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TOTAL QUALITY MANAGEMENT IMPLEMENTATION IN HIGHER
EDUCATION SETTINGS. A SYSEMATIC REVIEW

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Abstract

The present study was conducted to identify a new set of total quality management practices used in higher education institutions. To achieve this goal, a systematic literature review was performed. The research strategy was applied to studies published between 2000 and 2020, and 40 papers were selected through screening and review based on the purposes of this paper. Six Total Quality Management practices were identified for implementation in higher education institutions, i.e., top management, human resources, customer focus, benchmarking, continuous improvement and process management.

JEL CLASSIFICATION: I20

KEYWORDS: TOTAL QUALITY MANAGEMENT; SOFT TOTAL QUALITY MANAGEMENT PRACTICES; HARD TOTAL QUALITY MANAGEMENT PRACTICES; HIGHER EDUCATION; SYSTEMATIC LITERATURE REVIEW

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1. Introduction

Higher education is crucial to the development of nations. Advances in teaching methodologies, new learning tools, and attention to training outcomes have led higher education practitioners to aspire to increasingly competitive standards (Wilkins, 2020; Gulden, Saltanat et al., 2020; Kigozi, 2019), The COVID-19 pandemic has shifted higher education from campuses to online classes, highlighting the need for quality education (Rashid & Yadav, 2020), Tasopoulou and Tsiotras (2017) shed light on how educational quality and administration are very important for all students, parents and society. Yusr, Mokhtar et al. (2017) suggested that the implementation of Total Quality Management (TQM) is important in this regard, and Al-Qayoudhi, Hussaini et al. (2017) stated that TQM is not limited to the manufacturing sector but has also served higher education in recent times. Furthermore, it is clarified that there is sufficient support from the literature for acceptance of TQM in the service sector, i.e., higher education (Thakkar, Deshmukh et al., 2006; Bayraktar, Tatoglu et al., 2008), and Bouranta (2020) explains that by adopting TQM practices, performance pressures on the higher education sector ease, and the quality of education also improves with its implementation (Dwaikat, 2020), Kigozi and On (2019) found that a failure to implement TQM by higher education institutions reduces chances of growth and sacrifices benefits from keeping pace with current trends. Moreover, Prakash (2018) has uncovered that the operationalization of quality in higher education is adopted through multidimensional, multilevel and dynamic approaches.

The aim of the present study is to identify a set of TQM practices that is useful and applied in higher education institutions to improve the quality of teaching and administration. These practices are therefore termed a new set of TQM practices used in the higher education setting. Furthermore, this research seeks to explain how the implementation of a new set of TQM practices could enhance performance by improving the quality of education and administration. In addition, to the best of the authors' knowledge, there has been no systematic literature review of this research that provides a roadmap for academicians and practitioners.

With respect to the above, the remainder of this paper is organized as follows. The applied methodology is explained in the next section. The results

of the systematic literature review follow, while the paper ends with a discussion and conclusion, in which the theoretical and practical contributions of the present study are highlighted.

2. Methodology

The aim of this work is to identify a new set of TQM practices used in higher education that could be relevant for all stakeholders in the implementation of these practices. To achieve this goal, a systematic literature review was performed in accordance with frameworks proposed by the main literature on systematic review methodology (Cerchione & Esposito, 2016; Jesson et al., 2011; Ward et al., 2019), Hence, the literature review involved the following main steps:

- search strategy definition;
- selection of studies to be included in the review;
- data extraction;
- recording of results.

Studies were selected using the Emerald Full-text and Science Direct databases. Moreover, to avoidance, the Google Scholar and Scopus search engines were used to search for and select papers. The authors conducted a comprehensive search strategy to find appropriate research papers for the study by using the following keywords: “TQM strategy”, “quality management”, higher education guidelines”, “universities”, “Higher education institutions”, “TQM concepts”, “TQM practices”, “Quality systems in higher education”, and “TQM implementation in universities”. The results were further narrowed down with the keywords “education”, “Higher education”, “TQM”, and “QM”.

3. Results

Al-omoush, Rahahleh et al. (2015) found that higher education is very important to the progress of any nation, as it generates a great capacity to address future challenges and makes the most of opportunities available to any country. Moreover, the authors emphasize that total quality management should focus on human resources, which include students and staff, to obtain

maximum output. In addition, award systems should be established to implement proper practices of TQM.

