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The effect of TQM intention to implement on work performance in Oman's Ministry of Justice

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Abstract

Purpose – This study illustrates the intention to implement total quality management (TQM) applications in Oman's Ministry of Justice (MOJ). The purpose of this paper is to examine the effect of TQM implementation on the MOJ's work performance (WP).
Design/methodology/approach – The study modified the TQM efficiency model by including new variables that had been ignored by previous studies. As a result, 320 questionnaires have been collected, and the study employed partial least squares for primary data analysis to test the research model.
Findings – Customer focused performance is an important factor that has a direct relationship with WP. However, the findings guide the explanation that there are other factors of TQM that have a direct effect on WP, and this research is directed at future research to select more profound factors of TQM.
Research limitations/implications – The main limitations of this study is that the analysis of the main study was based on the intention to implement TQM to replace the current management system's practice at Oman's MOJ.
Originality/value – This study is considered to be one of the significant studies related to the effect of testing intention to implement TQM on WP of Oman's MOJ.

Keywords Total quality management, Work performance, Oman's Ministry of Justice
Paper type Research paper

1. Introduction

The current study highlights the issue of Oman's Ministry of Justice (MOJ) need to improve its work performance (WP). It states that the MOJ uses a traditional management system to control WP, and this system has ignored some important management objectives required to improve the WP. This means that WP has not been improved for long time under the current management system, and many employees have not improved their work skills. Consequently, the current study contributes to improving the WP by proposing using total quality management (TQM) as a new management system for OMJ. It should be recalled that Oman's MOJ has been a non-TQM organization in the meantime.

The present study is focused on solving management system problems in Oman's MOJ through introducing a TQM framework. It has reviewed related past studies connected to TQM research. However, the difference in this study is related to one management topic: the intention to implement TQM in Oman's MOJ. Hence, past studies reviewed for this study have been about TQM that has been implemented in similar organizations.

Furthermore, TQM is a tool used to ensure quality in productivity at all levels of an organization. In addition, it considers sharing ideas with all the employees in an improvement program. TQM was initially used as an improvement tool, and over time, other tools have emerged that share similar objectives. Therefore, some organizations have shifted toward using some of these tools, such as Six Sigma, for their quality features, as TQM can be costly in terms of time and money. Moreover, TQM is successful when it

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incorporates good planning and organizing staff members to increase efficiency. Operational performance of an organization can be affected by environmental management (Charbel *et al.*, 2015), and a quality environment led by proactive management will have a positive effect on operational performance. Lee and Lee (2015) stated that learning and TQM have a positive effect on WP, and business excellence in any organization can be enhanced by good leadership toward learning and TQM practice. They stated that TQM success can be achieved through finding a good relationship between learning and business performance.

2. Research statement

Salim (2008) conducted a study on total quality application in court management in Oman and highlighted that TQM had a direct relationship with employee performance in the courts despite MOJ leading the court management system without any formal TQM implementation. According to the Ministry of Justice Management Auditing Department (2009), the MOJ did not utilize any standards for controlling employees entering and leaving the department. The study was conducted during an assessment of the functioning systems in certain courts around the country and stated that there are different systems in place to control employees work time. Ministry of Justice Training Department (2009) stated that the department did not follow the designated training plan during implementation of training programs. Additionally, this did not provide any training opportunities to teach the MOJ employees how to update their management skills and styles and share them within the MOJ to improve its services deliveries to the public that remain as a missing step. According to the Ministry of Justice Management Auditing Department (2009), employees should follow up decisions made by top management only during job implementation, and there is no connection between individual departments and top management.

3. Literature review

The main idea of using TQM in pharmaceuticals, according to the study performed by Bhaskar *et al.* (2011), is to show the implementation of an effective quality assurance policy in pharmaceutical industry. The study findings showed the following eight dimensions of quality success in pharmaceutical industry:

(1) performance: product's primary operating characteristics;

(2) features: supplements to a product's basic functioning characteristics;

(3) reliability: a probability of not malfunctioning during a specified period;

(4) conformance: the degree to which a product's design and operating characteristics meet established standards;

(5) durability: a measure of product life;

(6) service ability: the speed and ease of repair;

(7) aesthetics: how a product looks, feel, tastes and smells; and

(8) perceived quality: as seen by a customer.

Their finding included other three main key-elements of TQM approach, which are as follows:

(1) focus on the customer;

(2) employee involvement; and

(3) employee improvement.

Mohammed (2010) conducted a study on the impact of TQM in the telecommunications industry by using the Deming management model. The study used a questionnaire designed with a five-point Likert rating scale and a semistructured interview methodology for collecting data, including a random sampling of 400 executives and managers of cellular mobile telephone operators. At the same time, the study used the following variables:

(1) visionary leadership;

(2) employees' collaboration;

(3) suppliers' relationship;

(4) learning;

(5) process management;

(6) continuous improvement;

(7) employee fulfillment; and

(8) customer satisfaction.

The main finding of the study was supported to use Deming management model. At the same time, it was found that the relationships among variables were strong and appropriate for a factor analysis. Also, the correlation analysis between variables was significant. One more finding was that the Deming management model is applicable to any cultural environment. Moreover, the study recommended for the telecommunications industry in Pakistan to use this study for implementing TQM as it could help the industry increase the overall WP.

Implementing TQM in an academic organization was the study done by Ihtesham *et al.* (2010), and its main objective was to find out about a better method for TQM implementation at Queen Mary University of London. The study used the following variables:

(1) performance;

(2) planning;

(3) people;

(4) process;

(5) culture;

(6) communication; and

(7) commitment.

The main findings of the study are that the research and development as well as training and teaching were improved. At the same time, the TQM model helps to improve the quality of education and has suggested corrective and preventive actions to solve and eliminate problems in the system. In addition, the excellence for quality management model (EFQM) focused more on the impact on society, compared with the construction industry. Finally, the study found that the EFQM will help to deliver quality services to the customers.

