



## A Systematic Literature Review of Total Quality Management (TQM) Implementation in Organization

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### A B S T R A C T

Technic Quality Management concepts and ideas are formalized based on the foundation of work carried out over the last few centuries, Quality management begins with a simple inspection-based system, where a product is compared against product standards by a team of inspectors. The purpose of this research is to find out how the TQM principles are implemented in various industrial sectors in improving all components of the company. In this study, we reviewed 40 TQM papers published between 2011 and 2020. The method used is to review research papers that discuss companies implementing Technic Quality Management. A total of 27 journals (about 68%) used the implementation of TQM and 13 journals (32%) as review methods. From these results it can be seen that 74% of companies that implement TQM use survey data sources and 26% of companies use other data. Finally, this paper shows that every TQM implementation contains at least one of the eight TQM principles, namely leadership, involvement of people, process approach, system approach management, continuous improvement, factual approach to decision making, mutual beneficial supplier relationships, customer-focused organization.

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### 1. INTRODUCTION

In any organization, the development concept is considered to be the most important element which every part of the organization strives for to accelerate and improve its quality. Usually organizations strive to achieve optimal performance levels and support employees with all the tools and ideas to produce better

performance and a more suitable environment for them to work better and harder.

SMEs invest and practice this managerial practice, namely TQM and organization learning (Mahmud & Hilmi, 2014). The above rating clearing says that the TQM has to be top the trained employees are to be involved for effective implementation of TQM in each and every process of business cycle with process

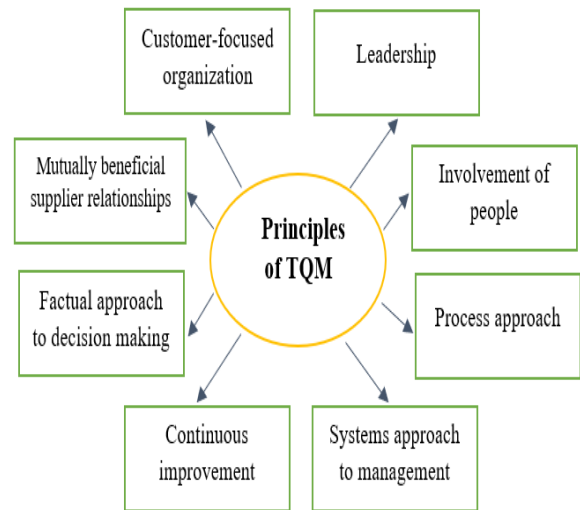
approach (Koilkuntla et al., 2012). The developed conceptual and research model helps to bridge the gap showing the relationship between TQM practices and organization performance (Anil & K.P., 2016). There's positive direct effects of culture and TQM on organizational performance and also the positive indirect effect of culture through its positive effect on TQM, managers should be aware of the cultural values emphasized in their organization because of their influences on the TQM practices and performance (Valmohammadi & Roshanzamir, 2014). Manufacturing companies should emphasize greater attention to both TQM processes and a greater degree of management support for TQM enhancement initiatives (Agus & Hassan, 2011).

## 2. LITERATURE REVIEW

The concepts and ideas of TQM were formalized based on the foundations of the work done over the last few centuries, Quality management started with a simple inspection-based system, where a product was compared with a product standard by a team of inspectors (Charantimath, 2017). TQM implementation based on Relative Importance Index (RII), find correlations between Clients, Consultants and Contractors that Client/Consultant have more similar views on quality management than Client/Contractor or Consultant/Contractor (Othman et al., 2019).

This exploratory study was designed to examine the linkages between quality- and maintenance-oriented continuous improvement practices and operational performance of manufacturing firms (Sahoo & Yadav, 2020). the degree of adaptation of management innovations transferred within MNEs from the headquarters to subsidiaries depends on both the organizational culture and national cultural distance between the MNE headquarters and subsidiary, although a supportive organizational culture can offset the effects of national cultural distance (Alofan et al., 2020). Quality management principles provide understanding and guidance on the application of quality management in an organization. As

per the ISO standardization, the following eight quality management principles can facilitate the creation of a quality work culture and successful implementation of quality management in any organization, shown in Fig. 1.