Sayed, Rajendran et al. (2010) noted that different TQM practices have a positive relationship with institutional performance. In addition, the authors developed the construct of TQM for engineering educational institutes to evaluate the impact of TQM practices on institutional performance. Finally, the practices that help management implement quality initiatives are also explained by the researchers. Almurshidee (2017) explain that TQM used in higher education institutes in Saudi Arabia has different aspects and find that the staff of higher education institutes view the implementation of TQM as only possible when provided with its constituents. Moreover, teaching staff believe that for the implementation of TQM, it is necessary to provide the required information systems. In addition, it has been noted that TQM implementation is important for performance in higher education institutes in Saudi Arabia. Khan, Malik et al. (2019) report that multiple TQM practices help institutes achieve quality in all departments. The authors also describe the specific TQM practices that contribute more to attaining quality with the maximum performance of employees and institutes.

Two relevant aspects are soft and hard quality management practices. In past research, it has been declared that both aspects are important for quality system implementation; however, research also reports that soft quality management practices are more important in this particular context (Yusr, Mokhtar et al., 2017), Venkatraman (2007) argued that most research has denied the idea of implementing TQM in higher education, as it is difficult to evaluate, although other researchers have found TQM very valuable for higher education. In this study, the researcher proposes a framework that can be used in a higher education context for the implementation of TQM practices to attain quality in the sector. Psomas and Antony (2017) identify TQM elements that improve the performance of higher education institutes in Greece and conclude that sufficient human resources are most important not only for such institutes but for Greek society as a whole. Therefore, it is important that TQM practices emphasize human resources to achieve better performance. Zwain, Lim et al. (2017) explain that the implementation of core TQM practices is important for the performance of institutes. The authors find that academic leadership is necessary not only for the knowledge management process but also for the performance of institutes in Iraq. Santarisi and Tarazi (2008) explain that TQM practices are important for the performance of institutes, both financially and operationally. Consequently, the implementation of TQM

practices helps institutes achieve strong performance efficiently and effectively.

Ahmed, Ali et al. (2016) explain that implementing TQM practices is a new aspect of the higher education sector in Pakistan. Moreover, the authors discuss eight TQM practices that can enhance the performance of institutes. Mohammed, Alotibie et al. (2016) note that Saudi universities have started to emphasize the implementation of TQM practices. As quality is considered important for better performance, it is being considered to improve higher education in Saudi Arabia. Bayraktar, Tatoglu et al. (2008) develop an instrument and explain TQM practices that are critical for the performance of higher education institutes. The authors' instrument has been properly validated to obtain better results of TQM practices in higher education institutes in Turkey. Burli, Bagodi et al. (2012) find that the soft practices of TQM generate better results. Additionally, the authors explain that proper processes and continuous improvement are required for institutes to use TQM practices for better performance.

Dawabsheh, Hussein et al. (2019) observe a positive relationship between TQM practices and the performance of Arab American University Palestine. In addition, employee satisfaction and empowerment, training and development in teamwork with organizational culture are essential for the performance of universities. Antunes, Mucharreira et al. (2018) explain that a customer-oriented focus, continuous improvement, and human resource satisfaction are important because they facilitate the implementation of TQM practices in the Portugal higher education sector. Zubair (2013) shows that the private sector is more vigilant in the implementation of TQM practices than public sector institutes. Others explain reasons for not implementing TQM practices. Rodriguez, Valenzuela et al. (2018) note that customer orientation, leadership, continuous improvement, stakeholder satisfaction and human resource satisfaction are important for improved institute performance. In addition, the authors find that the implementation of these aspects can enhance the higher education sector in the Philippines. Sahu, Shrivastava et al. (2013) reveal that due to intense pressures from all stakeholders, it is necessary to maintain a quality system of technical education to compete in the global market. In addition, the satisfaction of customers, employees and all other relevant stakeholders is necessary to ensure the timely implementation of quality systems along and achieve quality from the technical education sector.

The researchers explain quality issues but not in a collective manner. Thus, findings regarding TQM factors will contribute to the improved performance of technical education. In this study, the researchers used ISO standards and created their own models based on guidelines provided by experts on quality.