4. Research methodology

TQM has been used by different organizations around the world as a good approach for ensuring high-quality work, and their results are convincing examples that could conceivably ensure the acceptance or adoption by Oman's MOJ management. TQM in Oman's MOJ will serve to help increase productivity and improve employees' skills, including better relationships with customers. Moreover, TQM will help to improve the

work efficiency through good control of its resources. Moreover, the adoption of the TQM model will help to make it useful for Oman's MOJ. Therefore, some new variables have been included based on the specific needs for the MOJ to meet this research designed inputs requirements for expected outcome from the framework. Hence, the new framework for the current study is as follows.

The dependent variable of this framework is the TQM model's effect on the performance of MOJ and the independent variables are as follows: customer focused performance, team building, system tools and techniques, employee management, learning, continuous improvement, top management commitment (TMC), employee empowerment (EE), work results and problem-solving (PS) techniques. Based on above discussion, we present the following hypothesis:

H1. Customer focused performance has a positive effect on WP.

Customer focused performance is one of the most important factors of TQM, and most studies on it recommend that the customer must be the most important factor in a TQM system. Furthermore, most researchers use customer focused performance or customer satisfaction and WP as two of the main factors to achieve the TQM approach in the organization. In this respect, Silva *et al.* (2014) noticed that new customer's needs and expectations can be reached through customer focus in most organizations and stated that customer value can be create through meeting their changing needs:

H2. Teamwork has a positive effect on WP.

The main focus of this section is to explain the importance of team building for WP, while, at the same time, to explain the effect of it on WP on the time of TQM implementation. Most researchers believe that TQM must be group work and that without employee co-operation, it will not succeed. Consequently, team building is an effective way to build a strong group and can drive TQM to improve an organization's performance. In this respect, Ihtesham *et al.* (2010) used communication as a variable to achieve TQM implementation, and they found out that stronger relationships among organization employees will support it to improve WP. Likewise, teamwork was used for the employees' participation in decision making. In this regard, Thamizhmanii and Hasan (2010) stated that teamwork is used to achieve employees' participation in most of an organization's work, and it is used as an important factor when studying TQM implementation for improving an organization's performance:

H3. System tools and techniques of work have a positive influence on WP.

The main goal of this part is to find out the relationship between system tools and techniques and WP. As previously mentioned, TQM is an approach utilized to improve organization performance, and this improvement supports new systems or processes:

H4. Employees management has a positive effect on WP.

The objective of this part is to find out the effect of employees' management on WP. As it has been stated in the literature review, most researchers agreed that the TQM approach used employees' management as a main factor for success:

H5. Learning has a positive influence on WP.

The idea here is to illustrate the learning effect on WP. As it mentioned in the literature review, most of the researchers agreed that the TQM approach improved most organization's performance. At the same time, they also agreed that TQM implementation needs a thorough training program for employees to be successful. Furthermore, most researchers agreed that

learning must be the first step of TQM implementation and believed that knowledge will change employee beliefs about TQM effect on WP:

H6. Continuous improvement has a positive effect on WP.

Continuous improvement is associated with an organization under improvement during TQM implementation. Accordingly, a TQM system or approach uses this to support an organization to improve its performance at any time. Furthermore, some researchers agree that the continuous improvement factor supported the TQM approach to have more of an effect on WP:

H7. TMC has a positive effect on WP.

The idea of this section is to explain the effect of TMC on WP. As mentioned in the literature review, most researchers agreed that top management is the most important factor that has a direct effect on TQM implementation and stated that TQM approach may not be successful without top management support. Past studies found that the TQM approach needs to include all of an organization's employees, and this must be supported by top management. Furthermore, researchers agreed that TQM must receive financial support from top management:

H8. Employees empowerment has a positive influence on WP.

EE factor supports and encourages employees to positively participate in WP. Subsequently, this part will explore the relationship between EE and WP. Furthermore, most researchers agreed that EE is an important factor of TQM and that TQM implementation has a direct effect on WP:

H9. Work result has a positive effect on WP.

The main concept of this section is to explain the effect of work results on WP. It was stated in the literature review that most researchers agreed that TQM results need to be balanced if they are to improve organization WP. Furthermore, most studies used auditing strategies to balance the results of the TQM. Therefore, most researchers agreed that the quality of the result is an important factor to evaluate WP:

H10. PS techniques have a positive influence on WP.

TQM is a philosophy designed to reduce work defects. Consequently, solving work problems needs to have techniques that must be prepared by the TQM group. Moreover, some researchers agreed that TQM implementation has a direct effect on WP and also agreed that process management should be supported to solve any work problems that occur. This means that management must constantly use techniques to solve work problems. Therefore, systematic process factors support TQM implementation to improve WP.

4.1 The modified model

The differences between the current model and the one by Kakkar and Narag's (2007) are that the current model adds variables which help to achieve the research objectives; these variables will help to improve the management system of Oman's MOJ and will include system tools and techniques such as learning, continues improvement, TMC, employees' empowerment, work results and PS techniques. The main idea behind the current modified model is to focus on customer satisfaction through teamwork, and the right system tools and techniques are required. Meanwhile, the employees should be well managed and should have learned the TQM philosophy to understand the meaning of the continuous improvement process. Likewise, TMC should let the employees participate in decision making through EE. Subsequently, the Oman's MOJ needs to check the work results and if there are any technical problems TQM can be used to solve them.

It should be noted that the variables previously mentioned have been used by different researchers such as Mohammed (2010), Wen *et al.* (2009), Thaddeus *et al.* (2008), Yahaya *et al.* (2007), Maryam (2007), Sitalakshmi (2007), Quek and Shai'ri (2003), Chapman and AL-Khawaldeh (2002) and Brah *et al.* (2000). These factors will guide the study to achieve the objectives of the research. For example, to investigate the impact of TQM implementation in the MOJ's performance, this objective has a relationship with testing of current framework. At the same time, the right system tools and techniques should be selected through the teamwork involved in TQM and by all employees of the MOJ, as these are related to objectives two and three. The final objective is to formulate the TQM framework, and this will be achieved through the current framework.