**Fig. 1.** Principles of TQM (Charantimath, 2017)

The purpose of this study is to examine the literature on Total Quality Management (TQM) and organizational performance by identifying the extent to which the TQM concept has been implemented by companies in various countries and various industrial sectors.

## 3. RESEARCH METHOD

This study uses a systematic review method from descriptions and results of previous journals on the application of Total Quality Management methods that have been collected from various industrial sectors in various countries. This journal contains a collection of results from research journals that discuss relationship relationship between tqm and other practice which are then classified according to research object, author, year and main result. The research methodology of this research is shown in Fig. 2.

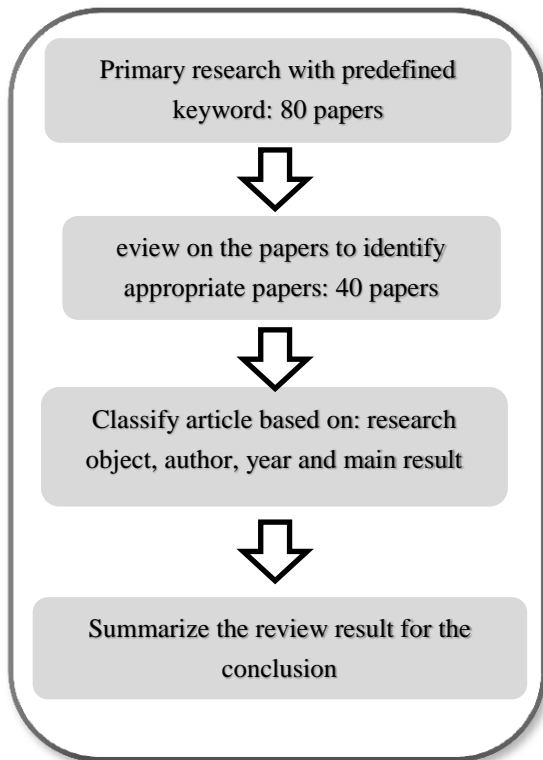


Fig. 2. Research methodology

The journals that have been collected are then classified in tabular form to be presented in the results and discussion.

#### 4. RESULT AND DISCUSSION

By using TQM showed that there was no significant difference in military force between male and female, nowadays women have a high self-confidence in workplace and men have changed their number of women has been increased to get higher education (Naghshbandi et al., 2012). Implementation of TQM helps to create and maintain a synergetic partnership in outsourcing context, which contributes directly to improving performance of e-government (Huai, 2012). Strong teamwork must be composed of knowledgeable staff who understands their

roles and duties as well as those of their team members (Suwandej, 2015). The institutional activities based on the TQM system provide all kinds of conditions to meet the needs of international students in educational and related services (Larina, 2015). The concepts of Total Quality Management, Lean, and Six Sigma can often overlap, many respondents confused the statistical process control and cost reduction aspects of Lean and Six Sigma with the core principles of TQM (Aarti, 2017).

In the activities of the organization, the organization directly and indirectly has been paying attention in terms of quality (Nugroho & Nurcahyo, 2018). TQM practice is another strategic option that can enhance viable performance outcome, and subsequently, competitive advantage of any SMEs at the marketplace (Sule et al., 2017). Service quality is an important construct in banking sector and identifies four broad conceptual categories related to service quality: Customer service quality, banking service product quality, online/e-service quality, automated service quality (Talib & Rahman, 2012).

For international firms to embrace innovation and technological change to retain a competitive advantage or even their survival (Petcharit et al., 2020). The prioritized factor is improving the quality management performance; the actor that has competence to carry out TQM improvement is director; the goal to be reached is commitment to improve the quality of goods and services; and the strategy used to improve total quality management/TQM based on the priority order is carrying out the SOP consistently (Ubay et al., 2017). Structural equation modeling (SEM) techniques are utilized to examine the relationships, based on a comprehensive review of previous studies, a conceptual model has been proposed to understand the relationships (Ahmad et al., 2012).