Researchers have mentioned that quality management systems should be fully supported by motivated top management commitment along with continuous improvements. In addition, when researchers use ISO-9001:200, further explanation is unnecessary. Moreover, administrative roles are very important in the implementation of standards of quality in an institute (Ruzevicius, Adomaitiene et al., 2007), Dwaikat (2020) collected data from 377 professionals working in university upper management, researchers and other experts. The author found that higher education institutes can benefit from such research, which will contribute to TQM in higher education institutes by explaining the relationships among different variables to assess the performance of the higher education sector. Moreover, such work will help decision-makers select the most appropriate quality factor for increasing the performance of the higher education sector. Prakash (2018) found that different aspects of total quality management have dominated the literature on the higher education sector, but the author finds the satisfaction of students to be the most important factor. In addition, there are different views of quality, as parents, faculty and students think differently about the effect of the efficient implementation of total quality management systems in the higher education sector. It is also noted that the quality of teaching delivery should be maintained at the highest levels to achieve success for the higher education sector with an emphasis on social aims such as equity and access to education. Houston (2008) explained that rather than removing complex systems, there is a need to implement quality systems in the higher education sector. Different indicators regarding the implementation of quality management systems are provided by the researcher. In addition, importance is given to processes and their outcomes for performance. It is also found that local solutions for the implementation of quality systems should be emphasized. Sahney (2012) has given importance to the idea that quality management systems should be adopted by institutes and systems for the effective and efficient performance of higher education institutes. The author explains that customer, faculty and other stakeholder satisfaction is very important for the achievement of performance. In addition, the designs and components identified are necessary for the implementation of quality systems. Ardi, Hidayatno et al. (2012) explain that different quality dimensions are necessary

for the implementation of quality systems in higher education. The study uses an instrument of use to policy-makers by explaining different dimensions that are helpful for the implementation of total quality management for the higher education sector. However, the study only collects data for final-year students and thus does not represent all students, and it will be important to collect data from other students to obtain further results regarding higher education performance.

O'Mahony and Garavan (2012) noted that for the implementation of quality management systems, it is necessary that all aspects be thoroughly monitored. For this purpose, improvement, top management commitment, and utilization of resources are necessary. By implementing the factors identified by the researchers, higher education institutes can easily implement quality management systems. The study was conducted in India, a developing country in regard to engineering institutes, to determine the impact of top management commitment on the achievement of not only customer, employee and other stakeholder satisfaction but also performance in higher education. In addition, the study shows that quality management systems are not fully implemented in institutes for better performance but rather only adopted partially. It is important for a country such as India to care about these factors. Moving forward, it is also recommended that appropriate staff are hired for different jobs (Sakthivel, 2007),

Thakkar, Deshmukh et al. (2006) concluded that for quality improvements in technical institutes to occur, it is very important to provide infrastructure with the best facilities. This encourages not only students but also all other stakeholders to create a quality environment. Moreover, it recommended that institutes always make keen efforts to ensure the proper implementation of continuous improvements, cultural changes and, most importantly, the effective and efficient use of financial resources for better institute performance. Megnounif, Kherbouche et al. (2013) concluded that the development of quality plans is important in the higher education sector to provide guidelines from training to the implementation of quality systems. For this study, data were collected from teachers and students. Therefore, there is a need to improve plans for the implementation of quality systems in higher education. Karahan, Mete et al. (2014) found that it is important to provide quality system implementation for effective and efficient performance in higher education. It is concluded that student satisfaction is as vital as gaining

a competitive advantage for any organization. Moreover, it is evident that quality should be maximized to the benefit of all stakeholders. Rezeanu (2011) describes different quality policies, including “Entropically policies, stimulative policies, [and] comprehension policies”. Such policies play an active role in training from upper to lower management for the effective implementation of total quality systems in higher education.