4.2 Literature reviewed contribution

Here are the different types of contribution:

(1) The factors used by past studies support the current study in selecting the suitable factors, which will help in the development and implementation of the new framework. The factors include customer satisfaction, TMC, employees' participations and continuous improvement.

(2) Since the above factors have been successfully used by different studies during the implementation of TQM into an organization, the current study will also apply them similarly.

(3) The different studies frameworks have contributed to improve the modified model used in the current study.

(4) The significant output generated by past studies helps to suggest TQM implementation in MOJ.

4.3 Research design and procedures

Examining TQM generally entails long-term study, and many researchers have used different frameworks of TQM. Accordingly, many of the studies have used different methods, according to the best way of collecting data. This means that the data collection selected method is based on its contribution to achieving the objectives of the research. Moreover, a data collection method contribution should save time and cost more than other contribution justifications. The current study selected a mixed method involving both quantitative and qualitative methods purposely to have accurate data and solve the problem of lacking information. Furthermore, a TQM study provides different types of research designs, and each will be selected according to research needs. For example, Kakkar and Narag (2007) used quantitative method to collect data from Indian organizations and tried to have more participants in the study. Maryam (2007) used qualitative and quantitative methods to have participants who were both employers and employees. However, TQM researchers used different research methods to support their model implementation. Finally, more participants' involvement will help to have better results based on data collected.

4.4 Research questions

RQ1. Do TQM constructs have a direct effect on WP of MOJ?

RQ2. What is the relationship between customer focused performance and WP of MOJ?

RQ3. What is the relationship between appropriate teamwork and WP of MOJ?

RQ4. What is the relationship between system tools and techniques and WP of MOJ?

RQ5. What is the relationship between employee management and WP of MOJ?

RQ6. What is the relationship between learning and WP of MOJ?

RQ7. What is the relationship between continuous improvement and WP of MOJ?

RQ8. What is the relationship between TMC and WP of MOJ?

RQ9. What is the relationship between EE and WP of MOJ?

RQ10. What is the relationship between work results and WP of MOJ?

RQ11. What is the relationship between PS techniques and WP of MOJ?

RQ12. Does the application of the appropriate TQM framework solve WP problems of MOJ?

4.5 Research objectives

The main objective of this study is to investigate the effect of TQM on WP of Oman's MOJ through employees' opinions and participation in the current study. Therefore, this objective will be supported by the following specific objectives to be achieved:

(1) to study the effect of TQM implementation on WP of Oman's MOJ;

(2) to study the role of customer focused performance on WP of Oman's MOJ;

(3) to study the role of team building on WP of Oman's MOJ;

(4) to study the role of system tools and techniques on WP of Oman's MOJ;

(5) to study the role of employee management on WP of Oman's MOJ;

(6) to study the role of learning on WP of Oman's MOJ;

(7) to study the role of continuous improvement on WP of Oman's MOJ;

(8) to study the role of TMC on WP of Oman's MOJ;

(9) to study the role of EE on WP of Oman's MOJ;

(10) to study the role of work results on WP of Oman's MOJ;

(11) to study the role of PS techniques on WP of Oman's MOJ; and

(12) to study the effect of appropriate TQM framework on WP of Oman's MOJ.

4.6 Research hypotheses development

H1. Customer focused performance has a positive effect on WP.

H2. Teamwork has a positive effect on WP.

H3. System tools and techniques of work have a positive influence on WP.

H4. Employees management has a positive effect on WP.

H5. Learning has a positive influence on WP.

H6. Continuous improvement has a positive effect on WP.

H7. TMC has a positive effect on WP.

H8. Employees empowerment has a positive influence on WP.

H9. Work result has a positive effect on WP.

H10. PS techniques have a positive influence on WP.

4.7 The population of the study

This section is related to the selection of population of participants. Therefore, this selection targeted a group of people who are working in Oman's MOJ and had good experienced about the existing management system of Oman's MOJ. Meanwhile, this group of people was selected randomly to examine their ideas regarding a particular problem. Thus, their opinions clarified the real need for a TQM implementation in Oman's MOJ.

4.8 Sample size determination

According to Sekaran (2005), sample sizes larger than 30 and less than 500 are appropriate for most research. Sampling is important factor to support survey success. Thus, much of the literature involves higher sampling numbers to help get more feedback. Therefore, the current study distributed enough questionnaires to get more feedback, and the type of sampling used is simple random sampling. As an example of a similar case, Maryam (2007) used 320 questionnaires and got feedback from 286. This illustration motivated the current study to create a questionnaire targeting more participants to prevent the problem of limited feedback. Additionally, Mohammed (2010) explained in his study that he used 400 participants as simple size and received 300 questionnaires back, which represented 75 percent response rate. Similarly, Krit *et al.* (2006) used 767 questionnaires, and they received 728 questionnaires, which represented 94.9 percent response rate. Furthermore, from the literature review, it can be understood that a sampling technique is different from one study to another.

Due to the definition of the different types of sampling, the current study used simple random sampling, and the subject of TQM includes everyone in the organization. In fact, this sampling model is related to the participants who have the core ideas or information targeted by the study; moreover, there is no difference between them. Thus, each one will help to give some important information to the research. Therefore, the questionnaire was administered to 500 participants with a cover letter that explained the objective of the study. A total of 370 filled questionnaires were received, a 74 percent response rate, and 320 questionnaires were used in data analysis. That means that 50 questionnaires were incomplete, and the study had 130 missing questionnaires.

4.9 Data collection method

It has been mentioned that two methods (structured questionnaire and structured interview) were applied for data collection in this study. A structured question is that which readily identifies the set of response alternatives and the response format. Moreover, a structured interview is based on multiple-choice questions, dichotomous or scale (Naresh, 2012). The current research questionnaire consists of three main parts. The first part is about personal information, for example, occupation, education level and experience of work. Part II contained variables of WPOOMOJ new model, and they are as follows: TQM effect on the WP of Oman's MOJ (three items), customer focused performance (six items), team building (four items), system tools and techniques (six items), employees management (eight items), learning (five items), continuous improvement (four items), TMC (four items), EE (four items), work results (three items) and PS techniques (four items). The total questions in Part II are 51. Part III is based on open questions, and it contained three questions about WPOOMOJ model implementation into MOJ. The idea of part three is to get an open opinion of associates about WPOOMOJ model implementation into MOJ.