**Table 1.** Existing literature review of TQM

No	Paper Identity	Research object	Result
1	(Sahoo & Yadav, 2020)	Indian manufacturing sector	The results indicate simultaneous implementation of TPM×TQM practices has a significant potential to improve manufacturing performance as compared to standalone or separate implementation
2	(Alofan et al., 2020)	Multinational enterprises (MNEs) operating in Saudi Arabia	A greater level of national cultural distance is not necessarily a barrier to the transfer of a management innovation within an MNE and that the organizational culture can offset the effect of national cultural distance
3	(Anil & K.P., 2016)	Indian organizations	The developed conceptual and research model helps to bridge the gap showing the relationship between TQM practices and organization performance.
4	(Othman et al., 2019)	Construction industry	In conclusion this research able to give a series of recommendation and a clear quality management which can be followed by the industry practitioners to ensure that Total Quality Management can be implemented
5	(Koilkuntla et al., 2012)	Indian organizations	Has attempted to develop organization specific factors and factor ratings by considering business specific key performance indicators (KPIs) along with weighted ratings with the help of Analytical Hierarchy Process (AHP).
6	(Mahmud & Hilmi, 2014)	Malaysian SMEs	Provide better understanding of the effect of mediator on the relationship between TQM and SMEs performance
7	(Noor et al., 2012)	Malaysian automotive companies	Delmia Quest Simulation has proven to be able to simulate the manufacturing process. More improvement activities can be done to measure the consistency between the simulation and the actual result for other type of process and other industry
8	(Valmohammadi & Roshanzamir, 2014)	Tehran's pharmaceutical companies	The findings of this study suggest that Tehran's pharmaceutical companies emphasize on stability more than flexibility.
9	(Agus & Hassan, 2011)	Malaysian manufacturing industry	The result indicates that retail manufacturing companies should emphasize greater attention to quality measurement aspects of TQM and a greater degree of management support for TQM initiatives to ensure strategic sustainable competitive advantage
10	(Naghshbandi et al., 2012)	The police staff Tehran	There is significant difference between the amount of readiness in accepting TQM among males and females. There is significant difference between the officials regarding their work experiences in accepting the TQM.
11	(Huai, 2012)	E-Government Outsourcing Management	The process of improving performance of e-government was analyzed in the context of outsourcing.
12	(Ahmad et al., 2012)	Business performances as a conceptual model	This proposed conceptual model will help the academicians and industry players to have better understanding on the relationship between the practices and step by step implementation to improve business performance

**Table 1.** Existing literature review of TQM (continued)

No	Paper Identity	Research object	Result
13	(Hohan et al., 2015)	Information security	The methodology presented can be used by organisations wishing to go beyond compliance with the requirements for Information Security Management System defined in standards such as ISO 27001 or NIST standards, to identify opportunities for improvement and to coordinate efforts towards sustainable information security performance
14	(Singh et al., 2018)	Manu-facturing and Service companies in north India	The findings of this study provides a valuable knowledge regarding TQM practices from Indian manufacturing and service sector per-spective
15	(Abbas, 2020)	Manufacturing firms located in Pakistan	CSR is found to act as a partial mediator in the relationshipbetween TQM and CGP. The contextual analysis indicates that TQM is equally important for all sizesfirmsfor CGP; however, the level of CSR varies. Moreover, government support is imperative forfirms toachieve CGP objectives.
16	(Mehralian et al., 2016)	Pharmaceutical Industry	The results provide contribution to the earlier studies that have found inconsistent results on the direct association between social responsibility and organizational performance by demonstrating that quality management mediate the relationship between social responsibility and organizational performance
17	(Panuwatwanich & Nguyen, 2017)	Construction Firms	This study confirmed the significant and positive relationship between TQM implementation and organisational performance improvement.
18	(Bolatan et al., 2016)	Manufacturing firms in Turkey	The relationship between technology transfer performance and quality performance has become significant with the mediating role of total quality management
19	(Zakuan et al., 2012)	150 Thailand automotive companies	The result indicates that ISO/TS16949 certification does not moderate the relationship between TQM implementation and organizational performance.
20	(Zehir et al., 2012)	Various companies in the Marmara region	For two of performance indicators (quality and innovative) system approach to management dimension is found to be an important TQM component so firms should overrate that it is the most important activity for performance improving according to this study's findings
21	(Eniola et al., 2019)	SMEs in the South-western region of Nigeria	The outcomes can help SMEs by giving direction with regards to the OC, on account of its impact on the effective execution of TQM, in this way improving the dimension of performance.
22	(Álvarez-Santos et al., 2018)	Spanish Companies	Results show the potential of Total Quality Management to promote a Safety Management System by itself, even in the absence of proven core practices.
23	(A. Iqbal & Asrar-ul-Haq, 2018)	Software houses of Pakistan	The results reveal that TQM practices and ICR provide significant support to measure employee performance.
24	(T. Iqbal et al., 2018)	Pakistani industrial sectors (apparel export industry)	The results indicate that common (internal) infrastructure and TQM has a positive relationship with AM specifically in the apparel export firms in a third world economy where the industrial sector is in a nascent state

