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SOFT TQM ELEMENTS FOR DIGITAL TRANSFORMATION IN THE PUBLIC SECTOR

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The digital transformation of the public sector requires not only advanced modern technology but also good strategy and effective use of human factors. Additionally, quality management plays a crucial role in improving the performance and service quality of government organisations. This raises the question of how quality management could benefit digitalisation efforts and help the government to adapt in the era of digital technologies. However, the extant literature mostly focuses on the practice of quality management and the antecedents of digital transformation from the context of a private organisation, and only rarely from a public sector perspective. Therefore, this research seeks to understand and identify the soft TQM elements that can be applied in a public organisation to propel its digital transformation. The analysis was conducted based on a review of relevant papers published in this field. Deductive thematic analysis was employed to identify appropriate themes for this study. The findings identify five soft TQM elements: top management commitment and leadership, training and education, employee involvement, citizen focus and continuous improvement, all of which could positively impact a public organisation's digitalisation initiatives. The study aims to provide novel and relevant insights to assist government organisations in planning and carrying out digital transformations.

KEYWORDS:

digital transformation, public sector, quality management, Total Quality Management (TQM), soft TQM

INTRODUCTION

There has been a growing trend since the early 1990s to modernise and transform the inefficient and bureaucratic public sector to meet the current needs of society and allow it to advance in a highly globalised and competitive environment.¹ Digital technology is continually changing the face of public services, as are the ways in which governments utilise digital innovation to manage public service performance. From e-government to e-governance and digital government, there is a growing interest in leveraging information and communication technologies (ICT) to generate public value.² Digital technologies have transformed the public sector by affecting its applications, processes, culture, structure, responsibilities and the tasks of civil servants.³ Furthermore, technology plays a vital role in improving the product delivered by public sector bodies, their service quality and organisational performance,⁴ and that impact has never been as significant and disruptive as in the digital transformation process.⁵

The digital transformation has affected the entire value chain, the business models applied, the organisation and management, including by introducing new strategic objectives, building capabilities and enhancing agility.⁶ Implementing digital transformation technologies in public sector organisations brings many benefits, such as improved transparency and accountability, better access to government data, support for innovation, a responsive supply chain, improved government services, support for environmental initiatives, operational benefits and the encouragement of participation.⁷ However, public sector organisations face many barriers to implementing such digital transformations, because public governments lack various necessary resources, skills and competencies.⁸ A quality management (QM) approach may have the capacity to support the exploitation and exploration of an organisation's digitalisation initiative due to its involvement in strategic-level activities which can help to boost the levels of expertise required for driving and managing change.⁹

Nowadays, the technology landscape is more prosperous and promising than ever, coupled with the emergence of the latest machine and technology disruption, suggesting that there has been a new adaptation towards quality.¹⁰ In line with the current technological breakthrough, the quality concept has also gradually changed along with the technological revolution. Digitalisation requires a rethinking of quality approaches.

¹ KARYOTAKIS–MOUSTAKIS 2014: 30–44.

² AGOSTINO et al. 2022: 145–151.

³ TANGI et al. 2021: 1–10.

⁴ RADZIWILL 2018.

⁵ DIAS et al. 2022: 1312–1335.

⁶ CARVALHO et al. 2021: 341–346.

⁷ ALNUAIMI et al. 2022: 636–648.

⁸ FERRARIS et al. 2020: 1259–1280.

⁹ PONSIGNON et al. 2019: 17–34.

¹⁰ RADZIWILL 2018.

According to Elg et al.,¹¹ digitalisation has transformed the role of QM in organisations as digital solutions can provide technical quality products and services and improve customer interaction and internal processes. QM activities are similar to digitalisation in that they are not limited to one specific function in an organisation but may be spread across the whole organisation and its value-creation processes.¹²

Although digital transformation could bring numerous benefits to governments, there is little systematic evidence on how it impacts public administrations' day-to-day operations, their approach to digital transformation projects, or what results it could be expected to bring.¹³ Hence, it is worth investigating the integration of QM and the digitalisation process in the public sector. This is in line with government efforts to adopt quality management. Quality management has become a significant organisational trend in change management in the public sector.¹⁴ For example, Gomes et al.¹⁵ noted that, in order to inspire and promote more business-like operations in government agencies and state-owned enterprises, state and municipal agencies have sponsored intensive training programs in total quality management (TQM), continuous improvement, strategy, performance measurement, and project management for public-sector officials and staff.

