)	30 (37.5%)	8 (10.0%)	19 (23.8%)	8 (10.0%)
Lack of funding and resources	13 (16.3%)	21 (26.3%)	13 (16.3%)	26 (32.5%)	7 (8.8%)
Lack of an evaluation and self-assessment system	12 (15.0%)	32 (40.0%)	10 (12.5%)	20 (25.0%)	6 (7.5%)
Lack of team orientation	16 (20.0%)	33 (41.3%)	10 (12.5%)	16 (20.0%)	5 (6.3%)
Human Resources Challenges					
Inadequate human resource development	13 (16.3%)	34 (42.5%)	12 (15.0%)	16 (20.0%)	5 (6.3%)
Poor internal communication	14 (17.5%)	33 (41.3%)	10 (12.5%)	18 (22.5%)	5 (6.3%)
Lack of stakeholder involvement and commitment	10 (12.5%)	35 (43.8%)	12 (15.0%)	20 (25.0%)	3 (03.8%)
Employees resistance to change	11 (13.8%)	28 (35.0%)	17 (21.5%)	20 (25.0%)	4 (5.0%)
Inadequate knowledge and information about TQM	8 (10.0%)	43 (53.8%)	16 (20.0%)	8 (10.0%)	5 (6.4%)
Lack of employee empowerment	13 (16.3%)	32 (40%)	15 (18.8%)	15 (18.8%)	5 (6.3%)

Table 8 (continued)

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Procedural Challenges					
Lack of customer focus	7 (08.8%)	35 (43.8%)	14 (17.5%)	19 (23.8%)	5 (6.3%)
Bureaucracy and increased work load	14 (17.5%)	41 (51.3%)	13 (16.3%)	10 (12.5%)	2 (2.5%)
Lack of proper process management	13 (16.3%)	41 (51.3%)	10 (12.5%)	12 (15.0%)	4 (5.0%)
Lack of coordination between departments	11 (13.8%)	39 (48.8%)	11 (13.8%)	15 (18.8%)	4 (5.0%)

Descriptive statistics in strategic challenges showed male faculty members' scores (M = 3.71, SD = 1.03) scored slightly lower than the whole sample (M = 3.72, SD = 1.06). Frequencies and percentages in Table 9 show that all strategic challenges constructs had agreement rating above (n = 91, 63.2%). The strongest response among the male faculty subgroup was "Poor and ineffective planning" with a selection of *Strongly Agree* (n = 57, 39.6%). This was followed closely by the construct "Poor and ineffective leadership," for which male faculty members chose *Strongly Agree* (n = 55, 38.2%). The same construct had the highest rating of agreement in strategic challenges constructs (n = 98, 68.1%) and overall lack of agreement was 31 (21.5%). The construct with the highest disagreement was "Lack of long-term view" (n = 34, 23.7%) and overall agreement was 93 (64.6%). The construct with the largest *Undecided* selection concerned "Unjustified (TQM) program" (n = 25, 17.4%).

In organizational challenges, descriptive statistics showed male faculty members' (M = 3.39, SD = 1.03) scored lower than the whole sample (M = 3.57, SD = 0.96). Frequencies and percentages in Table 9 present the largest number of agreement responses for "Lack of a continuous improvement in culture" (n = 99, 68.8%) and "Lack of team orientation" (n = 95,

65.9%). Male faculty members selected *Agree* far more often than *Strongly Agree, Undecided, Disagree,* and *Strongly Disagree.* The highest rate of disagreement was 35 (24.3%) on the construct addressing lack of funding and resources.

Descriptive statistics in human resources challenges showed male faculty members' scores (*M* = 3.63, *SD* = 0.79) scored slightly higher than the whole sample (*M* = 3.62, *SD* = 0.81). In Table 9, frequencies and percentages display that all human resources challenges constructs had agreement rating above 87 (60.5%). Furthermore, the highest number of agreement responses came from "Inadequate human resource development" and "Inadequate knowledge and information about TQM" (*n* = 100, 69.5%). However, the previous construct reached the lowest rating of disagreement among the male faculty members' subgroup (*n* = 18, 12.5%). It also scored the highest in *Agree* (*n* = 82, 56.9%) for human resources challenges. *Agree* was chosen far more than *Strongly Agree* in male faculty members' responses.

Descriptive statistics in procedural challenges showed men faculty members' scores (*M* = 3.66, *SD* = 0.73) were slightly higher than the whole sample average score (*M* = 3.65, *SD* = 0.77). The frequencies and percentages in Table 9 showed male faculty were in agreement most for the constructs "Bureaucracy and increased workload" and "Lack of proper process management" (*n* = 103, 71.5%). This was followed closely by "Lack of coordination between departments" (*n* = 101, 70.2%). The previous construct and "Lack of proper process management" had the lowest rating of disagreement among the procedural challenges subgroup (*n* = 19, 13.2%). *Agree* was chosen far more than *Strongly Agree* for the procedural challenges constructs. *Agree* had the most responses for the constructs "Lack of proper process management" (*n* = 85, 59.0%) and "Bureaucracy and increased workload" (*n* = 84, 58.3%) among the male faculty members subgroup. Overall, the frequencies and percentages

demonstrated agreement rating among all constructs of strategic challenges for male faculty members' responses. *Disagree* was chosen far more than *Strongly Disagree*. Male faculty members' responses on the challenges are presented in Table 9.

Table 9

Male Faculty Members' Responses

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Strategic Challenges					
Poor and ineffective leadership	55 (38.2%)	43 (29.9%)	15 (10.4%)	22 (15.3%)	9 (6.3%)
Poor and ineffective planning	57 (39.6%)	38 (26.4%)	16 (11.1%)	28 (19.4%)	5 (3.5%)
Lack of strong commitment from all higher education leaders	46 (31.9%)	46 (31.9%)	19 (13.2%)	30 (20.8%)	3 (2.1%)
Unjustified (TQM) program	41 (28.5%)	50 (34.7%)	25 (17.4%)	21 (14.6%)	7 (9.4%)
Lack of long-term view	36 (25.0%)	57 (39.6%)	17 (11.8%)	27 (18.8%)	7 (4.9%)
Organizational Challenges					
Lack of a continuous improvement in culture	36 (25.0%)	63 (43.8%)	14 (9.7%)	25 (17.4%)	6 (4.2%)
Lack of an information management system	43 (23.6%)	58 (40.3%)	19 (13.3%)	25 (17.4%)	8 (5.6%)
Lack of funding and resources	31 (21.5%)	53 (36.8%)	25 (17.4%)	24 (16.7%)	11 (7.6%)
Lack of an evaluation and self-assessment system	30 (20.8%)	62 (43.1%)	20 (13.9%)	26 (18.1%)	6 (4.2%)
Lack of team orientation	28 (19.4%)	67 (46.5%)	21 (14.6%)	21 (14.6%)	7 (4.9%)

Table 9 (continued)

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Human Resources Challenges					
Inadequate human resource development	27 (18.8%)	73 (50.7%)	21 (14.6%)	18 (12.5%)	5 (3.5%)
Poor internal communication	30 (20.8%)	68 (47.2%)	16 (11.1%)	26 (18.1%)	4 (2.8%)
Lack of stakeholder involvement and commitment	26 (18.1%)	69 (47.9%)	20 (13.9%)	24 (16.7%)	5 (3.5%)
Employees resistance to change	26 (18.1%)	61 (42.4%)	29 (20.1%)	23 (16.0%)	5 (3.5%)
Inadequate knowledge and information about TQM	18 (12.5%)	82 (56.9%)	26 (18.1%)	14 (9.7%)	4 (2.8%)
Lack of employee empowerment	20 (13.9%)	72 (50.0%)	29 (20.1%)	18 (12.5%)	5 (3.5%)
Procedural Challenges					
Lack of customer focus	18 (12.5%)	76 (52.8%)	23 (16.0%)	24 (16.7%)	3 (2.1%)
Bureaucracy and increased work load	19 (13.2%)	84 (58.3%)	21 (14.6%)	16 (11.1%)	4 (2.8%)
Lack of proper process management	18 (12.5%)	85 (59.0%)	22 (15.3%)	14 (9.7%)	5 (3.5%)
Lack of coordination between departments	22 (15.3%)	79 (54.9%)	24 (16.7%)	16 (11.1%)	3 (2.1%)

Descriptive statistics in strategic challenges showed women faculty members' scores (M = 3.74, SD = 1.18) scored slightly higher than the whole sample (M = 3.72, SD = 1.06). "Poor and ineffective planning" had the strongest response with a selection of *Strongly Agree* (n = 20, 40.0%). The overall positive agreement to the construct was 38 (76.0%) compared with one (2.0%) *Undecided,* and (n = 11, 22.0%) for against agreement. This was followed closely by "Poor and ineffective leadership" (n = 37, 74.0%) and overall lack of agreement was (n = 10,

20.0%). "Lack of strong commitment from all higher education leaders" had a low agreement

rating (*n* = 30, 60.0%). Female faculty members selected *Strongly Agree* more than *Agree*.

In organizational challenges, descriptive statistics showed female faculty members'

scores (*M* = 3.50, *SD* = 1.01) were lower on the survey compared to the whole sample (*M* =

3.57, *SD* = 0.96). Frequencies and percentages showed that the constructs "Lack of a continuous

improvement in culture" and "Lack of funding and resources" had the lowest agreement rating (*n*

= 28, 56.0%) among the female faculty members subgroup. The highest number of *Agree*

responses was found in "Lack of an evaluation and self-assessment system" (*n* = 27, 54.0%).

Agree was selected more frequently than *Strongly Agree* for all of the organizational challenges

constructs except "Lack of a continuous improvement in culture," which had similar responses

for *Agree* and *Strongly Agree* (*n* = 14, 28.0%).