Almsafir, Bourini et al. (2012) conclude that it is essential for private higher education institutes in Malaysia to be accredited by a world-renowned accreditation body, as this enhances awareness of total quality management systems that is necessary for the performance of the higher education sector. Their study of three private institutes found that staff are not fully informed of the importance of accreditations. Todorut (2013) explains that the implementation of total quality management practices enhances higher education competitiveness with others in the market. In addition, quality management practices emphasize innovation and flexibility for improved financial performance and also allows better planning on the part of top management for the implementation of quality in higher education, allowing top management to easily satisfy all stakeholders. Adina-Petruța, Roxana et al. (2014) concluded that the six sigma strategy can maintain quality systems in higher education. It is further explained that the strategy has already been used in different sectors and has generated effective and efficient results in terms of performance, and its implementation in higher education will also enhance the performance of the higher education sector. In addition, the compatibility of the six sigma approach with ISO 9000 standards is found to improve the performance of the higher education sector. Glushak, Katkow et al. (2015) conclude that economic quality management is essential for independent quality systems of a university, covering all areas that are essential in maintaining quality in universities. Moreover, quality levels have increased through the proper and effective utilization of management controls. Thus, it is noted that it is essential to use economic quality management in an effective way to satisfy all stakeholders.

Bahari, Samsudin, et al. (2019) explore TQM practices as instruments for higher education institutes and show that quality is essential for the achievement of a competitive advantage for higher education institutes. Moreover, it is concluded that the best instrument for measuring the performance of higher education uses different strategies, functions and integrated operations. Kaur and Batra (2019) found that it is essential that students be satisfied with the implementation of TQM practices and elaborate

that teamwork is important for the implementation of TQM practices. Moreover, male and female students think differently about TQM, where male students want stronger implementation of TQM practices than female students.

Horban, Kuprii et al. (2020) observed that Ukraine has received international exposure in implementing TQM practices. In addition, 659 higher education institutes are in the process of increasingly implementing TQM practices following international standards, enhancing the chances of Ukraine's higher education institutes shaping traditions and values for effective performance in higher education. Haque and Tausif (2020) discuss TQM elements that are necessary for improvements in the higher education sector. Three elements, teaching, nonteaching and students, are found to be important for the implementation of quality systems in higher education. In addition, student satisfaction is found to be the most essential element in Saudi Arabia. Baitanayeva, Aubakirova et al. (2020) explain that quality is important in any sector, as it is important for higher education. For a sustainable competitive advantage in both domestic and international markets, it is essential to implement quality systems. Therefore, in Kazakhstan, it is now becoming the priority of universities to ensure that quality systems are implemented in their true spirit.

Martínez-Gómez, Jabaloyes Vivas et al. (2020) explain that TQM practices do not have an strong impact on the higher education sector until they are fully backed by training programs. Moreover, to achieve competitiveness in the market, it is essential that TQM practices be implemented for the growth and performance of higher education. In addition, TQM practices are important to give graduates a bird's eye view of practical life and give them adequate skills to cope with the challenges ahead. Therefore, TQM practices, knowledge management and training are necessary for the implementation of quality programs. The main findings of the above systematic review of the literature are summarized in Table 1.

Table 1. Systematic review of main findings.

Author(s)	Research Country	Title	Findings
Al-omoush, Rahahleh et al. (2015)	Jordan	Total Quality Management in Higher Education	The findings of this study indicate that TQM is an important strategy and it should focus on improving excellence among students, faculty and staff with award systems led by the management of universities.
Sayeda, Rajendran et al. (2010)	India	An empirical study of total quality management in engineering educational institutions of India.	The authors describe TQM practices related institutional performance and report a positive relationship between TQM and performance.
Almurshidee (2017)	Saudi Arabia	The Implementation of TQM in Higher Education Institutions in Saudi Arabia: Marketing Prospective	The results indicate that there should be serious efforts to promote a culture of TQM through different mediums that can help all stakeholders achieve quality standards.
Khan, Malik et al. (2019)	Pakistan	Total Quality Management practices and work-related outcomes. A case study of higher education institutions in Pakistan	The authors observe that TQM practices contribute to employee performance and improve the performance of institutes.
Venkatraman (2007)	New Zealand	A framework for implementing TQM in higher education programs	The research concludes that a systematic evaluation process flow with proper guidelines is necessary for the efficient execution of TQM practices in higher education, as this sector differs from other sectors.

