A MODEL FOR IMPLEMENTATION OF TOTAL QUALITY MANAGEMENT PRACTICES ON EDUCATION PERFORMANCE IN IRAQ SECONDARY SCHOOLS

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DEDICATION

This work is dedicated to my family and my parents for their support, patience, understanding and prayers throughout the period of this research.
ACKNOWLEDGEMENT

Alhamdulillah … Praise be to God Almighty for giving me the ability to complete this research. My thanks and appreciation to my supervisor Assoc. Proof. Ts. Dr. Md. Fauzi Ahmad for his support and guidance throughout my studies. I am very grateful to everyone who had supported me in various ways and contributed to completion of this thesis.
ABSTRACT

Total Quality Management (TQM) is important in determining that an organisation can sustain in improving its competitiveness. TQM is one of the solutions for improving performance in an organisation. Education sector is still one of the greatest concerns in Iraq. The scope of this study is Iraq secondary schools. Iraq is one of the most important countries that gave special attention to education sector. However, Iraq secondary schools faces many challenges in students’ learning, such as poor educational performance, lack of infrastructure for educational institutions, school facilities and lack of student satisfaction. Furthermore, most previous works have given less emphasis on Compliance (CO) and Information Technology (IT) as mediators between TQM and Education Performance (EP); this has thus been identified as a theoretical gap. The main objective of this study is to develop TQM model with Compliance (CO) and Information Technology (IT) as mediators. The study applied Structural Equation Modelling (SEM) approaches to validate the proposed model. Data were collected through questionnaire, distributed to secondary school in Iraq. Data were obtained from 354 secondary schools in Iraq with 20.76 % response rate. The structural model results proved that TQM has a significant impact on educational performance. This study revealed that Compliance (CO) and Information Technology (IT) were important as mediators between TQM and educational performance. This is a theoretical and managerial finding that adds to the existing literature on quality management since very few studies have been conducted combining Compliance (CO) and Information Technology (IT) as mediators in the proposed TQM model. The results of this study are expected to be useful, and hope to be a guide for secondary school principals to improve educational performance through TQM applications.
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CHAPTER 1

INTRODUCTION

1.1 Research background

There is no doubt that education plays a significant role in the progression and development of any country. Education helps improve opportunities and develop human resources. The Iraqi government is improving its education system to a greater level. The Iraq government has faced many problems in development the secondary schools’ education due to poverty that hinders the use of information technology in education, lack of school buildings and weakness in school curriculum. This research is conducted to address these problems.

The lack of experience and competence of teachers in some high school and the opening of training courses to improve the performance of teachers. The reason for conducting this research is to address the problems and challenges that secondary schools face in Iraq through poor in the use of information technology in education, lack of school buildings and the weakness in some school curriculum that afflict secondary schools in Iraq, the implementation of Total Quality Management (TQM) in educational institutions. The annual budgetary allocations for education have risen since July 2013 to support education sector.

Iraqi secondary education substantially consists of an intermediate and preparatory section with a period of three-year study for both (Raho, 2017). TQM help to raise experience and efficiency in secondary school departments by opening of training courses to improve the performance of teachers. In this study the focus is on implementing TQM in Iraqi secondary schools. In order to find appropriate solutions to the problems and achieve the desired results related to Iraqi education, the survey method was used by distributing a questionnaire to a sample of secondary school
administrations in Iraq (Matt et al., 2015). In this study, the first theoretical gap was derived from the review of previous studies on the impact of TQM on higher education performance but not on secondary schools (Vij & Bedi, 2016). The second theoretical gap emerged as a result of the fact that most of the previous studies focused on human resource, and tools as a mediator between TQM and education performance.

Previous studies Dean & Gibbs (2015) did not employ the use of compliance, and information technology as a mediator together. The third theoretical gap is still inconsistent in previous studies between TQM and education performance. Previous studies have indicated a positive relationship between TQM and education performance (Wani, 2014). This study focused on how the comprehensive TQM affected the performance of Iraqi education, particularly in terms of in developing Iraqi secondary schools’ education to achieve continuous improvement in students’ satisfaction and efficiency, and to improving teachers’ teaching practices through the use of information technology in education.

This study also clarified the role of compliance and information technology as a mediator between TQM and educational performance (Pelech, 2016). The scope of this study was twofold mine areas; First, managers and teachers in secondary schools. Second, cities of southern Iraq (nine cities). The scope of this study was limited both in terms of its design and its restriction to the Iraq context. A need exists to conduct a case study to investigate the motivation beyond the implementation of management systems, and to determine whether it is because of commitment-based approach or due to pressure from regulations.