Descriptive statistics in human resources challenges showed female faculty members'

scores (*M* = 3.61, *SD* = 0.91) were slightly lower on the survey compared to the whole sample

(*M* = 3.62, *SD* = 0.81). "Inadequate human resource development," "Poor internal

communication," and "Lack of employee empowerment" constructs were similar to the

responses from female faculty members (*n* = 36, 72.0%). These same faculty members chose

Agree far more than *Strongly Agree*. In addition, "Employees' resistance to change" had the

largest number of *Agree* selections (*n* = 29, 58.0%). This was followed closely by "Inadequate

knowledge and information about TQM" (*n* = 28, 56.0%).

Descriptive statistics in procedural challenges showed women faculty members scores (M

= 3.65, SD = 0.89) were similar to the whole sample average score. Frequencies and percentages

showed the largest number of agreement responses in the female faculty members' subgroup for

"Bureaucracy and increased workload" (*n* = 39, 78.0%) and the lowest disagreement rating (*n* =

6, 12.0%). The construct with the largest *Agree* selection concerned "Lack of coordination between departments" (*n* = 31, 62.0%).

Overall, the frequencies and percentages indicated that all challenges constructs had agreement rating above (*n* = 28, 56%). However, the lack of agreement rated between 12.0% and 34.0%. Female faculty members' responses on the categories of challenges are shown in Table 10.

Table 10

Female Faculty Members' Responses

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Strategic Challenges					
Poor and ineffective leadership	19 (38.0%)	18 (36.0%)	3 (6.0%)	7 (14.0%)	3 (6.0%)
Poor and ineffective planning	20 (40.0%)	18 (36.0%)	1 (.2.0%)	8 (16.0%)	3 (6.0%)
Lack of strong commitment from all higher education leaders	16 (32.0%)	14 (28.0%)	9 (18.0%)	7 (14.0%)	4 (8.0%)
Unjustified (TQM) program	15 (30.0%)	16 (32.0%)	9 (18.0%)	5 (10.0%)	5 (10.0%)
Lack of long-term view	17 (34.0%)	17 (34.0%)	4 (8.0%)	8 (16.0%)	4 (8.0%)
Organizational Challenges					
Lack of a continuous improvement in culture	14 (28.0%)	14 (28.0%)	5 (10.0%)	14 (28.0%)	3 (6.0%)
Lack of an information management system	11 (22.0%)	19 (38.0%)	6 (12.0%)	9 (18.0%)	5 (10.0%)
Lack of funding and resources	9 (18.0%)	19 (38.0%)	9 (18.0%)	12 (24.0%)	1 (2.0%)
Lack of an evaluation and self-assessment system	8 (16.0%)	27 (54.0%)	3 (06.0%)	10 (20.0%)	2 (4.0%)
Lack of team orientation	13 (26.0%)	19 (38.0%)	4 (8.0%)	12 (24.0%)	2 (4.0%)

Table 10 (continued)

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Human Resources Challenges					
Inadequate human resource development	13 (26.0%)	23 (46.0%)	4 (8.0%)	8 (16.0%)	2 (4.0%)
Poor internal communication	11 (22.0%)	25 (50.0%)	2 (4.0%)	7 (14.0%)	5 (10.0%)
Lack of stakeholder involvement and commitment	8 (16.0%)	28 (52.0%)	8 (16.0%)	7 (14.0%)	1 (2.2%)
Employees resistance to change	4 (08.0%)	28 (58.0%)	5 (10.0%)	9 (18.0%)	3 (6.0%)
Inadequate knowledge and information about TQM	7 (14.0%)	28 (56.0%)	7 (14.0%)	4 (8.0%)	4 (8.0%)
Lack of employee empowerment	8 (16.0%)	28 (56.0%)	3 (6.0%)	8 (16.0%)	3 (6.0%)
Procedural Challenges					
Lack of customer focus	5 (10.0%)	29 (58.0%)	5 (10.0%)	8 (16.0%)	3 (6.0%)
Bureaucracy and increased work load	11 (22.0%)	28 (56.0%)	5 (10.0%)	5 (10.0%)	1 (2.0%)
Lack of proper process management	8 (16.0%)	27 (54.0%)	7 (14.0%)	6 (12.0%)	2 (4.0%)
Lack of coordination between departments	6 (12.0%)	31 (62.0%)	2 (4.0%)	8 (16.0%)	3 (6.0%)

Descriptive statistics in strategic challenges showed professors' scores ($M = 4.44$, $SD = 0.43$) were higher than the whole sample average score ($M = 3.72$, $SD = 1.06$). *Strongly Agree* was chosen most for "Poor and ineffective leadership" ($n = 8$, 72.0%). This same construct had absolute agreement ($n = 11$, 100%). This was followed by "Lack of strong commitment from all higher education leaders" ($n = 10$, 90.9%). The other constructs of strategic challenges had the same agreement rating ($n = 9$, 81.0%). Moreover, disagreement of all statements of strategic challenges had a rating of zero (0.0%).

In organizational challenges, descriptive statistics showed that professors' scores (M = 4.15, SD = 0.43) were higher than the whole sample average score (M = 3.57, SD = 0.96). Frequencies and percentages showed that "Lack of an evaluation and self-assessment system" had absolute agreement (n = 11, 100%). In addition, the construct "Lack of team orientation" had an agreement rating of 10 (91.0%), and other constructs had an agreement rating of nine (81.8%).

In human resources challenges, frequencies and percentages showed professors' responses (M = 3.95, SD = 0.47) scored higher on the survey compared to the whole sample (M = 3.62, SD = 0.81). The statement concerning lack of stakeholder involvement and commitment had the largest rate of agreement (n = 10, 91.0%). On the other hand, "Employees' resistance to change" and "Inadequate knowledge and information about TQM" had a lower rate of agreement (n = 8, 72.7%); overall lack of agreement was one (9.1%). *Strongly Agree* and *Agree* had the same frequencies and percentages for "Lack of stakeholder involvement and commitment" (n = 5, 45.5%) and "Employees resistance to change" (n = 4, 36.4%). For other constructs, the professors chose *Agree* far more than *Strongly Agree*.

Descriptive statistics in procedural challenges showed that professors' responses (M = 3.84, SD = 0.39) scored higher than the whole sample (M = 3.65, SD = 0.77). Frequencies and percentages showed that all constructs of procedural challenges had the majority agreement (n = 9, 100%). Moreover, disagreement of all statements of procedural challenges had a rating of zero (0.0%) except for the constructs of bureaucracy and increased workload, which had a rating of two (18.2%). *Undecided* had two (18.2%) for "Lack of proper process management" and "Lack of coordination between departments," and overall agreement was nine (81.8%).

It was noticeable that all challenges constructs had the highest agreement rating (above 72.8%), which was far more than most of the previously discussed subgroups. In addition, results from *Disagree* and *Strongly Disagree* were negligible for all constructs among the professors' subgroup. The professors' responses on the challenges are presented in Table 11.

Table 11

Professors' Responses

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Strategic Challenges					
Poor and ineffective leadership	8 (72.7%)	3 (27.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Poor and ineffective planning	7 (63.6%)	2 (18.2%)	2 (18.2%)	0 (0.0%)	0 (0.0%)
Lack of strong commitment from all higher education leaders	7 (63.6%)	3 (27.3%)	1 (9.1%)	0 (0.0%)	0 (0.0%)
Unjustified (TQM) program	6 (54.5%)	3 (27.3%)	2 (18.2%)	0 (0.0%)	0 (0.0%)
Lack of long-term view	3 (27.3%)	6 (54.5%)	2 (18.2%)	0 (0.0%)	0 (0.0%)
Organizational Challenges					
Lack of a continuous improvement in culture	5 (45.5%)	4 (36.4%)	1 (9.1%)	1 (9.1%)	0 (0.0%)
Lack of an information management system	3 (27.3%)	6 (54.5%)	1 (9.1%)	1 (9.1%)	0 (0.0%)
Lack of funding and resources	2 (18.2%)	7 (63.6%)	1 (9.1%)	1 (9.1%)	0 (0.0%)
Lack of an evaluation and self-assessment system	3 (27.3%)	8 (27.7%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Lack of team orientation	5 (45.5%)	5 (45.5%)	1 (9.1%)	0 (0.0%)	0 (0.0%)
Human Resources Challenges					
Inadequate human resource development	3 (27.3%)	6 (54.5%)	2 (18.2%)	0 (0.0%)	0 (0.0%)
Poor internal communication	2 (18.2%)	7 (63.6%)	1 (9.1%)	0 (0.0%)	1 (9.1%)
Lack of stakeholder involvement and commitment	5 (45.5%)	5 (45.5%)	0 (0.0%)	1 (9.1%)	0 (0.0%)
Employees resistance to change	4 (36.4%)	4 (36.4%)	2 (18.2%)	1 (9.1%)	0 (0.0%)
Inadequate knowledge and information about TQM	1 (9.1%)	7 (63.6%)	2 (18.2%)	1 (9.1%)	0 (0.0%)
Lack of employee empowerment	2 (18.2%)	7 (63.6%)	1 (9.1%0	1 (9.1%)	0 (0.0%)

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Table 11 (continued)

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Procedural Challenges					
Lack of customer focus	0 (0.0%)	9 (81.8%)	2 (18.2%)	0 (0.0%)	0 (0.0%)
Bureaucracy and increased work load	0 (0.0%)	9 (81.8%)	0 (0.0%)	2 (18.2%)	0 (0.0%)
Lack of proper process management	1 (9.1%)	8 (72.7%)	2 (18.2%)	0 (0.0%)	0 (0.0%)
Lack of coordination between departments	2 (18.2%)	7 (63.6%)	2 (18.2%)	0 (0.0%)	0 (0.0%)

In strategic challenges, descriptive statistics showed associate professors' responses scores ($M = 3.86$, $SD = 1.29$) were slightly higher than the whole sample average score ($M = 3.72$, $SD = 1.06$). Frequencies and percentages showed that the construct "Poor and ineffective leadership" had the highest agreement rating among the associate professors' subgroup ($n = 8$, 80.0%); total disagreement was two (20%). On the other hand, the construct "Unjustified (TQM) program" reached the highest lack of agreement rating among the associate professors' subgroup ($n = 3$, 30.0%) and overall agreement was six (60.0%). For "Lack of long-term view," the associate professors responded with *Agree* more than *Strongly Agree*. However, for other constructs, the same responders selected *Strongly Agree* far more than *Agree*.