Psoomas and Antony (2017)	Greek	Total quality management elements and results in higher education institutions	The study explains that TQM practices are important for the performance of higher education institutes in Greece. In addition, teaching and employee satisfaction have positive impacts on the performance of institutes as well on society.
Zwain, Lim et al. (2017)	Iraq	TQM and academic performance in Iraqi HEIs: associations and mediating effect of KM	The researchers report that core TQM practices have positive impacts on the performance of institutes and knowledge management processes.
Santarisi and Tarazi (2008)	Jordan	The Effect of TQM Practices on Higher Education Performance: The Faculty of Engineering and Technology at the University of Jordan as a Case Study	The study shows that TQM adoption is necessary but that the perceptions of human resources must be considered, i.e., faculty and staff. Moreover, when leaders, students and stakeholders have positive impacts on operations, performance and market focus, this has positive impacts on the financial performance of institutes in Jordan.
Ahmed, Ali et al. (2016)	Pakistan	Implementing TQM practices in Pakistani Higher Education Institutions	The researchers note that the implementation of TQM practices in higher education institutes in Pakistan is still in early stages but can enhance the performance of quality systems.
Mohammed, Alotibie et al. (2016)	Saudi Arabia	Total Quality Management in Saudi Higher Education	The researchers observe that quality is achieved by adopting a continuous process carried out for long period and that the six-sigma method should be implemented to achieve effectiveness and efficiency.
Bayrakta, Tatoglu et al. (2008)	Turkey	An instrument for measuring the critical factors of TQM in Turkish higher education	In this study, the researchers develop an instrument that can be used for the implementation of TQM practices in higher education institutes.

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Burli, Bagodi et al. 2012	India	TQM dimensions and their interrelationships in ISO certified engineering institutes of India	The researchers explain that different TQM practices are important for the performance of institutes but that top management is more important for quality systems and the achievement of strong performance in institutes.
Dawabsheh, Hussein et al. (2019)	Palestine	The triangular relationship between TQM, organizational excellence and organizational performance: A case of Arab American University Palestine	The study shows that TQM practices encourage strong performance in organizations and higher education institutes. Moreover, for the implementation of TQM practices, a good organizational culture is important.
Antunes, Mucharreira et al. (2018)	Portugal	Total Quality Management Implementation in Portuguese Higher Education Institutions	The researchers find that TQM practices are important for higher education in Portugal as they create a global competitive edge. Culture is also important when making efforts to create quality systems.
Zubair (2013)	Pakistan	Total Quality Management in Public Sector Higher Education Institutions	The researcher elaborates that the private sector is more active in the implementation of TQM practices for the better, effective and efficient performance of institutes.
Rodriguez, Valenzuela et al. (2018)	Philippines	TQM paradigm for higher education in the Philippines	The researchers highlight that TQM practices such as the empowerment of human resources, continuous improvement and leadership with stakeholder satisfaction are essential for the performance of institutes.
Sahu, Shrivastava et al. (2013)	India	Critical success factors for sustainable improvement in technical education excellence: A literature review	For the effective and efficient implementation of TQM in technical institutes, it is necessary to adopt TQM in ways tailored to the education sector rather than based on its adoption in the manufacturing sector.

Ruzevicius, Adomaitiene et al., (2007)	Lithuania	Peculiarities of Education Quality Assurance in Lithuania	Quality management systems (QMSs) are now necessary for the progress of any organization and the education sector. It is been observed that such procedure should be adopted to improve performance.
Dwaikat (2020)	Sweden	A comprehensive model for assessing the quality in higher education institutions	Through the adoption of input-based factors, the quality of students impacts the institute environment. Moreover, process-based factors have less of an impact than input-based factors.
Prakash (2018)	India	Quality in higher education institutions: insights from the literature	The findings of the study indicate that total quality management is applied with the help of benchmarking and accountability to suit the higher education sector in the studied region. A model adopted in Europe for the implementation of TQM was later adopted North America and Asia.
Houston (2008)	New Zealand	Rethinking quality and improvement in higher education	The researcher identifies a need for quality improvements to ensure the effective and efficient performance of the higher education sector.
Sahney (2012)	India	Designing quality for the higher educational system	The researcher explains the components necessary for quality in higher education institutes. Moreover, different stakeholders are identified as key to quality implementation systems in the higher education sector.
Ardi, Hidayatno et al.(2012)	Indonesia	Investigating relationships among quality dimensions in higher education	The study finds a relationship between student satisfaction and faculty commitment by measuring student satisfaction at an Indonesian state university, which can guide policy-makers in their future decisions.
O'Mahony and Garavan (2012)	Ireland	Implementing a quality management framework in a higher education organization	The study identifies factors needed for the implementation of quality management systems in higher education.