Previous researchers have mainly focused on the private sector when investigating the potential of quality management as a catalyst for change management and enhanced performance.¹⁶ In contrast, the number of studies on applying quality management methods in the public sector remains limited and this field has not been adequately discussed. Therefore, this study aims to conduct a review that explicitly focuses on applying quality management methods to digital transformation in the public sector. In conducting the review, the authors were guided by the following main research question: What is the fundamental element of quality management that can be applied to implement digital transformation in the public sector effectively? Furthermore, the main focus of this paper is on the soft TQM elements' influence on digital transformation efforts in the public sector.

This paper is structured as follows: The first section presents the introduction and background of the study. Section 2 provides an overview of the total quality management concept and reviews the literature on soft TQM. Section 3 describes the research methodology. Section 4 presents the results of the review. Section 5 summarises and concludes the results of this paper.

¹¹ ELG et al. 2021: 990–1003.

¹² ELG et al. 2021: 990–1003.

¹³ MERGEL et al. 2019: 1–16.

¹⁴ STRINGHAM 2004: 182–211.

¹⁵ GOMES et al. 2019: 207–228.

¹⁶ BOON et al. 2005: 279–289; ALI-JOHL 2022: 608–620.

SOFT ELEMENTS OF QUALITY MANAGEMENT

Quality Management

The quality management approach was developed by Deming, Juran and Feigenbaum, focusing on customers, continuous improvement, teamwork and constant updates.¹⁷ Quality management is a method of achieving and sustaining high-quality results.¹⁸ The fundamental task of the quality management system is to control and manage the critical characteristics of products and services, thus improving customer satisfaction and reducing non-quality costs.¹⁹ Quality management has long been a key issue in both the private and public sectors and is applied in various service settings, including healthcare, digitally connected services and schooling.²⁰ More recently, Deleryd and Fundin²¹ have argued that the quest for quality has not always been about doing the right thing in the right way. The demand and focus of the operation should be shifted to develop and produce a solution in a sustainable way in which the end product is beneficial to society. Fundin, Backström and Johansson²² noted that it is crucial to revisit the concept of QM to explore the new possibilities of integrating it with current operations to achieve efficiency and effectiveness.

Global industry has entered the age of the fourth industrial revolution, known as Industry 4.0. The term Quality 4.0 emerged from the German industrialisation program – Industry 4.0, where the role of quality was predicted to evolve in the next two decades in response to the dispersal of digital technology.²³ Quality 4.0 refers to the connectivity and integration of systems to collect and analyse data and digitalise an organisation's operations.²⁴ Moreover, Quality 4.0 is a concept associated with the fourth industrial revolution, specifically the digitalisation of quality work in the context of Industry 4.0.²⁵ Quality has evolved to play a more significant role than its traditional meaning in an ever-changing context where quality professionals must adapt to the environment of high technology and innovation. Therefore, we can conclude that Quality 4.0 is an application of Industry 4.0 technologies to the quality and digitalisation of TQM and its effect on quality technology, processes and individuals.²⁶ Additionally, it is to be noted that Quality 4.0 is not only about the technology element in transforming the quality process.

¹⁷ BARBOSA et al. 2017: 438–449.

¹⁸ CARVALHO et al. 2021: 341–346.

¹⁹ CARVALHO et al. 2021: 341–346.

²⁰ FUNDIN et al. 2018: 125–137.

²¹ DELERYD–FUNDIN 2020: 1–17.

²² FUNDIN et al. 2021: 476–488.

²³ WATSON 2019: 24–30.

²⁴ FORERO–SISODIA 2020.