The target population covered secondary schools’ administrations. The study examined the extent to which TQM was implemented in schools and had any impact on the education performance. Specimens were determined through SEM which required a large sample size due to the occurrence of several estimates. Education in Iraq facing numerous challenges. Moreover, high expectations of education have led to the implementation of TQM in education by stakeholders. Furthermore, there is an urgent need for a better understanding of a mediator in the relationship between TQM and Educational Performance (EP) namely Compliance (CO) and Information Technology (IT) (District & Suleman, 2015). The education institutions in Iraq are facing difficulties, and these can be resolved through the implementation of TQM (Aljamali, 2015). Information technology can contribute to the improvement of educational performance which can stimulate the secondary performance of the
secondary school (Aminbeidokhti et al., 2017). The main goal of TQM in Iraqi education is to improve educational performance and overcome the challenges in education sector.

Education institutions in Iraq are facing problems of efficiency, and the application of quality improvement (Janks, 2014). Additionally, there are other challenges in the educational system in Iraq for example, inadequate provision of resources, poor enrolment, inadequate funding, poor quality and issues relating to drafting curriculum (Pourrajab et al., 2015). Therefore, this research is aimed at providing the necessary knowledge and improving Iraqi secondary schools’ performance to a higher level.

In’airat & Kassem (2014) define TQM as a philosophy and strategy that is based on continuous improvement, empowerment of people and continuous learning, creating a transformation of an organisation while providing excellent products and services. The Iraqi government aims to improve the educational performance and overcome all the severe conditions faced by administrations through the implementation of TQM.

Thus, secondary schools administrations must improve education performance through the use of information technology (Ab-Teck et al., 2014). The Iraqi government supports secondary schools education (Ejionueme, 2015). The government implemented to implement TQM in educational institutions since 2013 in a bid to contribute to the development of education (Özdemir, 2016).

Focused quality on the development of education performance in secondary schools, because these principles are essential to success through collaboration between students’ parents and school management (Al-fraihi, 2014). In addition, to improve the performance of secondary schools education, the use of information technology in education should be encouraged (Ndegwah, 2014). Over the years, Iraq education sector have suffered a massive setback due to the prolonged and incessant wars witnessed in Iraq (Deudney & Ikenberry, 2017). Recently while the war has subsided, Iraqi government, with the assistance of international organizations has made frantic efforts to ensure that the shortfall within the educational sector is adequately bridged (Stech, 2014). According to UNESCO (2004), there is a need there was a need for massive rehabilitation plans to improve Iraqi education. These plans include the need for improved access and quality, need for in-service teacher training, renewal of curriculum and textbook, supplies of teaching-learning materials,
rehabilitation of school infrastructure, the provision of special workrooms and provision of equipment, furniture and materials (Dahlgard, 2008).

As a result of persistent unrest in the country over the years, Koran (2015) attested to the fact that some of the problems mentioned. In Iraq, there are two categories of secondary schools: general and vocational. General schools offer a well-rounded education with a Literary / Humanities track and scientific track. There are three branches of vocational schools: agricultural, industrial and commercial (Raho, 2017). Agricultural schools prepare students for a job in the crops-raising field; Industrial schools prepare students for a job in auto machinery, metalwork or in other industrial sectors; and commercial prepares students for a job in business administration or accounting. Students are eligible for graduation in the twelfth grade.

The Baccalaureate exams is a compulsory requirement for the completion of the secondary school level where a certificate of completion will be issued (Brown et al., 2016). Koran (2015) explains that secondary school education consists of two phases, which are the intermediate and the preparatory. The first three years constitute intermediate school, leading to the Baccalaureate from the third level, and the remaining three years constitute a preparatory stage leading to the sixth level of Baccalaureate. According to the Iraqi Ministry of Education, secondary schooling in Iraq faces severe problems, such as a lack of adequate infrastructure, lack of qualified teachers, the failure of the curriculum based on global academic standards and lack of textbooks and teaching aids (Raho, 2017).