**Table 1.** Existing literature review of TQM (continued)

No	Paper Identity	Research object	Result
25	(Mohammed et al., 2013)	World Islamic Call Society.	From the above results it is clear that there a good awareness on the important concept of TQM by the senior management and improving the performance above average level, and there is a good attention in training the employees in the World Islamic Call Society on the philosophy of Total Quality
26	(Kahreh et al., 2014)	Organizations that participated in the banking industry	There are positive and high relationships between KM elements total quality management
27	(Duran et al., 2014)	62 sample companies in Eskişehir	it was discovered at statistical significance that the enterprises having the Total Quality Management and ISO 9000 certificates are better in the fields of degree of knowledge obtained from the customer (C), participation of employees in dissemination of knowledge (K), the quality process (QP), the quality culture (QC) and the quality performance (QPer) than those not having the mentioned certificates
28	(Taskov & Mitreva, 2015)	Macedonian higher educational institutions	The top management must create a system for motivational rewards as it develops the process of involvement of the employees' potential
29	(Srima et al., 2015)	School in Thailand	The result of the assessment of Total Quality Management Information System (TQMIS) for model school on practice is rated as absolutely appropriate in overall
30	(Alimohammadlou & Eslamloo, 2016)	Shiraz University, Iran	The findings of the study indicated a significant relation between learning, Autonomy, as the TQM practices and knowledge transfer, and between knowledge transfer and knowledge diffusion
31	(Izvercian et al., 2014)	Enterprise in Romania	The major outcomes of this research are: comprehensive literature review, TQM implementation in terms of human resources management has a positive impact on the sustainability and competitiveness of the enterprise and the presented models offer a holistic view on the positive impact of TQM, human resources management and ISO on the sustainability and competitiveness of the enterprise.
32	(Militaru et al., 2013)	Educational institutions in Romania	TQM in education supposes a holistic approach out of which each of the following seven elements should not be missing: philosophy, vision, strategy, aptitudes, resources, rewards and organization
33	(Suwandej, 2015)	sub- district municipality in Bangkok Thailand	The findings on the significant factors for modeling the total quality management for a sub- district municipality explained that successful public organizations required leaders who possess the seven factors, whereas management of strong teamwork, appropriate trainings, incentives and evaluation, and effective communication contributed to public organizational success
34	(Larina, 2015)	Education of International Students in Russia	The institutional activities based on the TQM system provide all kinds of conditions to meet the needs of international students in educational and related services
35	(Aarti, 2017)	Manufacturing Industries in Haryana	Results from the research showed that the core principles of Total Quality Management were widely implemented in manufacturing industries