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Sakthivel (2007)	India	Top management commitment and overall engineering education excellence	The researcher notes that through effective and efficient top management commitment, it is easy to implement total quality management in institutes for quality performance.
Thakkar, Deshmukh et al. (2006)	India	Total quality management (TQM) in self-financed technical institutions	It is found that for the implementation of quality management systems in technical institutes, it is necessary to develop proper infrastructure to compete in the market.
Megnouni f, Kherbouche et al. (2013)	Algeria	Contribution to the Quality Assessment in Higher Education: The Case Study of the Faculty of Technology, Tlemcen, Algeria	The researchers explain the importance of continuous improvements to the implementation of quality management systems in higher education. Some of the described methods are also used by the researchers.
Karahan, Mete et al. (2014)	Turkey	Examination of total quality management practices in higher education in the context of quality sufficiency	The study analyses student satisfaction using an adequate scale.
Rezeanu (2011)	Romania	The implementation of quality management in higher education	Different approaches and policies for the implementation of quality systems in organizations are described.
Almsafir, Bourini et al. (2012)	Malaysia	The Global Drivers of Awareness toward TQM Practices within Educational Field: Evidence from Malaysia	The researchers observe the importance of quality management systems in higher education as well the need for accreditation in the implementation of quality management systems.
Todorut (2013)	Romania	The need of Total Quality Management in higher education	The study examines the process and effectiveness of total quality management practice implementation in higher education.

Adina-Petruța, Roxana et al. (2014)	Romania	Integrating Six Sigma with Quality Management Systems for The Development and Continuous Improvement of Higher Education Institutions	The researchers elucidate the importance and advantages of adopting six sigma and ISO 9000 standards of quality in higher education. These are found to enhance the performance of higher education through proper development of and continuous improvements to quality systems.
Glushak, Katkow et al. (2015)	Russia	Contemporary Economic Aspects of Education Quality Management at the University	It is found that economic quality management is essential for sustainable quality systems in higher education.
Bahari, Samsudin, et al. (2019)	Malaysia	A Proposed Measurement Instruments for Total Quality Management Practices in Higher Education Institutions	The researchers describe TQM practices and measurement instruments for higher education institutes and different challenges faced by higher education institutes in implementing quality systems.
Kaur and Batra (2019)	India	Evaluating Students Perception Regarding Prevailing Practices of TQM in Management Institutions of Punjab	The researchers identify different TQM practices of Indian higher education in the Punjab region for the sustainable implementation of quality systems.
Horban, Kuprii et al. (2020)	Ukraine	Implications of total quality management in Ukrainian higher education institutions: international experience	The researchers clarify that education is important for the development of any nation and describe TQM implementation with a focus on Ukrainian higher education institutions.

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Haque and Tausif (2020)	Saudi Arabia	Managing quality in university framework: Students' perspective	It is identified that in Saudi Arabia, all sectors are rapidly developing based on government goals, and thus the education sector must keep pace with such development, which quality systems can help with.
Baitanayeva, Aubakirova et al. (2020)	Kazakhstan	Problems of improving the quality of education	The study describes quality problems facing higher education and solutions based on comparisons of international standards.
Martínez-Gómez, Jabaloyes Vivas et al. (2020)	Spain	Relevance of Skills in Total Quality Management in Engineering Studies as a Tool for Performing Their Jobs	The researchers conclude that for the Spanish higher education sector, it is necessary to maintain quality higher education based on European standards.

Source: Own elaboration.

4. Discussion

Different findings were obtained from an in-depth study of 39 selected research publications based on various sample types, geographic areas, and study approaches, as shown in Table 1. Moreover, six TQM practices were identified as a new set of TQM practices for higher education institutes from a review of the literature, i.e., top management (39), human resources (38), customer orientation (33), benchmarking (05), process management (26), and continuous improvement (29), The following section further explains each TQM practice.