In organizational challenges, descriptive statistics showed that associate professors' response scores ($M = 3.70$, $SD = 1.21$) were higher than the whole sample average score ($M = 3.57$, $SD = 0.96$). Frequencies and percentages showed that "Lack of a continuous improvement in culture" reached the highest agreement rating among the associate professors' subgroup ($n = 8$, 80.0%) and overall lack of agreement was one (10.0%). For "Lack of an information management system" and "Lack of funding and resources," associate professors' responses were

in the same rating of agreement (*n* = 7, 70.0%). A similar pattern of agreement rating was seen for the constructs "Lack of an evaluation and self-assessment system" and "Lack of team orientation" (*n* = 6, 60.0%) and overall lack of agreement was (*n* = 2, 20.0%).

Descriptive statistics in human resources challenges showed associate professors' responses scores (*M* = 3.57, *SD* = 1.22) scored slightly lower on the survey compared to the whole sample average score (*M* = 3.62, *SD* = 0.81). "Inadequate human resource development," "Poor internal communication," "Lack of stakeholder involvement and commitment," and "Employees resistance to change" had an agreement rating (*n* = 7, 70.0%). The constructs that addressed employee empowerment had a minimum level of agreement (*n* = 6, 60.0%) among the associate professors' subgroup. For all of the constructs, the associate professors selected *Agree* far more than *Strongly Agree*.

Descriptive statistics in procedural challenges showed that associate professors' response scores (*M* = 3.50, *SD* = 0.98) were slightly less than the whole sample average score (*M* = 3.65, *SD* = 0.77). Frequencies and percentages showed that the constructs of procedural challenges had an identical level of agreement (*n* = 7, 70.0%) for "Lack of proper process management" and "Lack of coordination between departments." The construct "Bureaucracy and increased workload" scored the highest agreement rating among the associate professors' subgroup (*n* = 8, 80.0%) and overall lack of agreement was two (20.0%). The associate professors responded with *Agree* more than *Strongly Agree*.

Among the associate professors' subgroup, the challenges constructs had a level of agreement between 60.0% and 80.0%. This subgroup had a lack of agreement rating between 10.0% and 20.0%. The associate professors' responses on the challenges are presented in Table 12.

Table 12

Associate Professors' Responses

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Strategic Challenges					
Poor and ineffective leadership	5 (50.0%)	3 (30.0%)	1 (10.0%0	0 (0.0%)	1 (10.0%)
Poor and ineffective planning	5 (50.0%)	2 (20.0%)	1(10.0%)	1 (10.0%)	1 (10.0%)
Lack of strong commitment from all higher education leaders	5 (50.0%)	2 (20.0%)	1(10.0%)	1 (10.0%)	1 (10.0%)
Unjustified (TQM) program	50 (50.0%)	1 (10.0%)	1(10.0%)	1 (10.0%)	2 (20.0%)
Lack of long-term view	3 (30.0%)	4 (40.0%)	2(20.0%)	0 (0.0%)	1 (10.0%)
Organizational Challenges					
Lack of a continuous improvement in culture	40 (40.0%)	4 (40.0%)	1 (10.0%)	0 (0.0%)	1 (10.0%)
Lack of an information management system	3 (30.0%)	4 (40.0%)	0 (0.0%)	1 (10.0%)	2 (20.0%)
Lack of funding and resources	3 (30.0%0	4 (40.0%)	2 (20.0%)	0 (0.0%)	1 (10.0%)
Lack of an evaluation and self-assessment system	3 (30.0%0	3 (30.0%)	2 (20.0%)	1 (10.0%)	1 (10.0%)
Lack of team orientation	3 (30.0%)	3 (30.0%)	2 (20.0%)	1 (10.0%)	1 (10.0%)

Table 12 (continued)

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Human Resources Challenges					
Inadequate human resource development	3 (30.0%)	4 (40.0%)	1 (10.0%)	1 (10.0%)	1 (10.0%)
Poor internal communication	3 (30.0%)	4 (40.0%)	2 (20.0%)	0 (0.0%)	1 (10.0%)
Lack of stakeholder involvement and commitment	2 (20.0%)	5 (50.0%)	0 (0.0%)	1 (10.0%)	2 (20.0%)
Employees resistance to change	2 (20.0%)	5 (50.0%)	2 (20.0%)	0 (0.0%)	1 (10.0%)
Inadequate knowledge and information about TQM	2 (20.0%)	5 (50.0%)	0 (0.0%)	1 (10.0%)	2 (20.0%)
Lack of employee empowerment	2 (20.0%)	4 (40.0%)	2 (20.0%)	0 (0.0%)	2 (20.0%)
Procedural Challenges					
Lack of customer focus	1 (10.0%)	7 (70.0%)	0 (0.0%)	1 (10.0%)	1 (10.0%)
Bureaucracy and increased work load	1 (10.0%)	5 (50.0%)	2 (20.0%)	1 (10.0%)	1 (10.0%)
Lack of proper process management	1 (10.0%)	6 (60.0%)	1 (10.0%)	1 (10.0%)	1 (10.0%)
Lack of coordination between departments	0 (00.0%)	7 (70.0%)	2 (20.0%)	0 (0.0%)	1 (10.0%)

In strategic challenges, descriptive statistics showed assistant professors' response scores ($M = 4.04$, $SD = 0.91$) were higher on the survey compared to the whole sample ($M = 3.72$, $SD = 1.06$). All constructs of strategic challenges were located in agreement. Furthermore, "Poor and ineffective planning" had the highest level of agreement responses ($n = 36$, 81.8%) and an overall lack of agreement ($n = 6$, 13.7%). The previous construct was greatest in *Strongly Agree* responses ($n = 26$, 59.1%) among the assistant professors' subgroup. The statement about "Lack of strong commitment from all higher education leaders" was followed closely by the previous

level of agreement responses (*n* = 35, 79.5%) and overall disagreement (*n* = 6, 13.7%). However, "Lack of long-term view" had the lowest level of agreement responses (*n* = 30, 68.2%) and total lack of agreement responses (*n* = 7, 15.9%).

Descriptive statistics of organizational challenges showed assistant professors' responses (*M* = 3.86, *SD* = 0.85) scored higher than the whole sample average score (*M* = 3.57, *SD* = 0.96). The constructs of organizational challenges resulted in levels of agreement between 28 (63.6%) and 37 (84.0%). Within the constructs of organizational challenges, the responses to *Agree* were higher than *Strongly Agree*. The highest *Agree* response came from "Lack of a continuous improvement in culture" (*n* = 24, 54.5%) and had a total agreement rating of 37 (84.0%). This was followed closely by the construct "Lack of an evaluation and self-assessment system." The assistant professors chose *Agree* (*n* = 22, 50.0%) for an overall agreement of 34 (77.3%). The construct "Lack of funding and resources" had the highest level of disagreement (*n* = 8, 18.1%) in the assistant professors' subgroup.

In human resources challenges, descriptive statistics indicated that assistant professors' responses (*M* = 3.92, *SD* = 0.69) scored higher on the survey compared to the whole sample (*M* = 3.62, *SD* = 0.81). Frequencies and percentages showed that the highest number of agreement responses came from "Inadequate knowledge and information about TQM" (*n* = 37, 84.1%) and a total of lack agreement (*n* = 1, 02.3%). Likewise, for organizational challenges, *Agree* was chosen more than *Strongly Agree*. In addition, the largest number of *Agree* responses was for "Inadequate knowledge and information about TQM" (*n* = 29, 65.9%). *Strongly Disagree* was not chosen throughout the human resources challenges.

On procedural challenges, the assistant professors' subgroup responses (*M* = 3.90, *SD* = 0.65) scored higher than the whole sample (*M* = 3.65, *SD* = 0.77). The highest rate of agreement

was the construct of *"*Lack of proper process management and Lack of coordination between departments" (*n* = 37, 84.1%). This was followed by "Bureaucracy and increased workload" (*n* = 34, 77.3%). *Agree* was chosen more than the *Strongly Agree* for the constructs of procedural challenges. "Lack of proper process management" had the highest level of *Agree* responses (*n* = 29, 65.9%).

Overall, the assistant professors' responses leaned predominantly toward *Agreement* with all statements. The highest level of agreement was 37 (84.1%), compared to the lowest level of agreement (*n* = 28, 63.6%) in the assistant professors' subgroup. The same assistant professors chose *Agree* more than *Strongly Agree* except in the strategic challenges. Table 13 displays the assistant professors' replies on the challenges.