**Table 1.** Existing literature review of TQM (continued)

No	Paper Identity	Research object	Result
36	(Nugroho & Nurcahyo, 2018)	Food industries in Indonesia	From result of analysis of Structural Equation Modeling (SEM), obtained result that model made is fit and acceptable
37	(Sule et al., 2017)	SMEs in Nigeria	The study found that the adoption of total quality management by SMEs is subject to many factors, and that TQM practices significantly affect different performance outcomes
38	(Talib & Rahman, 2012)	banking sector in india	to ensure successful implementation of TQM in the banks, there are certain critical dimensions which needs to be addressed, viz: management commitment and support towards TQM, motivating and training of employees, and monitoring of customers' requirement through feedback
39	(Petcharit et al., 2020)	1800 firm Thai auto parts industry	Results showed that all the model's variables had a positive influence on TQM, which can be combined to explain the variance of the factors affecting TQM (R <sup>2</sup> ) by 78%. Additionally, the variables affecting TQM ranked in importance were STY, KNG, QLY, and TIN
40	(Ubay et al., 2017)	Manufacturing Industries in Indonesia	it is found out that there are five main problems in each company, i.e. process management, continuous improvement activities, focus on customers, top management leadership, and commitment on the quality of the products produced.

In the information security management systems proposes methodology based on total quality management principles that associates the EFQM's business excellence criteria with information security processes and adapts the RADAR logic to drive innovation and continuous security improvement (Hohan et al., 2015). Practices from the perspective of the Indian manufacturing and services sector found that there is no difference in literacy about TQM between the two groups and the TQM elements are positively related to the performance factor of Indian organizations (Singh et al., 2018). The constructive results of TQM in CGP with the help of CSR in Pakistani companies indicate that if firms implement TQM practices in their true spirit, even in developing countries, it will boost CGP (Abbas, 2020). Organisational innovation, which is associated with the implementation of the "soft" elements of TQM are needen to look for new competitive factors to maintain and gain competitiveness in the new global market (Abrunhosa & Sa, 2008). Although technology transfer performance had a positive and strong effect on total quality management, no significant

direct relation was found between technology transfer performance and quality performance (Bolatan et al., 2016). Cluster analysis results indicated that in parallel with flexibility and balance focus cultures, internal focus culture were found to be favourable for the use of TQM (Panuwatwanich & Nguyen, 2017).. Organizations perceive CSR as a valuable resource that leads to a sustainable competitive advantage by promoting and supporting TQM implementation (Mehralian et al., 2016).

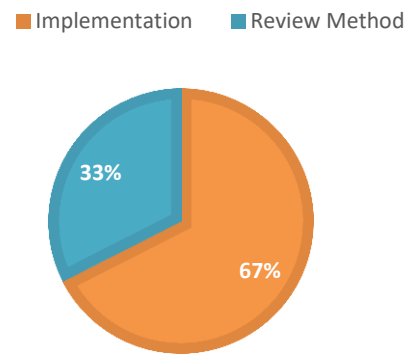
Two of performance indicators (quality and innovative) system approach to management dimension is found to be an important TQM component so firms should overrate that it is the most important activity for performance improving according to this study's findings (Zehir et al., 2012). ISO/TS16949 certification alone does not moderate the relationship between TQM implementation and organizational performance (Zakuan et al., 2012). many quality principles and techniques are used by companies, however, advanced improvement techniques that could support the companies in achieving better performance, are still poorly used and also considered as of

slighter importance, such as: ANOVA, DOE, FMEA, QFD and Six Sigma (Gerolamo et al., 2014).

JIT relationship is positively mediated through external infrastructure, TQM and JIT did not seem to contribute directly in operational performance, however this relationship is significant when it is mediated through AM (Iqbal et al., 2018). Interviews with SMEs owners-managers would help their comprehension of how to execute TQM effectively or clarify why some SMEs have not yet taken up TQM (Eniola et al., 2019).

Interactions have shown that in the presence of key SMS practices, the possibility of adopting an SMS is noticeably higher when the company operates in TQM environments (Iqbal et al., 2018). TQM is the process for continuous searching for the best ways and means to enable achieving the highest degrees of perfection of doing the jobs inside the organization and obtain high quality outputs (Mohammed et al., 2013).