5. Analysis and results

According to Kakkar and Narag (2007), the reliability test was initially designed by Cronbach (1951). In the current pilot study, with testing of 110 questionnaires, $n = 51$ and

Cronbach's α is 0.946. Thus, the reliability levels are at the high range extent of the scales used for contributing variables. According to Field (2009), Cronbach's α value of 0.7 to 0.8 is an acceptable value, and a great number of items would lead to more reliability. According to Brah *et al.* (2000) instead, 0.70 is the minimum acceptability value for α.

Furthermore, Cronbach's α value of WP of Oman's MOJ was 0.605, and this value is recommended as an unaccepted value. Moreover, customer focused performance had Cronbach's α value of 0.730, and this value recommended as an accepted value. Dewhurst *et al.* (1999) stated that customer relationship related to the TQM program. To this note, Chapman and AL-Khawaldeh (2002) got Cronbach's α value of 88.97 percent for customer satisfaction. Also, Quek and Shai'ri (2003) found out that customer satisfaction and feedback α value was 0.706 which is close to the current study result. Then, the Cronbach's α value of team building was 0.662, and this was recommended as a low value. Consequently, this scenario took place in a study performed by Mohammed (2010) that stated employee's fulfillment α value was 0.675. According to Thamizhmanii and Hasan (2010), a team of employees is the best way to achieve an organization's goal. Mohammed (2010) stated that employee's collaboration can be achieved through their participation in teamwork. Furthermore, the α result of system tools and techniques was 0.731, and according to Mohammed (2010), the α value of process management was 0.911, as he stated that process management means using of tools and procedures to improve work process.

Correspondingly, the α value of employee management was 0.864, and this value is recommended as an accepted value. In this regard, Quek and Shai'ri (2003) illustrated that employee participation had an α value of 0.772 and Chapman and AL-Khawaldeh (2002) got the α value of employee participation of 88.50 percent. Then, the α value of learning was 0.787, and this value is recommended as an accepted value. According to Chapman and AL-Khawaldeh (2002), education and training had an α value of 82.31 percent, and Mohammed (2010) concluded that the α value for learning was 0.908. It should be noted that continuous improvement had an α value of 0.764, which is recommended as the accepted value. Moreover, Quek and Shai'ri (2003) got an α value for continuous improvement of 0.706, and Mohammed (2010) also got an α value for continues improvement of 0.842. Meanwhile, TMC had an α value of 0.807, which is recommended as an accepted value. Mohammed (2010) got an α value for visionary leadership of 0.853, and this value is close to the current study's value. Table I showed that the reliability of an employee's empowerment had an α value of 0.608, and this value is considered an unacceptable value. Consequently, this scenario took place in a study performed by Mohammed (2010) that revealed that employee's fulfillment had an α value of 0.675. The α value for work result was 0.538, and this finding was revealed as an unacceptable value. PS techniques had an α value of 0.753, and this was recommended

Factors	No. of items	Cronbach's α
WPOOMOJ	3	0.605
CFP	6	0.730
TB	4	0.662
STT	6	0.731
EM	8	0.864
L	5	0.787
CI	4	0.764
TMC	4	0.807
EE	4	0.608
WR	3	0.538
PST	4	0.753
Total	51	0.946

Table I.
Reliability test

as an accepted value, but some studies used the unity of purpose variable, and this related to control the work problem and achieve the objective. Meanwhile, Chipman and AL-Khawaldeh (2002) stated that the unity of purpose had an α value of 78.71 percent. However, the reliability of the current study's results is considered acceptable, and there are only two factors that have value below 0.7. Therefore, it means that the reliability of the questionnaire is high for a pilot study.

6. Structural equation modeling (partial least squares (PLS))

The current study used SEM (PLS) analysis to test the hypotheses. Therefore, it has used measurement model and structural model. To this note, the measurement model shows the relationship between constructs and the variables indicators, and the structural model shows the relationship between variables (Hair *et al.*, 2017).

7. Assessment of measurement model

As previously mentioned, the measurement model is the first step of smart PLS analysis, and it begins to establish the reliability and validity. In this regard, Silva *et al.* (2014) stated that measurement model evaluation is made in terms of indicator reliability, internal consistency reliability, convergent validity and discriminant validity. Therefore, in the current data analysis, whole constructs were analyzed in reflective model, and formative models did not have any meaning in this analysis. Meanwhile, Silva *et al.* (2014) reported that standardized indicator loadings were used to examine the individual item reliability, and the loading accepted value is 0.7. They stated that the measurement model was used to test the indicator reliability and validity; reliability was assessed by testing the loading of constructs, and it was seen that variables loadings should be greater than 0.7 while smart PLS was utilized and the measurement model used for the assessment and reliability of factors and structural model assessment. Consequently, it was found that the loadings of such TQM factors for items QOHRI was 0.682 and QOHR2 was 0.628, and the current study has got results that were similar to this study. The current study's loading table shows that most of the values are higher than 0.7, and the loadings exceptions are for system tools and techniques, 0.667 for item Q18; continuous improvement, 0.684 for item Q35; and employee management, 0.673, 0.681, 0.697 and 0.673 for items Q21, Q22, Q26 and Q27, respectively. Moreover, customer focused performance was 0.682 and 0.674 for items Q6 and Q9, respectively. These are in line with the study undertaken by Daniel and Micaele (2009) where they got a loading result of such factors items close to 0.7, such as continuous improvement activities 0.67, statistical process control 0.64, total productive maintenance 0.65 and quality product 0.49.