Table 13

Assistant Professors' Responses

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Strategic Challenges					
Poor and ineffective leadership	20 (45.5%)	14 (31.8%)	7 (15.9%)	2 (4.5%)	1 (2.3%)
Poor and ineffective planning	26 (59.1%)	10 (22.7%)	2 (4.5%)	5 (11.4%)	1 (2.3%)
Lack of strong commitment from all higher education leaders	17 (38.6%)	18 (40.9%)	3 (6.8%)	5 (11.4%)	1 (2.3%)
Unjustified (TQM) program	14 (31.8%)	19 (43.2%)	5 (11.4%)	5 (11.4%)	1 (2.3%)
Lack of long-term view	15 (34.1%)	15 (34.1%)	7 (15.9%)	7 (15.9%)	0 (0.0%)
Organizational Challenges					
Lack of a continuous improvement in culture	13 (29.5%)	24 (54.5%)	0 (0.0%)	6 (13.6%)	1 (2.3%)
Lack of an information management system	15 (34.1%)	18 (40.9%)	6 (13.6%)	4 (9.1%)	1 (2.3%)
Lack of funding and resources	11 (25.0%)	17 (38.6%)	8 (18.2%)	6 (13.6%)	2 (4.5%)
Lack of an evaluation and self-assessment system	12 (27.3%)	22 (50.0%)	3 (6.8%)	6 (13.6%)	1 (2.3%)
Lack of team orientation	12 (27.3%)	20 (45.5%)	6 (13.6%)	6 (13.6%)	0 (0.0%)
Human Resources Challenges					
Inadequate human resource development	10 (22.7%)	24 (54.5%)	6 (13.6%)	4 (9.1%)	0 (0.0%)
Poor internal communication	11 (25.0%)	25 (56.8%)	4 (9.1%)	4 (9.1%)	0 (0.0%)
Lack of stakeholder involvement and commitment	9 (20.5%)	26 (59.1%)	3 (6.8%)	6 (13.6%)	0 (0.0%)
Employees resistance to change	11 (25.0%)	24 (54.5%)	5 (11.4%)	4 (9.1%)	0 (0.0%)
Inadequate knowledge and information about TQM	8 (18.2%)	29 (65.9%)	6 (13.6%)	1 (2.3%)	0 (0.0%)
Lack of employee empowerment	7 (15.9%)	27 (61.4%)	5 (11.4%)	5 (11.4%)	0 (0.0%)

Table 13 (continued)

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Procedural Challenges					
Lack of customer focus	7 (15.9%)	25 (56.8%)	7 (15.9%)	4 (9.1%)	1 (2.3%)
Bureaucracy and increased work load	9 (20.5%)	25 (56.8%)	6 (13.6%)	4 (9.1%)	0 (0.0%)
Lack of proper process management	9 (20.5%)	28 (63.6%)	5 (11.4%)	2 (4.5%)	0 (0.0%)
Lack of coordination between departments	8 (18.2%)	29 (65.9%)	4 (9.1%)	3 (6.8%)	0 (0.0%)

Descriptive statistics in strategic challenges show lecturers' scores ($M = 3.53$, $SD = 1.12$) were less than the whole sample average score ($M = 3.72$, $SD = 1.06$). Frequencies and percentages showed that all strategic challenges constructs had an agreement rating above 49 (55.0%). "Poor and ineffective leadership" and "Poor and ineffective planning" rated the highest in level of agreement ($n = 55$, 61.8%), and overall lack of agreement was 27 (30.3%). "Lack of strong commitment from all higher education leaders" had a lower rate of agreement ($n = 49$, 55.0%) and the total disagreement rating was 25 (28.1%). The construct "Long-term view" had the largest number of *Agree* selections ($n = 32$, 36.0%) and the overall agreement was 53 (59.6%).

In organizational challenges, descriptive statistics show lecturers' scores ($M = 3.34$, $SD = 0.98$) were lower on the survey compared to the whole sample ($M = 3.57$, $SD = 0.96$). Frequencies and percentages show that all constructs had agreement rating except the construct "Lack of funding and resources" ($n = 42$, 47.2%). The lecturers selected *Agree* more than *Strongly Agree*. *Agree* was chosen most for self-assessment system and team orientation ($n = 37$,

41.6%). However, the construct addressing funding and resources was in the greatest level of disagreement among the lecturers' subgroup ($n = 31$, 33.7%).

In human resources challenges, descriptive statistics show that lecturers' response scores ($M = 3.44$, $SD = 0.80$) were less than the whole sample average score ($M = 3.62$, $SD = 0.81$). The frequencies and percentages demonstrated agreement rating among the human resources challenges. The lecturers chose *Agree* more than *Strongly Agree* for the human resources challenges constructs. The construct with the highest *Agree* selection was "Inadequate knowledge and information about TQM" ($n = 51$, 57.3%) and the overall agreement rating was 59 (66.3%) among the lecturers' subgroup. "Employees' resistance to change" had the lowest level of agreement ($n = 45$, 50.6%) and the total lack of agreement was 23 (25.8%). This same construct had the largest number of *Undecided* replies ($n = 21$, 23.6%) throughout the lecturers' subgroup.

On procedural challenges, the lecturers' subgroup response score ($M = 3.54$, $SD = 0.80$) were slightly lower than the whole sample average ($M = 3.65$, $SD = 0.77$). Frequencies and percentages presented that all human resources challenges constructs had agreement rating. In addition, the highest rate of agreement was challenge of *"Bureaucracy and increased workload"* ($n = 63$, 70.8%) and the overall disagreement was 12 (13.4%), which was the lowest lack of agreement throughout the lecturers' subgroup. On the other hand, these same lecturers rated lower in agreement for "Lack of customer focus" ($n = 51$, 57.3%) and the overall disagreement was 23 (25.8%). *Agree* was chosen more than *Strongly Agree* in the procedural challenges constructs.

Overall, the lecturers' responses leaned predominantly toward agreement with all statements except the construct about "Lack of funding and resources" ($n = 42$, 47.2%) in

organizational challenges. The highest level of agreement was for "Bureaucracy and increased workload" ($n = 63$, 70.8%) and had an overall disagreement of 12 (13.4%), compared to the highest level of disagreement ($n = 30$, 33.7%) for "Lack of funding and resources" throughout the lecturers' subgroup. *Agree* was chosen more than *Strongly Agree* for all challenges among the lecturers' subgroup except some strategic challenges. Table 14 presents the lecturers' responses to the challenges.

Table 14

Lecturers' Responses

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Strategic Challenges					
Poor and ineffective leadership	29 (32.6%)	26 (29.3%)	7 (7.9%)	20 (22.5%)	7 (7.9%)
Poor and ineffective planning	29 (32.6%)	26 (29.2%)	7 (7.9%)	23 (25.8%)	4 (4.5%)
Lack of strong commitment from all higher education leaders	22 (24.7%)	27 (30.3%)	15 (16.9%)	20 (22.5%)	5 (5.6%)
Unjustified (TQM) program	22 (24.7%)	31 (34.8%)	18 (20.2%)	13 (14.6%)	5 (5.6%)
Lack of long-term view	21 (23.6%)	32 (36.0%)	8 (9.0%)	23 (25.8%)	5 (5.6%)
Organizational Challenges					
Lack of a continuous improvement in culture	15 (16.9%)	31 (34.8%)	14 (15.7%)	24 (27.5%)	5 (5.6%)
Lack of an information management system	14 (15.7%)	35 (39.3%)	14 (15.7%)	20 (22.5%)	6 (6.7%)
Lack of funding and resources	15 (16.9%)	27 (30.3%)	17 (19.1%)	25 (28.1%)	5 (5.6%)
Lack of an evaluation and self-assessment system	13 (14.6%)	37 (41.6%)	14 (15.7%)	22 (24.7%)	3 (3.4%)
Lack of team orientation	15 (16.9%)	37 (41.6%)	12 (13.5%)	21 (23.6%)	4 (4.5%)
Inadequate human resource development	13 (14.6%)	41 (46.1%)	15 (16.9%)	17 (19.1%)	3 (3.4%)
Poor internal communication	14 (15.7%)	37 (41.6%)	12 (13.5%)	21 (23.6%)	5 (5.6%)
Lack of stakeholder involvement and commitment	9 (10.1%)	41 (46.1%)	19 (21.3%)	19 (21.3%)	1 (1.1%)
Employees resistance to change	8 (09.0%)	37 (41.6%)	21 (23.6%)	18 (20.2%)	5 (5.6%)
Inadequate knowledge and information about TQM	8 (09.0%)	51 (57.3%)	17 (19.1%)	8 (9.0%)	5 (5.6%)
Lack of employee empowerment	11 (12.4%)	42 (47.2%)	19 (21.3%)	13 (14.6%)	4 (4.5%)

Table 14 (continued)

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Procedural Challenges					
Lack of customer focus	9 (10.1%)	42 (47.2%)	15 (16.9%)	21 (23.6%)	2 (2.2%)
Bureaucracy and increased work load	14 (15.7%)	49 (55.1%)	14 (15.7%)	10 (11.2%)	2 (2.2%)
Lack of proper process management	10 (11.2%)	47 (52.8%)	15 (16.9%)	15 (16.9%)	2 (2.2%)
Lack of coordination between departments	9 (10.1%)	48 (53.9%)	15 (16.9%)	13 (14.6%)	4 (4.5%)

Descriptive statistics in strategic challenges show teachers' responses ($M = 3.56$, $SD = 1.01$) scored lower than the whole sample average score ($M = 3.72$, $SD = 1.06$). According to the frequencies and percentages, all constructs of strategic challenges had agreement rating. The highest level of agreement was with the construct "Lack of long-term view" ($n = 28$, 70%). This was followed closely by the construct "Poor and ineffective leadership" ($n = 27$, 67.5%) and the overall disagreement was 10 (25.0%). However, the lowest level of agreement among the teachers' subgroup was with "Strong commitment from all higher education leaders" and "Unjustified (TQM) program" ($n = 21$, 52.5%). These same challenges had the highest rating of disagreement ($n = 11$, 27.5%) and the largest number of *Undecided* ($n = 8$, 20.0%).

On organizational challenges, the teachers' response scores ($M = 3.56$, $SD = 0.95$) were slightly lower than the whole sample average score ($M = 3.57$, $SD = 0.96$). Frequencies and percentages of organizational challenges constructs ranged from 24 (60%) for "Lack of an information management system" to 27 (67.5%) for "Lack of team orientation and Lack of a continuous improvement in culture." The previous challenge scored the highest frequency of

Strongly Agree through the teachers' subgroup (*n* = 13, 32.50%). The constructs addressing "Lack of funding and resources" and "Lack of an evaluation and self-assessment system" had the same average level of agreement (*n* = 26, 65%) and overall disagreement (*n* = 8, 20%), (*n* = 10, 25%), respectively. The highest level of disagreement through the teachers subgroup came from the challenge "Lack of an information management system" (*n* = 12, 30.0%) and the total agreement was 24 (60.0%).