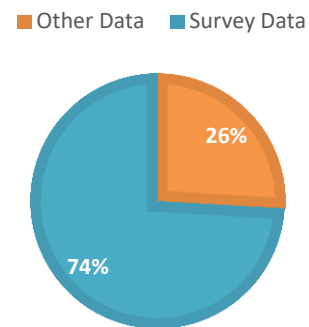
Successful Total Quality Management implementation in throughout the organizations requires major changes in the main four aspects of knowledge management namely: Creating, Storage, Sharing and Application (Kahreh et al., 2014). Low participation of the employees in knowledge sharing affects particularly the quality culture of the enterprise negatively (Duran et al., 2014). What is necessary for successful teamwork is support of all employees and readiness to cooperate with other teams, Collaboration in a mature business team is of great importance for the interaction between the team members (Srima et al., 2015). Improving TQM through providing favorable grounds in universities, especially by internalizing knowledge diffusion in societies and industries, can promise a bright future for university-industry knowledge transfer activities (Alimohammadlou & Eslamloo, 2016). The creation of a culture of quality is an essential condition for implementing the principles of TQM in an university (Militaru et al., 2013). Fig. 3 is the result of a journal review that has implemented the TQM concept.



**Fig. 3.** Distribution of TQM implementation

From 40 journals, only 27 journals (around 68%) use the implementation of TQM, and 13 journals (32%) as a review of the method.

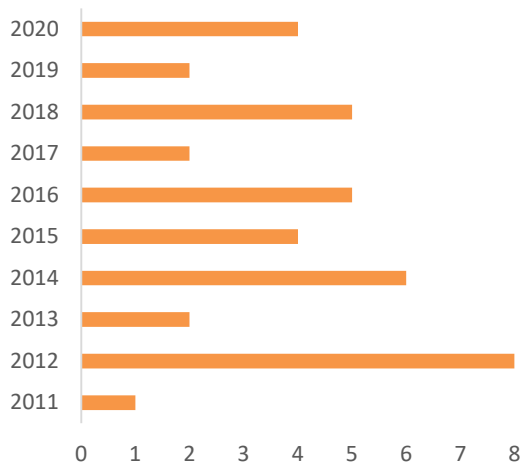
From the number of studies that carried out implementation, as many as 74% of researchers used survey data by synchronizing questionnaires, while 26% of other studies used other data such as company history data and / or other data. The following is shown in Fig. 4.



**Fig. 4.** Distribution of data sources to the implementation of TQM

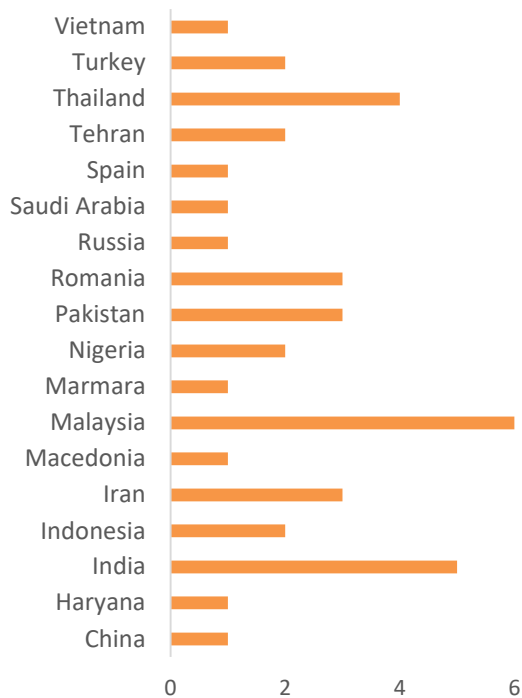
The distribution of samples per year of publishing is shown in Fig. 5. Some articles published online that have been included in this review can be seen from the following chart.





**Fig. 5.** Year of published

Fig. 5 shows year of published. From all journals found, the top two years with most of authors are 2012 (8 journals) and 2014 (6 journals).