Meanwhile, Ramayah *et al.* (2014) stated that the loading value for all items recommended that it should not be less than 0.6, but this is different to the value proposed by Hair *et al.* (2017) who recommended 0.7. Therefore, the abovementioned study used a smart PLS analysis to achieve a loading value of 0.661. At the same time, Young and Joo (2014) got loading values of 0.659 for HM3 and 0.570 for IA3. This is in line with the study undertaken by Silva *et al.* (2014) who found a result of less than 0.7 for such items. Therefore, current study followed Hair's *et al.* (2017) recommended value for loading of more than 0.7.

It should be recalled that the composite reliability (CR) analysis found a construct internal consistency (Hair *et al.*, 2017). Subsequently, the current study used the CR formula by Hair *et al.* (2017) and stated that the CR recommended value is 0.7. Moreover, Ramayah *et al.* (2014) mentioned that measurements need to be reliable during using Cronbach αs with CR. Therefore, Hair *et al.* (2017) stated that the accepted value of Cronbach $\alpha$is 0.7. In addition, Silva *et al.* (2014) stated that composite reliabilities accepted value is 0.7 and got minimum value for CR at 0.800. Likewise, Ramayah *et al.* (2014) obtained the value of CR for one factor as 0.781 and stated that the measurements are reliable. On the other hand,

Young and Joo (2014) mentioned that CR accepted value is 0.70, and they got a value more than 0.70 for their TQM factors. Accordingly, the current study got a value for CR of more than 0.7 for the entire factors, and this means that the measurement is reliable, such as 0.818 for CI, CFP = 0.808, EE = 0.742, EM = 0.859, $L = 0.829$, PST = 0.825, STT = 0.817 and TB = 0.790.

To this note, Cronbach's α is suggested to be more than 0.7 by Silva *et al.* (2014), and Ramayah *et al.* (2014) stated that Cronbach's α should be more than 0.6 except for job characteristics. Therefore, they have an α value for one factor at 0.580, and some results of the current study were less than 0.7, such as: CI = 0.682, CFP = 0.686, EE = 0.322, $L = 0.692$, PST = 0.688, TB = 0.602, WP = 0.649 and WR = 0.624. These were different than Hair's results (2014). The current study followed Hair's *et al.* (2017) example and got good results: EM = 0.803, STT = 0.705 and TMC = 0.772. As a result, it could be concluded that the measurement model is reliable.

Furthermore, Ramayah *et al.* (2014) reported that convergent validity is the value to which multiple means to measure the same concept are in agreement, and discriminant validity is the value to which items differentiate among constructs. Subsequently, the current study examines the average variance extracted (AVE) to uncover convergent and discriminant validity. Meanwhile, the current study is following the recommendation by Hair *et al.* (2017) that the value for AVE should be more than 0.5. Furthermore, Young and Joo (2014) mentioned that AVE should have a value more than 50 percent for acceptable convergence. Thus, they got a value of 0.601 for AVE for customer focus, and the current study got an AVE value of 0.514 for the same factor. Young and Joo got an AVE value of 0.682 for process management, and the current study got an AVE value of 0.529 for system tools and techniques. Therefore, the current study's AVE value for constructs range was 0.506 and 0.738, and the recommended value of AVE is 0.5 (Ramayah *et al.*, 2014). In addition, Silva *et al.* (2014) stated that the AVE value should not be less than 0.5 and got a minimum AVE value of 0.555. Therefore, the current study has a AVE value range of 0.506 to 0.738, and these are recommended values. It should be recalled that Silva *et al.* (2014) stated that multiple measures should explain the convergent validity. Meanwhile, the convergent validity access needs to calculate the AVE and composite reliabilities. They mentioned that the AVE value should be more than 0.5. Therefore, current study obtained an accepted value for AVE as follows: CI = 0.602, CFP = 0.514, EE = 0.593, EM = 0.506, L = 0.618, PST = 0.611, STT = 0.529, TB = 0.557, TMC = 0.586, WP = 0.738 and WR = 0.571 (Table II).

It should be noted that Ramayah *et al.* (2014) stated that discriminant validity is the operation required to measure the differences among constructs or measure distinct concepts. Sliva *et al.* (2014) noticed that the discriminant validity shared variance should be compared among the latent variables and stated that the square root of AVE should be better than the correlation between constructs. Likewise, they stated that the discriminant validity can be examined through factor loadings of each indicator using the approach by Hair *et al.* (2017) approach. As a result, Table III shows factor loading to be higher, and this satisfied all the items included in the model.

8. Assessing structural model

The result of measurement analysis supported to confirm that the constructs measures are reliable and valid, and the assessment of the structural model is the next step of smart PLS. This assessment involves the model's predictive capabilities and the relationship between factors.

9. Coefficient of determination (R^2 value)

Ramayah *et al.* (2014) stated that path coefficient and the R^2 value explain the power of data support and hypothesized model. Therefore, Figure 1 shows the structural model

Construct	Items	Factor loadings	Cronbach's GDI α	CR	AVE
Work performance	Q2	0.829			
	Q3	0.888	0.649	0.849	0.738
Customer focused performance	Q4	0.765	0.686	0.808	0.514
	Q5	0.743			
	Q6	0.682			
	Q9	0.674			
System tools and techniques	Q14	0.762	0.705	0.817	0.529
	Q16	0.748			
	Q18	0.667			
	Q19	0.728			
Team building	Q11	0.719			
	Q12	0.789	0.602	0.790	0.557
	Q13	0.728			
Employees management	Q21	0.673	0.803	0.859	0.506
	Q22	0.681			
	Q24	0.713			
	Q25	0.818			
	Q26	0.697			
	Q27	0.673			
Learning	Q28	0.789	0.692	0.829	0.618
	Q29	0.795			
	Q31	0.774			
Continuous improvement	Q33	0.811	0.682	0.818	0.602
	Q35	0.684			
	Q36	0.824			
Top management commitment	Q37	0.825	0.772	0.849	0.586
	Q38	0.719			
	Q39	0.701			
	Q40	0.810			
Employees empowerment	Q41	0.684	0.322	0.742	0.593
	Q43	0.847			
Work result	Q45	0.755	0.624	0.799	0.571
	Q46	0.746			
	Q47	0.765			
Problem-solving techniques	Q48	0.764	0.688	0.825	0.611
	Q49	0.774			
	Q51	0.805			