²⁵ FORERO–SISODIA 2020.

²⁶ CARVALHO et al. 2021: 341–346.

It also involves the large-scale transformation of culture, leadership, collaboration and compliance, and how to maximise an organisation's value.²⁷

Total Quality Management

Total Quality Management (TQM) refers to a management approach by an organisation that is centred on quality and based on the participation of all its members, aiming at long-term success through customer satisfaction and by bringing benefit to all the members of the organisation and to society.²⁸ Total quality management (TQM) often refers to a management philosophy that strives towards a continuous improvement of the quality of goods and services through the participation of all organisational levels and functions. Thus, the successful implementation of TQM methods largely depends on the genuine commitment of all the members of the organisation.²⁹ Although total quality management (TQM) became popular several decades ago and was once considered a management fad, it is still a significant force in research and practice due to its potential to promote service quality and organisational performance.³⁰

Since the early 1980s, TQM has gained tremendous popularity in the public sector in the United States. For this reason, in the 1990s, quality management increasingly began to be implemented in the public sector through reengineering efforts and became a significant organisational trend in change management in the public sector.³¹ Rodgers et al.³² noted that some quality management principles are equally relevant to all sectors, not limited to the private sector, including the public service sector. Thus, over the last two decades, there have been a growing trend for organisations worldwide to actively adopt TQM methods in some form.³³

Furthermore, to ensure successful TQM implementation, extensive studies have been conducted to identify the critical elements of TQM. TQM elements are usually associated with and classified into two broad categories: soft TQM and hard TQM.³⁴ According to Sila,³⁵ the TQM construct can be measured by taking into account seven general practices: strategic planning, leadership, information and analysis, human resource management (HRM), supplier management and process management. Additionally, Georgiev and Ohtaki³⁶ identified twelve critical success factors of quality management, namely: top management

²⁷ DIAS et al. 2022: 1312–1335.

²⁸ HELLSTEN–KLEFSJÖ 2000: 238–244.

²⁹ DUBEY–GUNASEKARAN 2015: 371–382.

³⁰ HWANG et al. 2020: 147–158.

³¹ STRINGHAM 2004: 182–211.

³² RODGERS et al. 2021: 528–540.

³³ RAHMAN 2004: 411–422.

³⁴ DAUD–YUSOFF 2011: 17–22.

³⁵ SILA 2007: 83–109.

³⁶ GEORGIEV–OHTAKI 2020: 473–498.

involvement and leadership, quality policy and strategy, middle management involvement and support, employee involvement and empowerment, teamwork, training and education, staff evaluation, reward and recognition, communication management, customer focus, supplier management and CSR focus. Furthermore, the soft TQM aspect has proven to have a significant impact on organisations and innovation performance in both the private and public sectors.³⁷

Soft TQM

Almost all definitions of TQM refer to its soft and hard sides.³⁸ The soft side is associated with management concepts and principles such as top management commitment, leadership and employee involvement.³⁹ Meanwhile, the hard aspect refers to quality improvement tools and techniques.⁴⁰ Management philosophy and intangible components are the main focus of the soft TQM dimension.⁴¹ The soft side of TQM usually deals with long-term issues that require an organisation's attention,⁴² including social and behavioural patterns and organisational aspects such as human resources development, employee empowerment, top management commitment/leadership, customer focus, education and training, strategic planning and people management.

To investigate the effectiveness of soft TQM aspects, extensive studies of various organisations in both the private and public sectors have been conducted, and these have proven that soft TQM practices have a positive impact on the organisation's innovation and performance (see Table 1). Table 1 illustrates that most studies on soft TQM aspects have focused on the private sector; only three studies, by Daud and Yusoff,⁴³ Gomes et al.⁴⁴ and Sciarelli et al.⁴⁵ were conducted in the public sector context. Hwang et al.⁴⁶ investigated the effects of soft TQM practices on employees' readiness for change. Data were collected from 8,417 survey responses from large IT service firms in South Korea. The findings suggested that soft TQM practices such as employee empowerment, teamwork, communication, employee training and appropriate leadership by top management enhance employees' readiness for change.