**Fig. 6.** Countries of author

Reviewed based on the chart in Fig. 6 of the research article that most countries that use the TQM practice are implemented in Malaysia.

Fig. 7 shows how TQM research in the future can be used as a reference that quality and quality management can be achieved if all parts of the company are able to use more sophisticated methods by relying on industrial development 4.0 so that they can reach the global market. The most important strategy is to use digital technology such as Big Data, Autonomous Robots, Cyber security, Cloud, and so on. In addition, it is strengthening the human resources that the company has. Try to make human resources able to take advantage of technology where the 4.0 industrial revolution will allow humans to interact with objects that have technology systems in them so that humans must be able to apply all of these technologies.

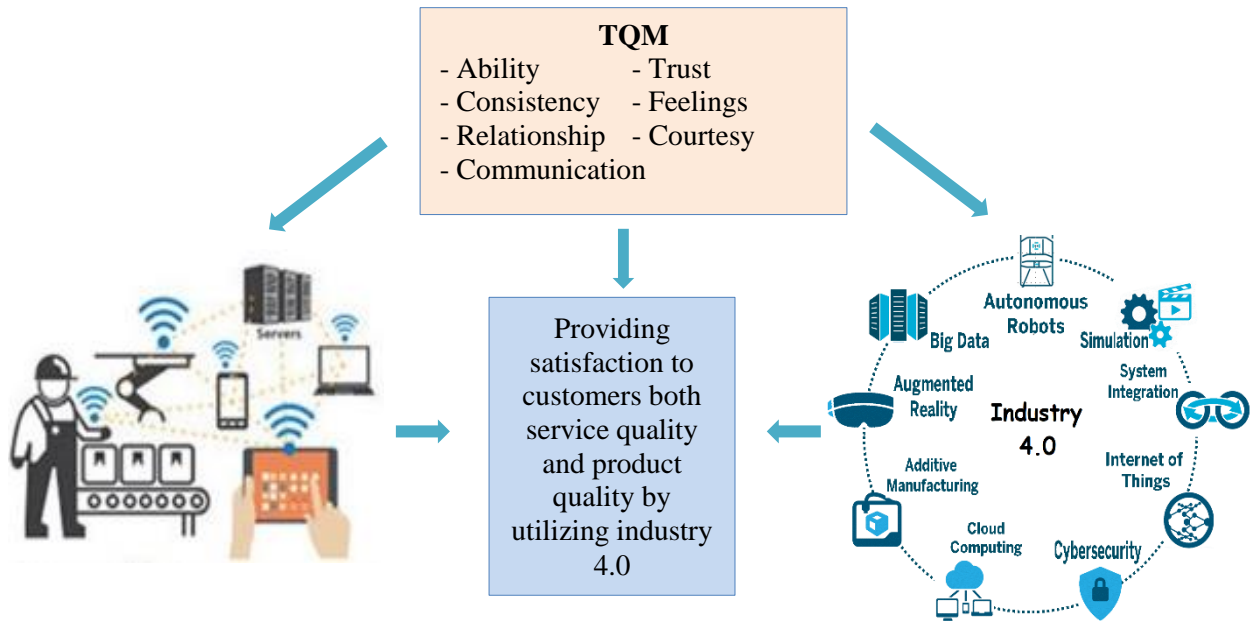


Fig. 7. Future research framework

## 5. CONCLUSION

In 40 journals, 27 journals (about 68%) used the implementation of TQM and 13 journals (32%) as review methods. From these results it can be seen that 74% of companies that implement TQM use survey data sources and 26% of companies use other data. From every journal reviewed, companies that implement TQM contain at least one of the eight TQM principles, namely leadership, involvement of

people, process approach, system approach management, continuous improvement, factual approach to decision making, mutual beneficial supplier relationships, customer-focused organization. This paper shows the emergence of TQM principles that occur in every TQM implementation. For further research, more quantitative data is needed in reviewing the implementation of TQM.

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