Table II.
Measurement summary

	CI	CFP	EE	EM	L	PST	STT	TB	TMC	WP	WR
CI	1.000										
CFP	0.397	1.000									
EE	0.502	0.315	1.000								
EM	0.605	0.338	0.515	1.000							
L	0.601	0.249	0.506	0.651	1.000						
PST	0.518	0.350	0.445	0.538	0.452	1.000					
STT	0.492	0.424	0.326	0.524	0.392	0.516	1.000				
TB	0.345	0.387	0.404	0.526	0.347	0.437	0.432	1.000			
TMC	0.540	0.403	0.428	0.552	0.432	0.543	0.532	0.477	1.000		
WP	0.306	0.443	0.301	0.415	0.313	0.271	0.342	0.364	0.323	1.000	
WR	0.460	0.371	0.450	0.458	0.370	0.498	0.448	0.389	0.470	0.255	1.000

Table III.
Discriminant validity

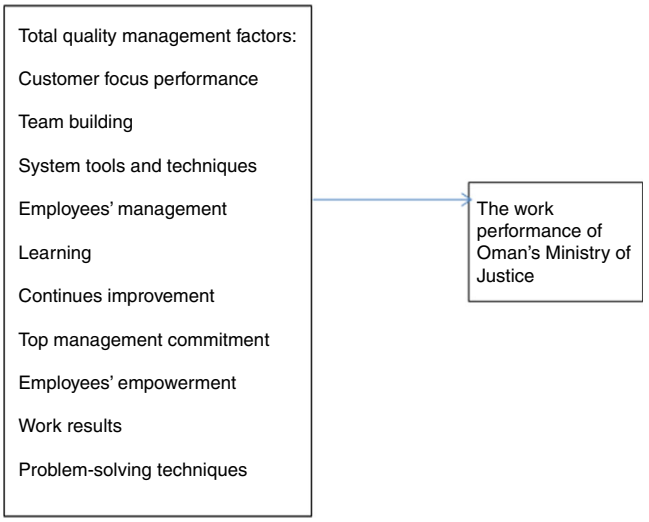

Figure 1.
New model for Oman's Ministry of Justice

of current study. The model summarized the ten hypotheses that explained the relationship between TQM constructs with WP. Silva *et al.* (2014) stated that a structural model was used to support the conceptual model and hypotheses and that the first value needs to check its R^2. Moreover, the R^2 should be more than or equal to 10 percent, and they got value of 49 percent for R^2. In the current study, the value of R^2 was 29 percent for the WP as the depended variable. That means, the R^2 of the current study model is 29 percent, and the WP is explained by 29 percent.

10. Direct effect

The structural model explains the strong relationships between the factors in the model and the need for analysis path coefficients and the R^2 value (Ramayah *et al.*, 2014). Some of the *t*-values are less than 1.97 for such factors, for example, 0.298. on the other hand, Silva *et al.* (2014) also got *t*-values of less than 1.96 for some constructs, such as *H3* – 1.017, *H4* – 0.356 and *H7* – 1.191. Table IV illustrates the structural analysis for the constructs relations, and Figure 2 shows results in graphical representation. Meanwhile, Daniel (2005) stated that the structural model related to the analysis of the relationship between two variables. Therefore, the current study found that some of the TQM variables has a significant relationship with WP such as follows: customer focused performance has a significant

Hypothesis	Relationships	Path coefficients	SD	*t*-Value	Decision
H1	CFP → WP	0.313	0.097	3.236	Supported
H2	TB → WP	0.103	0.068	1.510	Not supported
H3	STT → WP	0.075	0.077	0.877	Not supported
H4	EM → WP	0.213	0.092	2.339	Supported
H5	L → WP	0.066	0.072	0.896	Not supported
H6	CI → WP	−0.047	0.078	0.595	Not supported
H7	TMC → WP	0.010	0.084	0.143	Not supported
H8	EE → WP	0.052	0.065	0.792	Not supported
H9	WR → WP	−0.038	0.079	0.460	Not supported
H10	PST → WP	-0.055	0.072	0.731	Not supported

Table IV.
Path coefficients and hypotheses testing (direct effect)