Top Management

Committed and involved top management makes decisions and develops defined visions for the successful implementation of TQM practices in higher education institutes (Narne & Sreenivas, 2017), In addition, Venkartaman (2017) observed that top management attention is necessary for day-to-day operations along with the compilation of strategies to compete in the market and the resolution of matters and issues of faculty members to boost their morale. Therefore, the role of top management is important to provide guidelines, vision, missions, processes and directions for the maximum productivity and prosperity of human and nonhuman resources in higher education institutes (Spendlove, 2007: McGoey, 2007), However, honesty and

adaptation to change from top management are vital for the progression of higher educational institutes (Drew, 2006; Bryman, 2007),

Human Resources

The successful implementation of TQM practices in higher education institutes is possible by evolving the process of human resources and providing opportunities according to their calibre for the prosperity of both institutes and human resources. Unfortunately, human resource offices are not able to provide guidance in this regard and create a pessimistic approach to human resources (Allui & Sahni, 2016; Mallillin, 2017), In higher education institutes, faculty are important for the implementation of TQM practices, but proper training, promotion and incentives can enhance motivation, though, as reported in past research, these factors are neglected and create barriers to implementation (Quraishi, Hussain et al., 2010), In addition, competent human resources contribute to the achievement of quality in higher education institutes (Chao, Hsu, et al., 2017),

Customer Focus

Student satisfaction creates word of mouth, and quality aspects are evaluated as a result. Therefore, the implementation of TQM practices and student satisfaction increase the goodwill of institutes (Teeroovengadam, Nunkoo et al., 2019), Furthermore, it is the right of the students to be satisfied, as observed by Jager and Jan (2019), and providing satisfaction along with quality has a positive impact on the performance of institutes. In addition, staff members have always been important to the satisfaction of students (Singal, Garg et al., 2016), and a study conducted in Pakistan concluded that the satisfaction of students is vital to the successful implementation of TQM practices and the performance of institutes.

Benchmarking

Benchmarking plays an important role in contributing to the development of organizational learning at an institute. In addition, a ministry of education should try to effectively guide institutes to prosperity and achieving total quality management (Rübenich, Dorion et al., 2019), Educational programs for the digital economy have an effect due to benchmarking, but proper training for both students and teachers is required to determine the priorities of today's world and adjust to global competition (Azoev, Aleshnikova et al., 2019), In addition, Mehta, Diwakar et al. (2019) note that infrastructural facilities should improve to achieve benchmarking in the higher education

sector, and Raja, Iftikhar et al. (2019) explain that benchmarking contributes to accreditation from the world’s top accreditation bodies.

Process Management

Fernandes and Fernandes (2018) found that process management has an impact on the quality and performance of higher education institutes. In addition, Hrabala, Opletalová et al. (2017) conclude that institutes implementing process management secure better results than those still in the brainstorming phase. Moreover, Nadarajah and Kadir (2016) report that process management should be implemented in higher education institutes to achieve effective performance.

Continuous Improvement

As explained by Kregel (2019), continuous improvements are viewed positively by students, who provide good feedback about them. Innovation in teaching with the introduction of new learning techniques, ideas and practical demonstrations has a positive impact on students as a part of continuous improvement programs initiated by institutes. Carlucci, Renna et al. (2019) observed that feedback has not been taken seriously by institutes, but with the implementation of continuous improvement programs, institutes are considering feedback to ensure effective performance. In addition, Iyer (2018) explains that continuous improvement is an important factor in the implementation of TQM practices in institutes to obtain maximum performance and quality for the enhanced learning of students. These latest findings are summarized in Table 2 below.

Table 2. TQM practices in Higher Education Settings.