³⁷ ALI-JOHL 2022: 608–620; GOMES et al. 2019: 207–228.

³⁸ FOTOPoulos-PSOMAS 2009: 150–163.

³⁹ FOTOPoulos-PSOMAS 2009: 150–163.

⁴⁰ DAUD-YUSOFF 2011: 17–22.

⁴¹ GEORGIEV-OHTAKI 2020: 473–498.

⁴² FOTOPoulos-PSOMAS 2009: 150–163.

⁴³ DAUD-YUSOFF 2011: 17–22.

⁴⁴ GOMES et al. 2019: 207–228.

⁴⁵ SCIARELLI et al. 2020: 1349–1372.

⁴⁶ HWANG et al. 2020: 147–158.

Consequently, properly implementing TQM will increase organizational commitment and reduce employee turnover intention. Moreover, Dubey and Gunasekaran⁴⁷ conducted an empirical study to explore the soft TQM dimension and its impact on the performance of 220 cement manufacturing firms. The studies confirmed that soft TQM dimensions, including human resources, a quality culture, motivational leadership and relationship management significantly impact the performance of firms in the cement industry in India. Additionally, Ali and Johl⁴⁸ performed a study on Malaysian small and medium (SMEs) manufacturing companies to investigate the relationship between digital TQM or Quality 4.0 on the sustainable performance of the enterprises. The researchers found that soft TQM practices such as top management commitment/leadership, customer focus/customer involvement, and employee education and training positively influenced the sustainable (financial, social and environmental) performance of Malaysian small and medium (SMEs) manufacturing companies.

Table 1: Soft TQM studies

Authors	Context	Soft TQM variables	Dependent variable
Hwang et al. (2020)	IT service firm	Employee empowerment Communication Training Top management and leadership	Employees' readiness to change
Dubey and Gunasekaran (2015)	Manufacturing firm	Human resources (training) Quality culture Leadership Relationship management	Firm performances
Ali and Johl (2022)	Small and medium (SMEs) manufacturing firms	Top management commitment and leadership Customer focus Education and training	Sustainable performances
Fotopoulos and Psomas (2009)	ISO 9001:2000 certified company	Top management commitment Strategic quality planning Employee involvement Supplier management Customer focus Process orientation Continuous improvement Fact-based decision making Human resource development	Quality management result
Boon et al. (2005)	Semiconductor company	Top management Customer focus Education and training Organisation culture Employee participation Teamwork	Employee attitude

⁴⁷ DUBEY-GUNASEKARAN 2015: 371-382.

⁴⁸ ALI-JOHL 2022: 608-620.

Authors	Context	Soft TQM variables	Dependent variable
Daud and Yusoff (2011)	Government-linked companies	Top management leadership and commitment Strategic planning Customer focus Human Resource Management Supplier management	Knowledge management
Sciarelli et al. (2020)	Higher education institution	Top management Strategic planning People management Supplier management Student (customer) focus	Innovation and organisation performance
Aoun and Hasnan (2017)	Hospitals	People-based management Continuous improvement	Innovation skills
Gomes et al. (2019)	Local public sector municipalities	Customer focus Employee involvement Continuous improvement	Public sector project implementation
Kanapathy et al. (2017)	ISO 9000-certified manufacturing firms	Top management support Employee training Employee involvement	Innovation performances

Source: Compiled by the authors.

In a similar vein, Fotopoulos and Psomas⁴⁹ conducted an empirical study on 370 Greek companies to explore the roles of soft and hard TQM on quality management results. Their findings indicate that soft TQM elements such as top management commitment, strategic quality planning, employee involvement, supplier management, customer focus, process orientation, continuous improvement, fact-based decision-making and human resource development significantly influence quality management results compared to hard TQM practices. Another study, by Boon et al.,⁵⁰ investigated the effect of soft TQM practices on employees' attitudes within a large Malaysian semiconductor organisation. The findings revealed that soft TQM practices such as engagement by top management, customer focus, education and training, organisational culture, employee participation and teamwork positively influenced employees' attitudes, such as job involvement, career satisfaction and organisational commitment.