Some secondary schools have only one textbook available to share amongst five to six students. All the problems mentioned above due to poor administration which prompted the need to employ TQM to enhance education performance as proposed in this research. O’Boyle & Harter (2016) the administration of in terms of each secondary school comprises class teachers, Director, School General Manager and Federal Minister of Education. The class teachers are directly responsible to the Director how is administratively answerable to the School’s General Manager. The General Manager, then, reports to the Federal Minister of Education. The goal of TQM is to develop and improve the performance of students in secondary schools using modern methods of teaching through information and communication technology. Authors interested in the application of TQM in educational institutions to improve education performance and provide students’ performance (Ibragimov et al., 2015). The purpose of this study is to find appropriate solutions faced by schools. The author
also emphasized the importance of developing the skills of managers and teachers through continuous training courses. The Iraqi Ministry of Education has implemented TQM since 2013 in order to raise the academic performance schools, and provide training courses to academic staff in using modern technology in education (Raho, 2017).

Education in Iraq has suffered many problems. The lack of TQM implementation in Iraqi secondary schools, lack of compliance by stakeholders in the implementation of TQM, and poor implementation of Information Technology (IT) to boost education performance have resulted in poor educational performance. Weakness in education performance is another associated problem in Iraqi educational system. Therefore, the government in Iraq has applied TQM in educational institutions by applying modern technology (Großschedl et al., 2014).

Khanam et al., (2013) argue that TQM has shown significant influence on education performance in developing countries. Information technology is an essential tool in driving TQM towards enhancing the education performance in Iraq. This study identified the role of information technology in quality improvement in terms of increasing quality awareness; of online information about the quality level; and reducing quality costs. Furthermore, the study harnessed nine (9) key dimensions concerning TQM-IT relationship from related literature (Khanam et al, 2013).

This research focused on two main areas in terms of the application of TQM in secondary schools These areas are; (1) the managers and teachers at secondary schools; (2) the location of the secondary schools which were in nine cities of southern Iraq.

The background for this study explain detail methodology and theoretical analysis of the methods applied to this field of study. The word methodology, when used in research, refers to the approaches and strategies adopted by a researcher to carry out a study in accordance with their desired aim and stipulated research objectives. It first outlines the philosophical assumptions underpinning this research, discussing the researcher’s constructivist approach. The research methodology provides a detailed description of the research procedures and discusses all stages of research. This methodology begins with research design, a discussion of the general structure of the survey technique, and research methodology flow. The survey technique entails a detailed explanation of the procedure of the questionnaire development, of the questionnaire, verification of the pilot study, expert validity,
reliability, study samples, statistical analysis, and validity. This section also substantiates the need to carry out a pilot survey before data collection to select the survey method (Shaari, 2010).

In’airat & Kassem, (2014b) explain that total number of employees involved, continuous improvement, continuous training, teamwork, empowerment, top management, culture change, democratic management customer satisfaction, compliance are the critical success factors of the implementation of TQM on education performance. Thus, this study clarified the importance of adding compliance and information technology as mediating variables to TQM on education performance in Iraqi secondary schools.

1.2 Problem statement

Previous research suggest that the implementation of TQM has significantly improved education performance (Kimet et al., 2016). Several researchers have reported successes in educational reforms, and its performance at basic, secondary and tertiary level of education with the integration of TQM strategy and tools, especially in western countries (Wani, 2014). TQM is characterized as a management tool which helps the management team to foster more collaborative work, leading high attainment of organizational goals (Roderick et al., 2014).

In the context of Iraqi education, there are many problems that has caused poor education performance. The first problem is related to, the application of TQM in students’ learning (Koorsse et al., 2015). Chen et al. (2015) explain that the key elements of quality compliance are the students. Studies have revealed, that secondary schools’ education in Iraq faces shortcomings of inadequate knowledge, and understanding of management principles concerning policies and decisions taken by school boards and administrators (Park & Dahalgaard, 2010). The Ministry of Education has implemented TQM since July 2013 and allocated funds from the annual budget to support and develop schools (Raho, 2017).

The second problem, lack of TQM implementation in secondary schools, such as, lack of infrastructure for education institutions, school facilities and customer satisfaction which resulted in poor education performance. The Iraqi government should improve educational institutions in order to improve educational performance
(Mamman et al., 2015). The third problem, lack of compliance by stakeholders in the implementation of TQM in Iraq educational institutions is one of the issues (Wani, 2014).

It caused to the poor education performance due to poor stakeholders' compliance of the principles of TQM in educational institutions. This is because the level of compliance is inadequate in Iraq educational institutions (Urh et al., 2015). The fourth problem, poor implementation of Information Technology (IT) to boost education performance in Iraq also initiates this research (Wani, 2014). Previous studies have indicated that the relevance of Information Technology (IT) to secondary school teachers in improving education performance (Sung et al., 2016).