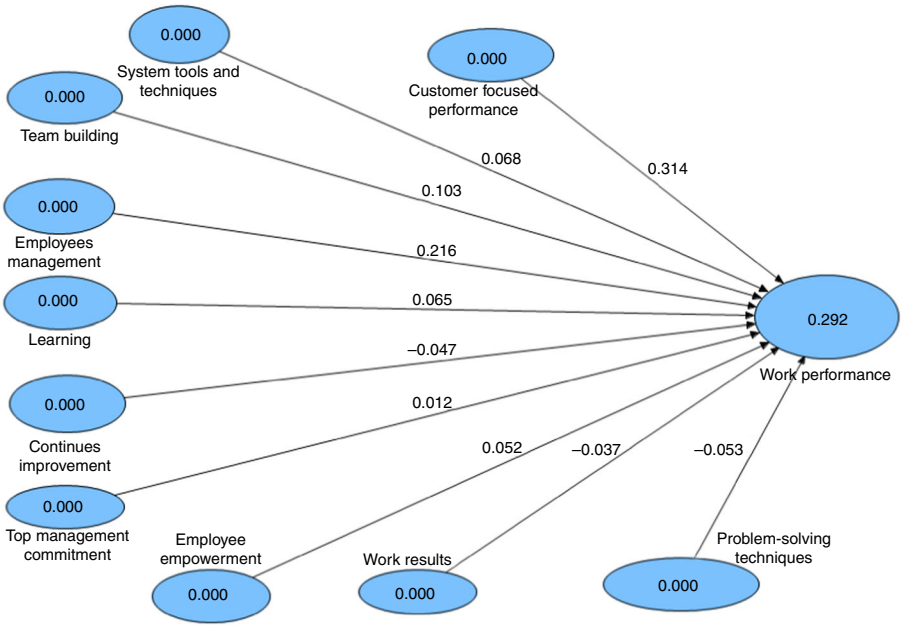

Figure 2.
Structural model

relationship with WP as represented by *t*-value of 3.237, and employee management has a significant relationship with WP through a *t*-value result of 2.339. On the other hand, the current study structural model found an insignificant relationship between some TQM variables with WP such as follows: tools and techniques had *t*-value of 0.878 and team building had *t*-value of 1.510. In addition, *t*-value for learning was 0.896, for continuous improvement was 0.596, for TMC was 0.143, for employee's empowerment was 0.793, for work results was 0.460 and for PS techniques was 0.731, and this difference can be justified as the TQM is not implemented in Oman's MOJ, as the feedback was based on intention to use to TQM.

10.1 Interview questionnaire findings

Here is the interview questionnaire that was used for data collection. It has been discussed in Chapter 3 where it clearly stated that its main idea is to enable collecting more ideas about adopting a WPOOMOJ model. It should be noted that interviewees were selected randomly and the idea of this selection was to get different data from different levels of employers and employees. According to Maryam (2007), interviewees can explore views of some key personnel for any study, and they can illustrate their ideas to succeed with any model in an organization. This study selected the structured interview model as stated in Chapter 3, and the employees' selection was made randomly. Accordingly, there were employers and employees in the interview, and the study did not impose any conditions for candidates' selection. In addition, interviewees were free to express their ideas about implementing the WPOOMOJ model in Oman's MOJ.

The following are the questions used for the interview:

(1) Sir/Madam, which part of the MOJ needs to be developed in your opinion?

(2) Do you think that TQM will help improve the management system of the MOJ?

(3) Please, what is your suggestion to TQM implementation in the MOJ?

(4) Could you state Sir/Madam, what are your expectations from adopting /implementing TQM in the MOJ system improvement?

(5) Please, what will be your contribution in TQM implementation in the MOJ?

(6) Overall, are there any other issues that you would like to suggest or highlight for this project?

The following table shows information of the interview candidates' title (Table V).

In the matter of the length of the interviews, the candidates were given a choice of their preference for interview time and offered different time slots based on their study level. This study found that educated candidates have more information, and ideas while semi-educated candidates gave short answers. Hence, the time for each interview varied between 15 and 30 minutes. Furthermore, the current study found out that TQM is a new topic in Oman, and only a few candidates had any idea about it. Consequently, other difficulties faced in this study were the results of interviews, which varied greatly. Another point to note is that most of the candidates agreed that Oman's MOJ management system work is a traditional system which has been unsatisfactory to both the employers and employees. Thus, when asked about the development needed in the management system of MOJ, they all agreed on the following issues within the traditional system: it needed a connection channel with customers, employees do not have clear training program, performance of MOJ did not control in clear system, tools of work need to develop and the dealing of top management with employees needs to be developed.

One of the candidates who has seven years of experience in the MOJ as a management employee stated that the MOJ needs to have a development work system because the traditional system cannot control work pressure and the current management has kept the work at the same routine work for long time. He stated that the current system did not support the MOJ developing its relationship with customers and did not allow an opportunity for developing work tools. At the same time, one candidate, a supervisor of a secretary for five years, stated that the MOJ is serving people in justice section but did not train its employees to effectively deal with customers. He stated that work tools need to be developed, and top management needs to use an open-door system with employees. Furthermore, one candidate working as supervisor for three years stated that employee training needs to be developed to increase the training program of employees understanding of its importance and needs and customer's participation in the management system needs to be developed, including employee motivation work tools.

11. Conclusion and implications

This study contributes to the available literature in terms of methods used by employing TQM through filling the gaps in the past study of Kakkar and Narag, 2007 that ignored the significant variables such as system tools and techniques, learning, continues improvement, TMC, employees' empowerment, work results and PS techniques of TQM efficiency model.

Customer focused performance is an important factor that has a direct relationship with WP. According to Salaheldin (2009), an organization needs to understand its customer's needs and to prepare its performance to satisfy customers. He selected customer orientation and customer knowledge as important factors in his study. Therefore, customer focused performance is an important factor to improve the WP of the MOJ, and it needs to prepare its performance to support customer satisfaction. At the same time, teamwork is an important factor in any TQM implementation and has direct effect on WP. In this respect, Ihtesham *et al.* (2010) used communication as a variable to achieve TQM implementation and they found that stronger relationships among organization employees will support to improve their WP and that there is

No	Job title	Years of experience
1	Administrative employee	26 years
2	Administrative employee	7 years
3	Administrative employee	12 years
4	Administrative employee	5 years
5	Supervisor	5 years
6	Supervisor	3 years
7	Manager	14 years
8	Supervisor	39 years
9	Administrative employee	8 years
10	Administrative employee	14 years
11	Administrative employee	5 years
12	Supervisor	11 years
13	Accountant	One year and 5 months
14	Administrative employee	2 years
15	Accountant	One year and 6 months
16	Administrative employee	One year and 6 months
17	Supervisor	30 years
18	Administrative employee	1 year
19	Manager	12 years
20	Administrative employee	5 months
21	Administrative employee	5 years
22	Manager	25 years
23	Administrative employee	9 years
24	Administrative employee	28 years
25	Administrative employee	3 years
26	Administrative employee	One year and 2 months
27	Administrative employee	3 years
28	Manager	11 years
29	Manager	23 years
30	Supervisor	30 years
31	Supervisor	35 years
32	Supervisor	28 years
33	Supervisor	7 years
34	Administrative employee	2 years
35	Administrative employee	7 years
36	Administrative employee	25 years
37	Social researcher	3 years
38	Administrative employee	4 years
39	Accountant	4 years
40	Accountant	4 years
41	Supervisor	20 years
42	Administrative employee	12 years
43	Administrative employee	20 years
44	Administrative employee	4 years
45	Administrative employee	3 months
46	Administrative employee	2 years and 3 months
47	Administrative employee	2 years and 3 months
48	Translator	3 years
49	Administrative employee	1 year and 6 months
50	Administrative employee	6 years

Source: Current study quantitative analysis

Table V.
List of candidates interview

strong relationship between group work and WP. In the current study, the analysis found out that the relationship between teamwork and WP is insignificant.