In human resources challenges, the teachers' response scores (*M* = 3.62, *SD* = 0.85) were the same as the response scores of whole sample. The responders rated highest in level of agreement among the teachers' subgroup in "Inadequate human resource development" (*n* = 32, 80%) and total lack of agreement was seven (17.5%). This was followed slightly by "Poor internal communication" (*n* = 31, 77.5%) and overall disagreement (*n* = 9, 22.5%). The same teachers rated high in disagreement with "Employees' resistance to change" (*n* = 11, 27.5%) and overall agreement was 25 (62.5%). The highest *Undecided* response came from "Inadequate knowledge and information about TQM" (*n* = 8, 20.0%) and total agreement was 24 (60.0%); total disagreement was eight (20.0%).

On procedural challenges, the teachers' responses scores (*M* = 3.64, *SD* = 0.81) were slightly lower than the whole sample (*M* = 3.65, *SD* = 0.77). Through the teachers' subgroup, *Agree* scored highest for the challenge "Bureaucracy and increased workload" (*n* = 24, 60.0%). The previous challenge and the construct "Lack of proper process management" had the lowest level of lack agreement among the teachers' subgroup (*n* = 6, 15.0%) and the overall agreement was 30 (75.0%) and 28 (70.0%), respectively.

Overall, among the teachers' subgroup all constructs of challenges were located in the agreement rating. The highest agreement response came from "Inadequate human resource

development" (*n* = 32, 80.0%). *Agree* was chosen more than *Strongly Agree* for all challenges

among the teachers' subgroup. Table 15 displays the teachers' responses on the challenges.

Table 15 shows the teachers' responses on the challenges.

Table 15

Teachers' Responses

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
Strategic Challenges					
Poor and ineffective leadership	12 (30.0%)	15 (37.5%)	3 (7.5%)	7 (17.5%)	3 (7.5%)
Poor and ineffective planning	10 (35.0%)	16 (40.0%)	5 (12.5%)	7 (17.5%)	2 (5.0%)
Lack of strong commitment from all higher education leaders	11 (27.5%)	10 (25.0%)	8 (20.0%)	11 (27.5%)	0 (0.0%)
Unjustified (TQM) program	9 (22.5%)	12 (30.0%)	8 (20.0%)	7 (17.5%)	4 (10.0%)
Lack of long-term view	11 (27.5%)	17 (42.5%)	2 (5.0%)	5 (12.5%)	5 (12.5%)
Organizational Challenges					
Lack of a continuous improvement in culture	13 (32.5%)	14 (35.0%)	3 (7.5%)	8 (20.0%)	2 (5.0%)
Lack of an information management system	10 (25.0%)	14 (35.0%)	4 (10.0%)	8 (20.0%)	4 (10.0%)
Lack of funding and resources	9 (22.5%)	17 (42.5%)	6 (15.0%)	4 (10.0%)	4 (10.0%)
Lack of an evaluation and self-assessment system	7 (17.5%)	19 (47.5%)	4 (10.0%)	7 (17.5%)	3 (7.5%)
Lack of team orientation	6 (15.0%)	21 (52.5%)	4 (10.0%)	5 (12.5%)	4 (10.0%)

Table 15 (continued)

Challenge	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
<u>Human Resources Challenges</u>					
Inadequate human resource development	11 (27.5%)	21 (52.5%)	1 (2.5%)	4 (10.0%)	3 (7.5%)
Poor internal communication	11 (27.5%)	20 (50.0%)	0 (0.0%)	7 (17.5%)	2 (5.0%)
Lack of stakeholder involvement and commitment	9 (22.5%)	18 (45.0%)	6 (15.0%)	4 (10.0%)	3 (7.5%)
Employees resistance to change	5 (12.5%)	20 (50.0%)	4 (10.0%)	9 (22.5%)	2 (5.0%)
Inadequate knowledge and information about TQM	6 (15.0%)	18 (45.0%)	8 (20.0%)	7 (17.5%)	1 (2.5%)
Lack of employee empowerment	6 (15.0%)	20 (50.0%)	5 (12.5%)	7 (17.5%)	2 (5.0%)
<u>Procedural Challenges</u>					
Lack of customer focus	6 (15.0%)	22 (55.0%)	4 (10.0%)	6 (15.0%)	2 (5.0%)
Bureaucracy and increased work load	6 (15.0%)	24 (60.0%)	4 (10.0%)	4 (10.0%)	2 (5.0%)
Lack of proper process management	5 (12.5%)	23 (57.5%)	6 (15.0%)	2 (5.0%)	4 (10.0%)
Lack of coordination between departments	9 (22.5%)	19 (47.5%)	3 (7.5%)	8 (20.0%)	1 (2.5%)

Table 16 displays mean scores that were compared based on years of experience. The mean comparison from the table demonstrated that the strategic challenges had the greatest mean among whole sample for the six to 10 years of experience subgroup ($M = 4.12$, $SD = 0.79$). This was followed closely by the human resources challenges ($M = 3.91$, $SD = 0.61$) and by the organizational challenges ($M = 3.87$, $SD = 0.79$). Overall, the zero to five years of experience subgroup has a greater mean than the more than 10 years of experience subgroup for all

categories of challenges. However, the six to 10 years of experience subgroup scored the highest

mean in all subgroups.

Table 16

Average Scores for Years of Experience

Challenges	Whole Sample			Years of Experience	N	M	SD
	N	M	SD				
Strategic	194	3.72	1.06	0 – 5 years	48	3.63	.92
Challenges				6 – 10 years	66	4.12	.79
				More than 10 years	80	3.44	1.23
Organizational	194	3.57	.96	0 – 5 years	48	3.57	.85
Challenges				6 – 10 years	66	3.87	.79
				More than 10 years	80	3.31	1.07
Human	194	3.62	.81	0 – 5 years	48	3.60	.79
Resources				6 – 10 years	66	3.91	.61
Challenges				More than 10 years	80	3.40	.91
Procedural	194	3.65	.77	0 – 5 years	48	3.71	.72
Challenges				6 – 10 years	66	3.80	.56
				More than 10 years	80	3.50	.92

A comparison of survey response means is shown in Table 17, illustrating the scores of

the survey for the whole sample, female respondents, and male respondents. There are

negligible differences between male and female means. Overall, male and female faculty

members were comparable in all challenges' means.

Table 17

Average Scores for Gender

Challenges	Whole Sample			Gender	N	M	SD
	N	M	SD				
Strategic Challenges	194	3.72	1.06	Male	144	3.71	1.03
				Female	50	3.74	1.18
Organizational Challenges	194	3.57	.96	Male	144	3.59	.94
				Female	50	3.50	1.01
Human Resources Challenges	194	3.62	.81	Male	144	3.63	.79
				Female	50	3.61	.91
Procedural Challenges	194	3.65	.77	Male	144	3.66	.79
				Female	50	3.65	.89

Table 18 illustrates mean scores that were compared based on job status. The mean comparison from the table shows the strategic challenges had the largest mean among the whole sample for the professors' subgroup ($M = 4.44$, $SD = .43$). This was followed closely by the organizational challenges ($M = 4.15$, $SD = .36$) and by the human resources challenges ($M = 3.95$, $SD = .47$) for the professors' subgroup. Overall, the professors' subgroup had a larger mean than all subgroups for all categories of challenges except for the procedural challenges, which had the largest mean among the whole sample for the assistant professors' subgroup ($M = 3.90$, $SD = .65$). The assistant professors' subgroup had a greater mean than the associate professors, lecturers, and teacher subgroups for all categories of challenges. The lecturers' subgroup had a lower mean than the all subgroups for all categories of challenges except for the procedural challenges ($M = 3.54$, $SD = .80$).

Table 18

Average Scores for Job Status

Challenges	Whole Sample			Job Status	N	M	SD
	N	M	SD				
Strategic Challenges	194	3.72	1.06	Professors	11	4.44	.43
				Associate professors	10	3.86	1.29
				Assistant professors	44	4.04	.91
				Lecturers	89	3.53	1.12
				Teachers	40	3.56	1.01
Organizational Challenges	194	3.57	.96	Professors	11	4.15	.36
				Associate professors	10	3.70	1.21
				Assistant professors	44	3.86	.85
				Lecturers	89	3.34	.98
				Teachers	40	3.54	.95
Human Resources Challenges	194	3.62	.81	Professors	11	3.95	.47
				Associate professors	10	3.57	1.22
				Assistant professors	44	3.92	.69
				Lecturers	89	3.44	.80
				Teachers	40	3.62	.85
Procedural Challenges	194	3.65	.77	Professors	11	3.84	.39
				Associate professors	10	3.50	.98
				Assistant professors	44	3.90	.65
				Lecturers	89	3.54	.80
				Teachers	40	3.54	.81

As shown in Table 19, the data indicated that strategic challenges ranked first for all of the challenges. Procedural challenges ranked second between the categories of challenges. This was followed closely by human resources challenges, which ranked third. Organizational challenges ranked last. Categories of challenges according to mean scores from the most challenging to the least challenging were strategic challenges ($M = 3.72$, $SD = 1.06$), procedural

challenges ($M = 3.65$, $SD = .77$), human resources challenges ($M = 3.62$, $SD = .81$), and

organizational challenges ($M = 3.57$, $SD = .96$).

Table 19

Rank of Challenges' Categories

Rank	Challenges	M	SD
1	Strategic Challenges	3.72	1.06
2	Procedural Challenges	3.65	.77
3	Human Resources Challenges	3.62	.81
4	Organizational Challenges.	3.57	.96

According to perspectives of faculty members of Yanbu Industrial College and Yanbu

University College in Yanbu Al Sinaiyah City, KSA, Table 20 displays the rank of the current

challenges of successful TQM implementation in Saudi HEIs. According to mean scores, "Poor

and ineffective planning" ranked first for all challenges ($M = 3.31$, $SD = 1.25$). This was

followed closely by "Poor and ineffective leadership" ($M = 3.30$, $SD = 1.26$). However, "Lack

of funding and resources" ranked last for all challenges ($M = 3.47$, $SD = 1.19$).