In addition, Daud and Yusoff⁵¹ performed a study to investigate soft and hard TQM practices on knowledge management processes in government-linked companies. Their findings showed that soft TQM aspects such as top management leadership and commitment, strategic planning, customer and market focus, HRM and involvement, and supplier management contribute more to knowledge management processes and consequently enhance the performance of organisations. Another study, by Sciarelli et al.⁵² explored the effect of hard and soft quality management on innovation and organisation performance

⁴⁹ FOTOPOULOS-PSOMAS 2009: 150–163.

⁵⁰ BOON et al. 2005: 279–289.

⁵¹ DAUD-YUSOFF 2011: 17–22.

⁵² SCIARELLI et al. 2020: 1349–1372.

in higher education institutions in Naples, Italy. The academic institutions adopted soft quality management practices such as top management support (the director's long-term commitment to QM philosophy), strategic planning (vision, mission and objectives align with needs and different expectations from different stakeholders), people management (recognising staff performance on quality, teamwork, training, staff involvement in the quality decision), supplier management (work closely and cooperatively with suppliers), and taking a student-focused approach (determining student needs and expectations and then fulfilling them). Based on the data collected from 356 respondents and analysis made using partial least squares structural equation modelling techniques (PLS-SEM), the findings of the research indicate that soft QM practices are related to hard practices. Moreover, soft TQM practices have a stronger impact on administrative innovation compared to hard ones. Both soft and hard QM practices positively affect performance.

Another study, conducted by Aoun and Hasnan,⁵³ examined the influence of soft TQM on the innovation skills of employees in Lebanese hospitals. The findings revealed that soft TQM influenced innovation skills through people-based management but not through continuous improvement. The researchers empirically proved that soft TQM is a significant tool that can be used to enhance innovation through the successful implementation of people-based management. Likewise, Gomes et al.⁵⁴ performed an empirical study on the key components of TQM, such as customer focus, employee involvement and continuous improvement. Data were collected from 211 Portuguese public officials with public-sector project management experiences. Their findings concluded that TQM components are beneficial during the planning and implementation stages of projects in the public sector.

Furthermore, Kanapathy et al.⁵⁵ studied 106 ISO 9000 manufacturers to explore the impact of soft and hard TQM practices on innovation performance. Their findings demonstrated that soft TQM plays a significant role in positively enhancing the innovation process, while the role of hard TQM was found to be insignificant. However, the hard TQM aspect makes a sufficient contribution to implementing process innovation. On the other hand, one study by Ong and Tan⁵⁶ investigating how soft TQM, agility and knowledge management are aligned to increase the organisational performance of electrical and electronics manufacturers in Malaysia came to different conclusions. Their findings revealed that soft TQM has no significant direct effect on organisational performance but has a strong relationship when mediated with knowledge management. Based on the literature review, we can conclude that the soft TQM aspect is a critical success factor (CSF) in enhancing the performance of an organisation (see Table 2).

⁵³ AOUN-HASNAN 2015: 1–11.

⁵⁴ GOMES et al. 2019: 207–228.

⁵⁵ KANAPATHY et al. 2017: 429–461.

⁵⁶ ONG-TAN 2022: 28–47.

Table 2: Soft CSFs of TQM

References	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Hwang et al. (2020)	X		X										X	X	
Dubey and Gunasekaran (2015)	X		X		X		X								
Ali and Johl (2022)	X	X	X												
Fotopoulos and Psomas (2009)	X	X		X	X	X		X		X		X			X
Boon et al. (2005)	X	X	X	X			X				X				
Daud and Yusoff (2011)	X	X			X	X				X					
Sciarelli et al. (2020)	X	X			X	X			X						
Aoun and Hasnan (2017)								X	X						
Gomes et al. (2019)		X		X				X							
Kanapathy et al. (2017)	X		X	X											

Note: 1 = Top management commitment and leadership; 2 = Customer focus; 3 = Training and education; 4 = Employees involvement; 5 = Supplier management; 6 = Strategic planning; 7 = Teamwork; 8 = Continuous improvement; 9 = People based management; 10 = Human resource development; 11 = Organisation culture; 12 = Process orientation; 13 = Communication; 14 = Employees empowerment; 15 = Fact-based decision making

Source: Compiled by the authors.