Author(s)	TQM practices					
	TP	HR	CF	PM	CI	BM
Al-omoush, Rahahleh et al. (2015)	√	√	√		√	
Sayeda, Rajendran et al. (2010)	√	√	√		√	√
Almurshidee (2017)	√	√				
Khan, Malik et al. (2019)	√	√				
Yusr, Mokhtar et al. (2017)	√	√	√	√	√	
Venkatraman (2007)	√	√	√			

Psomas and Antony (2017)	√	√	√	√	√	
Zwain, Lim et al. (2017)	√	√	√	√	√	
Santarisi and Tarazi (2008)	√	√	√	√		
Ahmed, Ali et al. (2016)	√		√	√	√	
Mohammed, Alotibie et al. (2016)	√	√	√		√	
Bayraktar, Tatoglu et al. (2008)	√	√	√	√	√	
Burli, Bagodi et al. 2012	√	√	√		√	
Dawabsheh, Hussein et al. (2019)	√	√	√	√		
Antunes, Mucharreira et al. (2018)			√		√	
Zubair (2013)	√	√	√	√	√	
Rodriguez, Valenzuela et al. 2018	√	√	√	√		
Sahu, Shrivastava et al. (2013)	√	√	√		√	
Ruzevicius, Adomaitiene et al., (2007)	√	√	√	√	√	√
Dwaikat (2020)	√	√	√	√	√	
Prakash (2018)	√	√		√	√	
Houston (2008)	√	√	√		√	
Sahney (2012)	√	√		√	√	
Ardi, Hidayatno et al. (2012)	√	√			√	
O'Mahony and Garavan (2012)	√	√		√		√
Sakthivel (2007)	√	√	√	√	√	√
Thakkar, Deshmukh et al. (2006)	√	√		√		
Megnounif, Kherbouche et al. (2013)	√	√	√	√	√	

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Karahan, Mete et al. (2014)	√	√	√		√	
Rezeanu (2011)	√	√	√	√	√	
Almsafir, Bourini et al. (2012)	√	√	√	√	√	
Todorut (2013)	√	√	√	√	√	
Adina-Petruța, Roxana et al. (2014)	√	√	√		√	
Glushak, Katkow et al. (2015)	√	√	√	√	√	
Bahari, Samsudin, et al. (2019)	√	√	√	√		
Kaur and Batra (2019)	√	√	√		√	
Horban, Kuprii et al. (2020)	√	√	√	√		
Haque and Tausif (2020)	√	√	√	√	√	
Baitanayeva, Aubakirova et al. (2020)	√	√	√	√		
Martínez-Gómez, Jabaloyes Vivas et al. (2020)	√	√	√	√	√	√
Total	39	38	33	26	29	05

TP= top management; HR= human resource; CF= customer focus; PM= process management; CI= continuous improvement; BM= benchmarking.

Source: Own elaboration.

5. Conclusions

From this systematic literature review, six important TQM practices emerged, namely, top management, human resources, customer orientation, benchmarking, process management and continuous improvement. These six practices were found to be crucial for the successful implementation of TQM in the higher education sector. However, the results of the study differ from those of the studies used to find TQM practices. This may be due to methodology or measurement outcome differences. When analysing these differences, it was concluded that cross-sectional case studies and exploratory studies with different sample sizes and types were analysed. Multiple studies have been conducted in different parts of the world with different results. In

addition, various outcome measures have been used, such as the “Malcom Baldrige National Quality award”, “Six Sigma” approach, “European Foundation of Quality Management” approach, “Kanji business excellence model” and “Balance scorecard approach”, resulting in different outcome measures for the implementation of total quality management practices in higher education. Furthermore, top management is identified as important by researchers in the implementation of TQM practices in higher education institutions. Similarly, human resources, customer orientation, benchmarking, continuous improvement and process management are well supported by many researchers as important in the implementation of total quality management practices in higher education institutions. Thus, it is concluded that these six practices are critical in the implementation of successful TQM practices.

5.1 Managerial implications

Managerial suggestions for the successful implementation of TQM practices in higher education institutions are as follows:

- TQM practices can be used to satisfy students, improve quality learning and contribute to the performance of higher education institutions.
- There is a need to focus on benchmarking and human resources to improve the performance of higher education institutions.
- Finally, there is a need to introduce to all internal and external stakeholders the importance of implementing TQM practices in higher education institutions.

5.2 Recommendations for future research

The present study could be further extended to examine barriers to the implementation of TQM practices in developing countries’ higher education institutions. Furthermore, research should be conducted on TQM practices from the student’s point of view. Finally, the results of the present study could help policy-makers and practitioners adopt the successful implementation of

TQM practices in higher education institutions and contribute to knowledge of TQM philosophy.

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