Table 20

Rank of Challenges

Rank	Challenges	*M*	*SD*
1	Poor and ineffective planning.	3.81	1.25
2	Poor and ineffective leadership.	3.80	1.26
3	Bureaucracy and increased workload.	3.73	0.94
4	Inadequate human resource development.	3.70	1.06
5	Lack of strong commitment from all higher education leaders.	3.69	1.21
6	Lack of proper process management.	3.67	0.96
6	Lack of coordination between departments.	3.67	0.97
7	Unjustified Total Quality Management program.	3.66	1.20
8	Inadequate knowledge and information about TQM.	3.65	0.96
9	Poor internal communication.	3.64	1.13
10	Lack of long-term view.	3.63	1.22
11	Lack of a continuous improvement in culture.	3.62	1.20
11	Lack of stakeholder involvement and commitment.	3.62	1.05
12	Lack of team orientation.	3.60	1.12
13	Lack of employee empowerment.	3.59	1.03
14	Lack of an evaluation and self-assessment system.	3.58	1.12
15	Lack of an information management system.	3.55	1.21
15	Lack of customer focus.	3.55	1.00
16	Employees' resistance to change.	3.53	1.07
17	Lack of funding and resources.	3.47	1.19

Inferential Analyses of the Null Hypotheses

The next section presents data from the inferential tests that were used to draw conclusions regarding each of the three null hypotheses. A series of three MANOVA inferential tests were used in this study. The following null hypotheses were formulated from the research questions previously presented.

$H_0 1$: There is no statistically significant difference based on the participants' years of experience and the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM?

$H_0 2$: There is no statistically significant difference based on the participants' gender and the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM?

$H_0 3$: There is no statistically significant difference based on the participants' job status and the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM?

Null Hypothesis #1 ($H_0 1$)

Hypothesis 1 aimed to see if there were significant differences on the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM based on the participants' years of experience. This null was examined using a MANOVA. MANOVA is a type of multivariate analysis used to analyze data that involves more than one dependent variable at a time and allows testing hypotheses regarding the effect of one or more independent variables on two or more dependent variables (Field, 2015). The assumptions within a MANOVA were tested to make sure the inferential findings were valid. There were no univariate or multivariate outliers present within the data. As no data point

among the different groups was more than 1.5 standard deviations away from the edge of the

boxplots, there was an absence of univariate outliers. The dependent variables within this null

hypothesis demonstrated appropriate levels of correlation but were not too heavily correlated to

indicate an issue with multicollinearity. The scatterplot matrices indicated a linear relationship

for each group of the dependent variables, and the assumption of linearity was met. Each

Shapiro Wilk's test within this null hypothesis was significant ($p > .05$). This means the

assumption of normality was violated. The violation of normality could have also led to the

violation of the assumption of homoscedasticity, which was significant according to Box's test of

equality of covariance matrices ($F = 2.084$, $p = .003$). Due to violating the assumption of

homoscedasticity, the MANOVA was tested using the Pillai's trace test rather than the more

standard Wilks' lambda test, since the Pillai's trace test is more robust to a violation of the

assumption of homoscedasticity.

The means of the independent variables scores were examined to determine whether there

was a statistically significant mean difference on the composite scores for strategic,

organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM

based on the participants' years of experience. The MANOVA determined a significant

difference through the use of the Pillai's trace test, $F(8, 378) = 2.897$, $p = .004$. In order to

determine which of the groups caused this significant difference, separate univariate tests were

completed.

With a significant MANOVA result, a one-way ANOVA test for each of the four

categories of the challenges of successful TQM implementation was conducted to determine

whether any of the groups were significantly different from one another based on years of

experience. The one-way ANOVA used a Tukey HSD post hoc test for all of the four categories

of the challenges of successful TQM implementation that had significant difference, since there was no evidence of a violation of the assumption of homogeneity of variance.

The three challenges categories of successful TQM implementation that demonstrated significant difference based on years of experience were strategic challenges ($p < .000$), organizational challenges ($p = .002$), and human resources challenges ($p = .001$). For all three of the categories of challenges, the faculty members with six to 10 years experience scored statistically significantly higher than their faculty counterparts with zero to five years and more than 10 years experience. However, the faculty members with more than 10 years of experience scored statistically significantly lower than their colleagues with zero to five years experience.

The procedural challenges did not demonstrate any significant differences ($p = .054$). The overall null regarding significant differences on any of the four categories of the challenges based on years of experience was rejected. Table 21 demonstrates these statistically significant differences.

Table 21

Four Categories of the Challenges Based on Years of Experience

Challenge	Years of Experience	*M*	*SD*	*F*	*Sig*
Strategic Challenges	0 to 5 years	3.63	.92		
	6 to 10 years	4.12	.79		
	More than 10 years	3.44	1.23		
	Total	3.72	1.06	8.23	.000
Organizational Challenges	0 to 5 years	3.57	.85		
	6 to 10 years	3.87	.79		
	More than 10 years	3.31	1.07		
	Total	3.57	.96	6.58	.002
Human Resources Challenges	0 to 5 years	3.60	.79		
	6 to 10 years	3.91	.61		
	More than 10 years	3.40	.91		
	Total	3.62	.82	7.45	.001
Procedural Challenges	0 to 5 years	3.71	.72		
	6 to 10 years	3.80	.56		
	More than 10 years	3.50	.92		
	Total	3.65	.77	2.97	.054

Null Hypothesis #2 (H₀2)

Hypothesis 2 aimed to see if there were significant differences on the composite scores

for strategic, organizational, human resources, and procedural challenges in Saudi HEIs

implementing TQM based on the participants' gender. This null was examined using a

MANOVA. The assumptions within a MANOVA were tested to make sure the inferential

findings were valid. There were no univariate or multivariate outliers present within the data.

As no data point among the different groups was more than 1.5 standard deviations away from

the edge of the boxplots, the absence of univariate outliers was determined. Each Shapiro Wilk's

test within this null hypothesis was not significant ($p > .05$). This meant the assumption of

normality was met. The dependent variables within this null hypothesis demonstrated

appropriate levels of correlation but were not too heavily correlated to indicate an issue with

multicollinearity. The scatterplot matrices indicated a linear relationship for each group of the

dependent variables, and the assumption of linearity was met. The assumption of

homoscedasticity was violated according to Box's test of equality of covariance matrices ($F =$

2.021, $p =$.027). Due to violating the assumption of homoscedasticity, the MANOVA was tested

using the Pillai's trace test rather than the more standard Wilks' lambda test since the Pillai's

trace test is more robust to a violation of the assumption of homoscedasticity.

The means of the independent variables' scores were examined to determine whether

there was a statistically significant mean difference on the composite scores for strategic,

organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM

based on the participants' gender. The MANOVA determined there was not a significant

difference through the use of the Pillai's trace test, $F(4, 189) = .403, p = .806$. With no

significance found, there was no need for follow-up univariate tests. The null hypothesis

regarding significant difference on any of the four categories of the challenges based on the

participants' gender was retained.

Null Hypothesis #3 (H_03)

Hypothesis 3 aimed to see if there were significant differences on the composite scores

for strategic, organizational, human resources, and procedural challenges in Saudi HEIs

implementing TQM based on the participants' job status. This null was examined using a

MANOVA. The assumptions within a MANOVA were tested to make sure the inferential

findings were valid. There were no univariate or multivariate outliers present within the data.

As no data point among the different groups was more than 1.5 standard deviations away from

the edge of the boxplots, the absence of univariate outliers was determined. Each Shapiro Wilk's

test within this null hypothesis was not significant ($p > .05$). This meant the assumption of

normality was met. The dependent variables within this null hypothesis demonstrated

appropriate levels of correlation but were not too heavily correlated to indicate an issue with

multicollinearity. The scatterplot matrices indicated a linear relationship for each group of the

dependent variables, and the assumption of linearity was met. The assumption of

homoscedasticity was not violated with a non-significant Box's test of equality of covariance

matrices ($F = 1.044$, $p = .394$).

The means of the independent variables scores were examined to determine whether there

was a statistically significant mean difference on the composite scores for strategic,

organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM

based on the participants' job status. The MANOVA determined there was not a significant

difference through the use of the Pillai's trace test, $F(16, 756) = 1.59$, $p = .067$. With no

significance found, there was no need for follow-up univariate tests. The null hypothesis

regarding significant difference on any of the four categories of the challenges based on the

participants' job status was retained.

Summary

This chapter was divided into two sections. The first section covered the descriptive

statistics of the demographic variables; the second section discussed the finding of the data in

reference to the null hypotheses. The research questions concerned the challenges to successful

TQM implementation in Saudi HEIs according to perspectives of faculty members of Yanbu

Industrial College and Yanbu University College in Yanbu Al Sinaiyah City, KSA. There were

three null hypotheses that were tested. Quantitative data were collected using a survey

instrument to find answers to the four research questions developed in this study.

In the descriptive statistics section, the data showed that strategic challenges ranked first, and procedural challenges ranked second in the categories of challenges. This was followed closely by human resources challenges, which ranked third. Organizational challenges ranked fourth.

With respect to Hypotheses 1, the results of the MANOVA test indicated that the computed F-ratios for the participants in three of the four challenges categories of successful TQM implementation were significantly different based on years of experience that were strategic, organizational, and human resources challenges. For all three of the categories of the challenges, the faculty members with six to 10 years of experience scored statistically significantly higher than their faculty counterparts. On the other hand, the faculty members with more than 10 years of experience scored statistically significantly lower than other faculty members. Finally, the procedural challenges did not demonstrate any significant differences based on years of experience. The overall null regarding significant differences on any of the four categories of the challenges based on years of experience was rejected.