METHODOLOGY

Searches for relevant documents were conducted using main and enriched keywords such as *quality management, quality management in public sector, total quality management, total quality management in public sector, total quality management and public sector, TQM and e-government, TQM in public sector, TQM and public sector, digital transformation, digital transformation in public sector, soft TQM, Quality 4.0, Quality 4.0 and public sector*. The search process was run on selected leading databases (Scopus) and supporting databases (Google Scholar) based on the identified keywords. The Scopus database provides a comprehensive source of data (indexing more than 5,000 publishers), ensures the articles' quality, and has a multidisciplinary focus field.⁵⁷ Meanwhile, Google Scholar has the ability to produce enormous numbers of search results, and it is worth noting that there are 389 million documents available in the Google Scholar databases.⁵⁸ Moreover, only articles published in English are incorporated in the review to avoid confusion in understanding. The review documents comprise a wide range of documents, including books, chapters in books, journal papers and conference proceedings.

⁵⁷ GUSENBAUER-HADDAWAY 2020: 181-217.

⁵⁸ GUSENBAUER 2019: 177-214.

The data obtained were analysed based on deductive thematic analysis. According to Braun and Clark,⁵⁹ thematic analysis is described as a method for identifying, analysing and reporting data patterns (themes). It helps to organise and describe the selected data set in a detailed and rich manner. Thematic analysis is based on two approaches, inductive and deductive thematic analysis.⁶⁰ This study deployed a deductive or theoretical thematic analysis, whereby a deductive approach involves approaching the data with some preconceived themes expected. It is more explicitly analyst-driven and is driven by the researcher's theoretical or analytic interest in the area.

RESULTS

Quality management has become established as one of the most important discussion topics in modern management. Based on the literature review and a deductive thematic analysis conducted, we identified several significant aspects of soft TQM for the digital transformation process in the public sector, which are outlined below.

Top management commitment and leadership

Among the critical factors for the success of quality management programs, leadership is one of the most cited factors.⁶¹ Support by the leadership and top management, and their understanding of the digital transformation process, along with the extent to which they are willing to support its implementation within the organisation are essential to digital transformation. A study by Alshourah⁶² confirmed that leadership commitment and support for quality were found to have a significant effect on performance in Jordanian public hospitals. Leaders do not have to be technological wizards, but they must understand what can be accomplished at the intersection of the public sector and technology. They must be prepared to lead the way in conceptualising how technology can transform public sector strategy. The change produced by adopting digital technology will be rapid and intense, and the right leaders can boost the organisation's ability to advance in the digital transformation process.

Top management support is believed to be a vital factor in improving a system's usability by providing proper resources and acting to optimise the system in response to the feedback of the end-users.⁶³ Furthermore, we cannot deny the importance of management commitment because firms need the commitment and involvement of a manager to

⁵⁹ BRAUN-CLARKE 2006: 77-101.

⁶⁰ BRAUN-CLARKE 2006: 77-101.

⁶¹ BARBOSA et al. 2017: 438-449.

⁶² ALSHOURAH 2021: 67-76.