Poor in education performance is another associated problem in Iraqi education (UNDP, 2019). The problem caused by lack of implementation of TQM amongst stakeholders. Additionally, previous studies have indicated that insufficient support for the secondary schools by the government in providing the annual budget for educational institution (Githinji, 2015). The problem is focusing on education performance, Facilities Performance (FP), Students’ Satisfaction (SS) and Administrative Performance (AP). The researcher aims to offer solutions to the problems highlighted in Figure 1.1 on stakeholders' compliance with the application of total quality management.

![Diagram showing managerial issues of implementing TQM in Iraq secondary schools](image)

Figure 1.1: Managerial issues of implementing TQM in Iraq secondary schools

According to the UNDP (2019), a comparison of an education index has been made amongst Iraq and other Asian countries, including Malaysia, Japan, China, and Singapore. The result shows that the educational index of Iraq is low compared to other
REFERENCES


Al-Rahmi, W. M., Othman, M. S., & Musa, M. A. (2014). The improvement of students’ academic performance by using social media through collaborative learning in Malaysian higher education. Asian Social Science, 10(8), 210–221.


Albrecht, S., Bakker, A. B., Gruman, J. A., Macey, W. H., & Saks, A. M. (2015). This is the authors’ final peer reviewed (post print) version of the item published as: Available from Deakin Research Online: Journal of Organizational Effectiveness, 2(1), 7–35.


Aithal, P. J., & Viswanathan, G. (2015). Comparison of the effect of morning and evening Indian classical ragas on the physical parameters of selected medicinal plants. A modern approach to ancient wisdom–impact of sonic notes at assigned


Bodin, T., García, T. R., Weiss, I., Jarquin, E., Glaser, J., Jakobsson, K., & Rojas, M.


*Psychometrika* VOL. 16, NO. 3.


environmental performance: The role of top management and organizational culture. *Journal of Cleaner Production*, 141, 56–66.


Folkman, S. (2018). Water Main Break Rates In the USA and Canada: A Comprehensive Study A Comprehensive Study Overall Pipe Breaks Up 27 % In Six Years.


constructs and consumer’s intention to buy. 35, 183–191.


Come. *Qualitative and quantitative methods in libraries*, 3 (3), 619-626.


Kumar, R., Goel, S., Harries, A. D., Lal, P., Singh, R. J., Kumar, A. M. V., & Wilson, N. C. (2014). How good is compliance with smoke-free legislation in India?
Results of 38 subnational surveys. *International Health*, 6 (3), 189–195.


Milani, A., & Kheirgao, M. (2016). Performance Appraisal of the Department of


quality assurance.


Sitated S Elf -A Gency T Heory Of It Adaptation And IT Reinvention In IS Research. 19(4), 1–8.


Neurorehabilitation, 04 (01).
Performance: A Conceptual Model Based On Libyan Manufacturing Industries. 


Sung, Y. T., Chang, K. E., & Liu, T. C. (2016). The effects of integrating mobile
devices with teaching and learning on students’ learning performance: A meta-
Sigma program in higher education. International Journal of Quality &
Reliability Management, 32(9), 951–969.
Journal of Economic Perspectives, 31(2), 165-86.
and the effectiveness of the “Zero defects” goal. 1. Scientific Cooperations
International Journal of Finance Business Economics Marketing and
Information Systems, 1(1), 61–70.
Tari, & Dick, (2016). Trends in quality management research in higher education
07(04), 12–30.
Students’ Satisfaction and Academic Performance (GPA)? The Case of a Mid-
Sized Public University. International Journal of Business Administration, 5(2),
1923–4007.
Tong, C., Tak, W. I., & Wong, A. (2015). The Impact of Knowledge Sharing on the
Relationship between Organizational culture and Job Satisfaction: The
Perception of Information Communication and Technology (ICT) Practitioners
Engineering, Construction and Architectural Management, 24(6), 1155–1169.
between service quality and organisational commitment in higher education. An
empirical study of faculty and administration staff. Total Quality Management &
Church, T. S. (2014). Implementation and adherence issues in a workplace
treadmill desk intervention. Applied Physiology. Nutrition, and Metabolism,
39(10), 1104–1111.

U-N-D-P, (2019). Human Development Data (1990-2018) Select data by dimension, indicator, year and/or country to see a dynamic interactive visualization of the data represented as line for trends, or bar for single years.