With respect to Hypotheses 2 and 3, the results of the MANOVA test indicated the computed F-ratio for the participants in each challenges categories of successful TQM implementation. Each one of the independent variables was not significant at a .05 level in any of the four categories of challenges. Therefore, Hypotheses 2 and 3 were retained.

CHAPTER 5

DISCUSSION OF FINDINGS, IMPLICATIONS, RECOMMENDATIONS, AND SUMMARY

This final chapter of the study is divided into four sections: discussion of findings,

implications, recommendations for future research, and summary. The discussion of findings

section presents the main points of the findings discussed in Chapter 4 and provides discussion

of findings regarding descriptive and inferential questions included in this study. The

implication section provides recommendations for Saudi HEIs. The recommendations for future

studies present suggestions for others to expand the scope of this study. Finally, the summary

provides the main points covered in the chapter.

The main purpose of this study was to identify the challenges to successful TQM

implementation in Saudi HEIs. A quantitative study was used to examine the effects of selected

demographic variables of faculty members on categories of TQM implementation challenges.

The demographic variables (years of experience, gender, and jobs status) were used as the

independent variables and were tested to show their impact on the dependent variables, which

were the categories of TQM implementation challenges (i.e., strategic challenges, organizational

challenges, human resources challenges, and procedural challenges). Data were collected by

sending a two-part survey electronically. The first part collected some demographic variables of

the respondents, and the second part inquired about the 20 challenges to successful TQM

implementation. The survey followed a five-point Likert-type scale to rate the challenges to

successful TQM implementation. The questionnaires were sent via email to 580 faculty

members of Yanbu Industrial College and Yanbu University College in Yanbu Al Sinaiyah City,

KSA. Two hundred fifty (43%) of the 580 participated in the survey. Of those participants, 194

were valid and were analyzed for the purpose of this study. Statistical analyses of the data

included descriptive statistics and a MANOVA test. The descriptive question was, What are the

current challenges of successful TQM implementation in Saudi HEIs? A MANOVA test was

applied to analyze the following inferential questions:

1. Based on the participants' years of experience, are there significant differences on the
    composite scores for strategic, organizational, human resources, and procedural
    challenges in Saudi HEIs implementing TQM?

2. Based on the participants' gender, are there significant differences on the composite
    scores for strategic, organizational, human resources, and procedural challenges in
    Saudi HEIs implementing TQM?

3. Based on the participants' job status, are there significant differences on the
    composite scores for strategic, organizational, human resources, and procedural
    challenges in Saudi HEIs implementing TQM?

Discussion of Findings

Demographic data indicated that more than 24% of faculty members had five years of

experience or less. The largest number had more than 10 years of experience (41.2 %), followed

by those who had been in their job for six years and up to 10 years of experience (34.0%). The

findings also indicated that more than 25% of the subjects were women. Regarding their job

status, 5.7% of faculty members were professors, 5.2% were associate professors, 22.7% were

assistant professors, 45.9% were lecturers, and 20.6% were teachers.

Descriptive Question

The following descriptive question was posed, What are the current challenges of successful TQM implementation in Saudi HEIs? Results indicated according to mean scores that strategic challenges ranked first among the challenges ($M = 3.72$), followed by procedural challenges ($M = 3.65$), human resources challenges ($M = 3.62$), and organizational challenges ($M = 3.57$). The findings also indicated that the construct "Poor and ineffective planning" ranked first of all of the challenges ($M = 3.81$), followed closely by the construct "Poor and ineffective leadership" ($M = 3.80$). However, the construct "Lack of funding and resources" ranked last ($M = 3.47$). Previous studies conducted also matched with these findings. Mosadeghrad (2014b) pointed out, "Strategic problems are significant barriers to TQM implementation and have the most negative impact on its success" (p. 163). Mosadeghrad (2014a) also found that many TQM implementation failures could be affected by poor and ineffective planning. Brigham (1993) noted that weak leadership is a common error in applying TQM. Mosadeghrad (2013) found that poor leadership was among the most cited challenges to successful TQM implementation in third world countries. Hill (2008) analyzed and found 21 challenges to TQM implementation that resulted in the following shortcomings: poor planning, poor training, and poor leadership. A start to increasing successful TQM implementation in Saudi HEIs could begin by bringing more attention to strategic challenges, especially the challenges regarding poor and ineffective planning and leadership.

Hypothesis #1

Based on the participants' years of experience, are there significant differences on the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM? With a significant MANOVA result, a one-way ANOVA

revealed that there was a significant difference between faculty members based on years of experience in strategic challenges ($p < .000$), organizational challenges ($p =.002$), and human resources challenges ($p =.001$). This meant the faculty members with 6 to 10 years of experience scored statistically significantly higher than their faculty counterparts for all three of challenges categories. However, the faculty members with more than 10 years of experience scored statistically significantly lower than their colleagues. The procedural challenges did not demonstrate any significant differences ($p =.054$). A previous study challenged this statistical finding. Radi (2006) found that there was no significant difference between the responses of the sample in the categories of obstacles that hinder application of TQM in Technical Education Institution in Gaza due to their experience.

Hypotheses #2

Based on the participants' gender, are there significant differences on the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM? Out of the 194 respondents who participated in this study, 144 male faculty members and 50 female faculty members responded to the questions regarding gender and the ranking of challenges to successful TQM implementation in Saudi HEIs. The results of the MANOVA test indicated that there was no significance at the .05 level between female and male faculty members on each of the four categories of the challenges. Hypothesis 2, therefore, was retained. The previous statistical finding matched with the findings of Radi's study about the obstacles' TQM application in the Technical Education Institution in Gaza. She found no significant differences between the obstacles due to the participants' gender (Radi, 2006).

Hypotheses # 3

Based on the participants' job status, are there significant differences on the composite scores for strategic, organizational, human resources, and procedural challenges in Saudi HEIs implementing TQM? Of the 194 faculty members who responded, 11 were professors, 10 were associate professors, 44 were assistant professors, 89 were lecturers, and 40 were teachers. They responded to the questions regarding their job status and the ranking of challenges to successful TQM implementation in Saudi HEIs. The results of the MANOVA test indicated that the computed *F*-ratio for the participants in each of the four categories of the challenges and each faculty members' job status was not significant at the .05 level. The null hypothesis, therefore, was retained. Radi (2006) found that there were no significant differences between the responses' position on categories of obstacles TQM application.

Implications

This study has highlighted some of the sources of challenges of successful TQM implementation in Saudi Arabia HEIs. The significance of this study was that the perspectives of faculty members would identify the challenges to successful TQM implementation. The identification process may help to prevent or reduce the failure of TQM implementation in the future. The findings of this study contribute to the literature on challenges to successful TQM implementation in public colleges and universities in Saudi Arabia.

Data obtained from participants were analyzed to determine the ranking of challenges to successful TQM implementation in Saudi HEIs. Results indicated that strategic challenges ranked first, followed by procedural challenges, human resources challenges, and organizational challenges. When Mosadeghrad (2014b) compared the barriers to successful TQM implementation in developed and developing countries, he found that overall third world

countries reported having difficulties in areas of strategic and human resources challenges. The

findings in this study also indicated that the construct concerning poor and ineffective planning

ranked first for all of the challenges, and the construct addressing poor and ineffective leadership

ranked second.

According to Suleman and Gul (2015), weaknesses in planning hinder TQM from

delivering quality in an educational product. Newall and Dale (1991) found that ineffective

planning is one of the key reasons for difficulties in implementing TQM in several United

Kingdom organizations. Moreover, Altahayneh (2014) attributed poor planning to be one

possible factor of failure of TQM implementation in HEIs. According to Mosadeghrad (2014b),

"Leadership has a crucial role in the success of TQM programs" (p. 164). Bani Ahmed (2012)

found that poor and ineffective leadership is part of the set of obstacles that hinders TQM

implementation in Arab HEIs. Zabadi (2013) stated that the adoption of TQM in colleges often

did not happen with the presence of ineffective leadership.

In addition, the study found that there were significant differences between faculty

members based on years of experience in strategic, organizational, and human resources

challenges. Also, the results showed that the faculty members with six to 10 years experience

scored statistically significantly higher than their faculty counterparts for all three categories of

challenges. This finding is not in agreement with the results of Altahayneh's (2014) study that

consistently maintained that there was no statistically significant relationship in the faculty

members' years of experience and the challenges of successful TQM implementation. However,

the procedural challenges did not demonstrate any significant differences. The characteristics of

the participants examined to determine the impact of variables were gender and job status. The

study found that there were no statistically significant differences in gender and job status in each challenge category of successful TQM implementation.

According to Alzhrani et al. (2016), there were few studies about TQM implementation in Saudi universities. Several studies have been conducted on some Saudi HEIs and the differentiated adoption of TQM without focusing on obstacles and challenges of TQM implementation. No previous study had been conducted to identify the challenges to successful TQM implementation locally.

This study has implications for Saudi HEIs to bring more attention to strategic challenges, especially the challenges regarding poor and ineffective planning and leadership. This effort may increase the success of TQM implementation and save time and resources. In other words, effective planning and leadership appear to be major elements to successful TQM implementation in Saudi HEIs; in this context more consideration to these elements is required in a strategic plan in order to enhance and increase the quality education. Alzhrani et al. (2016) recommended that in the process of applying TQM, Saudi HEIs take these challenges into account when formulating their strategic plan. Implementing TQM is not without difficulties and achieving its promised benefits is not easy, but identifying challenges that must be overcome is the right path for successful TQM implementation (Mosadeghrad, 2014b). Awareness of the obstacles to TQM implementation may assist national universities in increasing their understanding of TQM execution and in establishing a strategic plan according to this awareness. Successful TQM implementation could then increase and enhance the performance of Saudi universities.

Recommendations for Further Research

Recommendations for further study includes suggestions based on the results of this research. There are several areas where further research is still needed. These several areas include the following:

1. This study examined faculty members of Yanbu Industrial College and Yanbu University College in Yanbu Al Sinaiyah City; both institutions are public colleges. Future studies could include public and private HEIs in other cities within the KSA. In doing so, the findings and conclusions may be more applicable throughout the KSA.