⁶³ ABU-SHANAB-BATAINEH 2016: 32-46.

actively encourage change, implement a culture of trust, and commit to change to “best practice”.⁶⁴ It can be argued that support from organisations makes employees feel fulfilled and satisfied with their jobs, and consequently, they tend to perform better in achieving customer satisfaction and winning customer loyalty.⁶⁵

Leadership, in this context, also refers to the ability of public managers to recognise the importance of organisational transformation in the successful implementation of new technologies, to understand its dimensions and support the necessary changes.⁶⁶ For instance, a successful e-government initiative in the public sector requires the commitment of political and administrative leaders to create a short and long-term e-government strategic plan, which involves a planning how to build a relationship with citizens and partners.⁶⁷ On top of that, top management leadership’s role as a helper in supporting knowledge management (KM) processes is vital for the development and enhancement of the collective learning ability in the organisation.⁶⁸ Kupper et al.⁶⁹ noted that the most important skills for quality management leaders today and in the future to enable the success of Quality 4.0 include competencies related to communication, change management, and strategic and long-term planning. Quality leaders also need soft interpersonal skills, like communication and social skills.⁷⁰ These skills reflect a leader’s essential role in creating a quality-centred culture across the organisation.

Furthermore, Kane et al.⁷¹ discovered that in a digitally maturing company, the employees are highly confident in their leader’s digital fluency. Digital fluency, in this case, does not demand a mastery of technologies. Instead, it requires leaders to have the ability to articulate the value of digital technology to the organisation’s future.

Sony and Douglas⁷² argue that Quality 4.0 requires more than transformation leadership. Instead, it requires a knowledge-oriented leadership which is keen on the learning and innovation concept. Abbas and Kumari⁷³ also noted that knowledge-oriented leaders could help to promote knowledge management practices in their organisations. That being said, top management should promote the culture of knowledge sharing and application without hesitating due to fear of losing their influence or power. Yussof⁷⁴ emphasised that management is responsible for training and retraining employees in new skills to keep pace with changes in the workplace.

⁶⁴ CARVALHO et al. 2021: 341–346.

⁶⁵ FEI et al. 2019: 995–1020.

⁶⁶ CARVALHO et al. 2021: 341–346.

⁶⁷ APRILIYANTI et al. 2021: 440–460.

⁶⁸ DAUD–YUSOFF 2011: 17–22.

⁶⁹ KUPPER et al. 2019.

⁷⁰ KEMENADE 2014: 650–657.

⁷¹ KANE et al. 2015: 1–25.

⁷² SONY et al. 2020: 779–793.

⁷³ ABBAS–KUMARI 2023: 426–451.

⁷⁴ YUSSOF 1996: 31–49.

Training and education

In the TQM context, employees need to acquire relevant knowledge and skills through appropriate training.⁷⁵ Furthermore, Quality 4.0, as an emerging concept in QM studies, emphasises the need for transformational skills such as critical thinking, creativity, adaptability and social skills, including teamwork and knowledge transfer. Sony and Douglas⁷⁶ stressed the importance of training, which plays a vital role in successfully implementing Quality 4.0. Ali and Johl⁷⁷ agree that employee training and learning play a crucial role in adopting and implementing digital TQM. They argue that Industry 4.0 involves the use of a wide range of technology, which requires employees to be equipped with technical and transformational skills. In the context of the public sector, training will lead to the overall success of the e-government program.⁷⁸ Training will provide the employees with the necessary skills to use the technology that is introduced. Thus, it will increase the e-government diffusion rate among them.

Employees involvement

A successful quality management process emphasises that employees at all levels inside an organisation must engage with and participate in enhancing the organisation's capabilities to create and deliver value to the citizens. Soft TQM practices emphasise the idea that all employees within an organisation are responsible for quality.⁷⁹ Employees' involvement is related to employees' flexibility, multiple skills, training and capacity to solve problems.⁸⁰ Beyond ICT infrastructure and technologies, adopting technology requires a high level of human resources management. From a public sector perspective, human resources, i.e. government employees may have a significant impact on the spread of digital government. Human variables affecting digital government development include technical and technological know-how, IT skills and capacity. Employees' levels of commitment influence their actions and attitudes toward digital technology reform. The success of e-government may be contingent on the continued commitment of capable government personnel who are enthusiastic and willing to accept reforms and new ideas and to participate in implementing new programmes.⁸¹

⁷⁵ HWANG et al. 2020: 147–158.

⁷⁶ SONY et al. 2020: 779–793.

⁷⁷ ALI–JOHL 2022: 608–620.