It should be noted that TQM is an approach that uses different tools or techniques to improve WP. Michel *et al.* (2009) stated that an organization's system using the TQM approach had an effect on WP and that a quality system shifted an organization to work by a new working system and this affected WP. Meanwhile, Ismah *et al.* (2009) mentioned that TQM

implementation explained the relationship between system tools and techniques and WP. They found that the two factors have good relationship and supported TQM implementation in an organization. Consequently, the current study results found that the relationship between system tools and techniques was insignificant, but other studies, such as Bhaskar *et al.*'s (2011) considered it to be an important factor for adopting TQM in an organization. TQM dimensions improved WP by creating new work systems. Employee management is the most important factor that supports TQM implementation in any organization, and many studies use it as their basis, such as the research undertaken by Wen *et al.* (2009) who stated that human resources focus used as main dimension for organization performance and customer satisfaction. They found that there was a good relationship between human resources focus and organization performance. They found out that human resources focus supported TQM implementation and improved the performance to increase customer satisfaction. People management is the most important principle for TQM implementation, and this principle has a strong relationship with other TQM principles (Thaddeus *et al.*, 2008).

TQM implementation needs to have learning strategies for all of an organization's employees. Therefore, many past studies found that learning is the main factor required to have successful TQM implementation. Zakuan *et al.* (2008) stated that human resources development had a strong relationship with other TQM variables and that TQM practices have a positive effect on an organization's overall WP. They stated that an organization implemented TQM through human resources development in different sections of work, and this development improved the WP in satisfaction level for employees and customers. Consequently, Oman's MOJ needs to use learning or planning factor during TQM implementation and support the distribution of knowledge to all of the employees of the ministry. At the same time, CI is an important factor in any TQM study, and many of the researchers have used CI as important factor for TQM implementation, such as Yahaya *et al.* (2007) who stated that most organizations that adopted TQM did not face any problems while continuing to improve their WP. They reported that TQM organizations improved their financial performance more than organizations that did not use a TQM approach. Consequently, continuous improvement factor has a strong relationship with other TQM factors during TQM implementation for improving WP (Sitalakshmi, 2007).

The current study discussed that TMC is an important factor to improve the WP of any organization. Thus, the data analysis of the current study found an insignificant relationship between TMC and WP. Nonetheless, many of the studies on TQM have used TMC as an important factor to improve WP. Therefore, TMC is the main factor required to improve the WP of Oman's MOJ; this idea was supported by the findings of past studies reviewed in Chapter 2 as they stated that any TQM adoption needs to be supported by top management. Therefore, the TMC factor is related to the top management level rather than any other management level of the MOJ. Moreover, Sitalakshmi (2007) mentioned that the leadership factor has a good relationship with other TQM factors to improve an organization's performance. Also, EE (EE) and WP were insignificant, as many past studies have used EE as an important factor for TQM implementation, such as Sitalakshmi (2007) who stated that employees' participation has strong relationship with other TQM factors. He found that employees' participation related to giving employees more authority to control and lead their work and that it can increase the WP. Therefore, EE factor will support the MOJ to improve its employees' participation in WP by implementing TQM as a management system. Thus, in the review of Chapter 2, many researchers mentioned that WP will be affected by giving employees more authority. Meanwhile, Maryam (2007) noticed that EE has a strong relationship with WP. She stated that TQM implementation affected WP as one important factor. Therefore, most of the studies used employee's empowerment as an important factor of TQM to improve WP.

Work results have been an important factor in the current study; however, it has been found to be ultimately insignificant. On the one the hand, many studies on TQM mention that it is important to control the work result of any organization; for example, Zakuan *et al.* (2008) stated that quality result is an important factor for TQM implementation and found that the quality results affect WP through their relationship with other TQM factors. They saw that the effect of implementation of TQM on WP and quality results enhances an organization to control or improve the WP to get more better results. It should be noted that the MOJ needs to have results control, and this control supports it to improve WP. At the same time, PS is an important factor of any TQM study; therefore, the current study has used it to improve the WP of Oman's MOJ. On the other hand, the current study data analysis found out that PS has an insignificant relationship with WP. Meanwhile, several TQM studies reviewed in this study mentioned that PS is an important factor for successful TQM implementation. For example, Wen *et al.* (2009) used process management as one important factor for TQM implementation. They noticed that process management factor supported TQM implementation to positively affect WP. It should be recalled that PS techniques in management process are used to reduce work defects. Therefore, the MOJ needs to have good dealing with working toward PS. Furthermore, many researchers in Chapter 2 stated that PS is one of the main factors of TQM and will support an organization to decrease WP problems. Consequently, Thaddeus *et al.* (2008) used systematic process to build consistent management for WP, which means constant management is a strong technique needed to solve work problems. They stated that a systematic process factor supported TQM implementation to improve WP.

12. Limitations of the study

The current study focuses on solving the management system problem in Oman's MOJ. It has selected past studies related to TQM studies. However, the first limitation of this study is related to one management topic which is TQM's intention to be implemented, as TQM is not currently in place at Oman's MOJ. Hence, past studies reviewed for this research have been about TQM being implemented in those organizations. The second limitation of this study has been that the pilot study and the analysis of the main study were based on the intention to implement TQM to replace the current management system practice at Oman's MOJ. Likewise, the area of study has been one of the main limitations of this study. On the other hand, a moderated version of Kakkar and Narag's (2007) study considered suitable for Oman's MOJ has been one of this study's greatest strengths. One more limitation has been that the study has focused on the ministry's main services in justice area and not on all the activities.

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