2. This study might be replicated and use qualitative methods to provide a deeper understanding of the obstacles of TQM application in Saudi HEIs.

3. This study indicated that strategic challenges ranked first, followed by procedural challenges. Studies are needed that focus on the effects of challenges in these areas that may be hindering TQM implementation in Saudi HEIs.

4. The findings of this study indicated that ineffective planning and ineffective leadership ranked first and second, respectively, for all of the challenges. Future studies could focus on the effects of these factors on the implementation of TQM in Saudi HEIs.

5. This study might be replicated and focus only on the current challenges of successful TQM implementation. Studies are needed that focus on strengths of successful TQM implementation in Saudi universities for helping national universities deepen understanding about TQM execution.

6. This study could be replicated and expanded to examine the implementation of TQM in Saudi HEIs as well as in universities worldwide that have successfully applied TQM. The results could then be compared to provide feedback on progress made and areas of weakness in TQM of Saudi HEIs.

Summary

In summary, there was one descriptive question and three inferential questions addressed in this study. These questions were related to faculty members' perspectives of identifying the challenges to successful TQM implementation in Saudi HEIs and select demographic aspects, such as years of experience, gender, and job status. With respect to the findings, results indicated that strategic challenges ranked first of the challenges, followed by procedural challenges, human resources challenges, and organizational challenges. In addition, this study demonstrated inferential statistical significance for one of the three inferential questions. Based on the findings, a MANOVA test indicated that there was a significant difference between faculty members based on years of experience, but gender and job status did not reveal any significant difference. Several implications and recommendations for future research resulted from this study. Based on the study's findings, the study could encourage Saudi HEIs to identify and have a deeper understanding of TQM implementation challenges, which may lead to increasing the success of TQM implementation. Future research recommendations include replicating this study for public and private HEIs in other cities within the KSA. A similar study should be replicated and use qualitative methods to provide a more in-depth understanding of the obstacles of TQM application in Saudi HEIs. Another study could examine strategic challenges and procedural challenges, investigating how and to what extent there are major barriers to

successful TQM implementation in Saudi HEIs. The status of effective planning and leadership,

specifically, should also be taken into consideration.

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APPENDIX A: SURVEY INSTRUMENT WITH CITATIONS

Directions:

Thank you for your participation in this survey. It will take approximately 5-10 minutes to complete. The survey is divided into two sections:

- Section 1 – Demographic questions.
- Section 2 – Challenges to successful TQM implementation in Saudi higher education institutions.

The entire survey must be completed for data to be tabulated.

Section 1: Demographic Questions

1. How many years of experience do you have as a faculty member?

1   - 5 years   6 – 10 years   More than 10 years

2. What is your gender?

   Male   Female

3. What is your job status?

Professor   Associate professor   Assistant professor   Lecturer   Teacher

Section 2: Challenges to successful TQM implementation in Saudi higher education institutions

Indicate the level of challenges to successful TQM implementation in your college using the

 following scale. Read these statements and choose the response that best matches your

 perspective as a faculty member. Select only one rating for each question.

5 = Strongly Agree   4 = Agree   3 = Undecided   2= Disagree   1= Strongly Disagree

Strategic challenges

1. Poor and ineffective leadership.   1 2 3 4 5

(Brigham, 1993; O'Mahony & Garavan, 2012)

2. Poor and ineffective planning.   1 2 3 4 5

(Suleman & Gul, 2015)

3. Lack of strong commitment from all higher education leaders.   1 2 3 4 5

(Al Tasheh, 2013; Neave, 1987; O'Mahony & Garavan, 2012; Vora, 2002)

4. Unjustified Total Quality Management (TQM) program.   1 2 3 4 5

(Beer, 2003; Mosadeghrad, 2014)

5. Lack of long-term view.   1 2 3 4 5

(Beer, 2003; Mosadeghrad, 2014)

Organizational challenges

6. Lack of a continuous improvement in culture.   1 2 3 4 5

(Talib & Rahman, 2015)

7. Lack of an information management system.   1 2 3 4 5

(Mosadeghrad, 2013; Mosadeghrad, 2014b)

8. Lack of funding and resources.   1 2 3 4 5

(Ater, 2013; Suleman & Gul, 2015).

9. Lack of an evaluation and self-assessment system.   1 2 3 4 5

(Al Tasheh, 2013; Mosadeghrad, 2014b)

10.   Lack of team orientation   1 2 3 4 5

(Talib, Rahman, & Qureshi, 2011; Westcott, 2006)

Human resources challenges

11. Inadequate human resource development (HRD).   1 2 3 4 5

(Al-Amri, 2012; Owlia & Aspinwall, 1997)

12. Poor internal communication.   1 2 3 4 5

(Lakhe & Mohanty, 1994; Talib & Rahman, 2015)

13. Lack of stakeholder involvement and commitment.   1 2 3 4 5

(Alzhrani, Alotibie, & Abdulaziz, 2016; O'Mahony & Garavan, 2012)

14. Employees resistance to change.   1 2 3 4 5

(Al Tasheh, 2013; Lakhe & Mohanty, 1994).

15. Inadequate knowledge and information about TQM.   1 2 3 4 5

(Altahayneh, 2014; Al Tasheh, 2013)

16. Lack of employee empowerment.   1 2 3 4 5

(AlaKhalifa & Aspinwall, 2000)

Procedural challenges

17. Lack of customer focus.   1 2 3 4 5

(Mosadeghrad, 2014b; Sewell, 1997)

18. Bureaucracy and increased work load.   1 2 3 4 5

(Mosadeghrad, 2014; Venkatraman, 2007)

19. Lack of proper process management.   1 2 3 4 5

(Mosadeghrad, 2014b)

20. Lack of coordination between departments.   1 2 3 4 5

(Al Tasheh, 2013; Talib & Rahman, 2015; Talib, Rahman, & Qureshi, 2011)

APPENDIX B: SURVEY TO BE SENT TO YANBU INDUSTRIAL COLLEGE AND YANBU

UNIVERSITY COLLEGE IN YANBU AL SINAIYAH CITY, KSA

Directions:

Thank you for your participation in this survey. It will take approximately 5-10 minutes to

complete. The survey is divided into two sections:

- Section 1 – Demographic questions.

- Section 2 – Challenges to successful TQM implementation in Saudi higher
  education institutions.

The entire survey must be completed for data to be tabulated.

Section 1: Demographic Questions

4. How many years of experience do you have as a faculty member?

1   1 – 5 years   6 – 10 years   More than 10 years

5. What is your gender?

     Male   Female

6. What is your job status?

     Professor   Associate professor   Assistant professor   Lecturer   Teacher

Section 2: Challenges to successful TQM implementation in Saudi higher education institutions

Indicate the level of challenges to successful TQM implementation in your college using the following scale. Read these statements and choose the response that best matches your perspective as a faculty member. Select only one rating for each question.

5 = Strongly Agree   4 = Agree   3 = Undecided   2= Disagree   1= Strongly Disagree

1.   Poor and ineffective leadership.   1 2 3 4 5

2. Poor and ineffective planning.   1 2 3 4 5

3. Lack of strong commitment from all higher education leaders.   1 2 3 4 5

4. Unjustified Total Quality Management (TQM) program.   1 2 3 4 5

5. Lack of long-term view.   1 2 3 4 5

6. Lack of a continuous improvement in culture.   1 2 3 4 5

7. Lack of an information management system.   1 2 3 4 5

8. Lack of funding and resources.   1 2 3 4 5

9. Lack of an evaluation and self-assessment system.   1 2 3 4 5

10. Lack of team orientation   1 2 3 4 5

11. Inadequate human resource development (HRD).   1 2 3 4 5

12. Poor internal communication.   1 2 3 4 5

13. Lack of stakeholder involvement and commitment.   1 2 3 4 5

14. Employees resistance to change.   1 2 3 4 5

15. Inadequate knowledge and information about TQM.   1 2 3 4 5

16. Lack of employee empowerment.   1 2 3 4 5

17. Lack of customer focus.	1 2 3 4 5
18. Bureaucracy and increased work load.	1 2 3 4 5
19. Lack of proper process management.	1 2 3 4 5
20. Lack of coordination between departments.	1 2 3 4 5

APPENDIX C: IRB APPROVAL

Indiana State University
More. From day one.

DATE:	May 23, 2017
TO:	Ahmed Aljuhani
FROM:	Indiana State University Institutional Review Board
STUDY TITLE:	[1058753-1] Challenges to Successful Total Quality Management (TQM) Implementation in Saudi Higher Education Institutions
SUBMISSION TYPE:	New Project
ACTION:	DETERMINATION OF EXEMPT STATUS
DECISION DATE:	May 23, 2017
REVIEW CATEGORY:	Exemption category #2

Thank you for your submission of New Project materials for this research study. The Indiana State University Institutional Review Board has determined this project is EXEMPT FROM IRB REVIEW according to federal regulations (45 CFR 46). You do not need to submit continuation requests or a completion report. Should you need to make modifications to your protocol or informed consent forms that do not fall within the exempt categories, you will have to reapply to the IRB for review of your modified study.

Internet Research: If you are using an internet platform to collect data on human subjects, although your study is exempt from IRB review, ISU has specific policies about internet research that you should follow to the best of your ability and capability. Please review Section L. on Internet Research in the IRB Policy Manual.

Informed Consent: All ISU faculty, staff, and students conducting human subjects research within the "exempt" category are still ethically bound to follow the basic ethical principles of the Belmont Report: 1) respect for persons; 2) beneficence; and 3) justice. These three principles are best reflected in the practice of obtaining informed consent.

If you have any questions, please contact Dr. Kim Bodey within IRBNet by clicking on the study title on the "My Projects" screen and the "Send Project Mail" button on the left side of the "New Project Message" screen. I wish you well in completing your study.