⁷⁸ APLENI–SMUTS 2020: 15–27.

⁷⁹ HWANG et al. 2020: 147–158.

⁸⁰ CARVALHO et al. 2021: 341–346.

⁸¹ APRILIYANTI et al. 2021: 440–460.

Citizen focus

One of the fundamental elements of QM is customer focus. Customer focus, as a key pillar of TQM aims to show the commitment of the organisation's leadership to fulfil and strive to exceed customers' needs and expectations, while ensuring consistency with regulatory and statutory requirements, identifying risks and opportunities that can affect customers' conformity of use and customer satisfaction, and ensuring that this customer-focused approach is sustained and continuously maintained.⁸² In the private sector, TQM focuses on the end-user of the product or service. In the public sector, in contrast, the focus of TQM has shifted to the role of citizens. The varying positions of the citizens must also be considered, as different sections of the population have different interests in government programmes.⁸³ Accordingly, their interests should be well addressed by governmental digital strategies.

Hence, the development of digital services provided by the government must be based on the actual demands of citizens. For example, in e-government, the ability of users, including citizens and civil servants, to use and cope with new technology must also be considered.⁸⁴ Furthermore, the e-services provided should be more efficient, effective and ready to eliminate bureaucracy with multiple service providers in order to spark interest in the users. Thus, in order to design services that work for citizens, governments must first understand their needs. This can be accomplished by researching a diverse group of users in a variety of settings and the results of this research will influence service design and delivery. Intelligent services may also be implemented to improve the user experience and to create a new digital ecosystem for citizens. The government should provide a safe and secure platform for residents and businesses to communicate with the government to increase their involvement.⁸⁵

Continuous improvement

According to Jurburg et al.,⁸⁶ continuous improvement refers to “the inter-related group of planned, organized, and systematic processes of constant change across the whole organization, focused on engaging everyone within the organization into achieving greater business productivity, quality, safety, ergonomics, and competitiveness”. Continuous improvement is a strategy whereby all employees at all levels inside the public sector work together proactively to achieve regular incremental improvement to realise the digital transformation process. In such ways, it combines a company's collective talents to form

⁸² SADER et al. 2019: 131–140.

⁸³ NOUR 2018: 1–15.

⁸⁴ APLENI–SMUTS 2020: 15–27.

⁸⁵ OTHMAN et al. 2020: 2864–2876.

⁸⁶ JURBURG et al. 2019: 359–376.

a powerful engine for improvement. It has become clear that merely satisfying customers is not enough. Quality must also focus on continuous improvement, which involves commitment from employees.⁸⁷ It is also emphasised that continuous improvement of an organisation's overall performance should be a permanent objective of the organisation.⁸⁸

CONCLUSIONS

Based on the aforementioned soft TQM elements, this paper aimed to contribute to a better understanding of how soft TQM practices can be applied to digital transformation efforts in the public sector through five elements of soft TQM practices, comprising: 1. top management commitment and leadership; 2. training, and education; 3. employee involvement; 4. citizen focus; and 5. continuous improvement practices. Soft TQM focuses more on the need for human factors rather than technical developments. Human factors, which largely depend on leaders and employees, play a crucial role in managing and implementing digital transformation in an organisation. Without them, public sector digitalisation efforts cannot move forward or achieve their objectives, even if they have advanced technology or knowledge. It is hoped that this paper has shed some light on the practical implications for government agencies, demonstrating that there is a need to pay more attention to soft TQM factors to ensure the successful adoption and implementation of new technology in their organisations.

Several limitations were identified. This paper is limited to a literature review based on databases searched in Scopus and Google Scholar. Second, only English language literature was included in the review. Several recommendations can thus be made. Future reviews can be carried out using additional leading and supporting databases such as Web of Sciences, ScienceDirect, Dimensions, DOAJ, Myjournal, Econbiz and EbscoHost to enhance the search strategies. Second, literature in other languages should be included, which could improve the variation in literature. Third, the suggested soft TQM elements can be tested empirically in the public sector to test their effect on the digital transformation process.

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