



Quality Management in Indonesian Maritime Education: Is it well implemented?

Sarinten^{1*}, Pujaningsih¹, Badiatul Islami¹, Mahardhika Andiansyah²

¹Education Management, Universitas Negeri Yogyakarta, Indonesia

²Balai Besar Pendidikan Penyegaran dan Peningkatan Ilmu Pelayaran, Indonesia

*Correspondence to: sarinten.2020@student.uny.ac.id

Abstract: The adoption of Total Quality Management (TQM) in educational institutions has not been thoroughly optimized, resulting in a wide range of results. This study aims to determine the key features of TQM used by maritime education and training institutes in Indonesia and the results. This study used descriptive quantitative methodologies using eleven institutions, the most extensively used TQM elements as measuring variables, and the findings. The respondents are 16 members of the institution's quality management team. Strategic quality planning (5.99), information and analysis (5.90), involvement of teaching staff and employees (5.86), knowledge and training (5.80), leadership and top management commitment (5.76), and process management were found to be the most often used TQM elements (5.76). Meanwhile, the most significant results of TQM implementation in the sample institutions were improving operational performance (6.06), teaching staff and employee satisfaction (5.90), and customer satisfaction (5.79). This study adds to the empirical literature on TQM in Indonesian maritime educational institutions by identifying the most often used TQM elements and the result achieved.

Keywords: total quality management, Indonesia, maritime educational institution

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INTRODUCTION

Globalization of the economy and culture has ushered in a new age in higher education. Although, on the one hand, universities are expected to maintain their traditional characteristics, respect for authority, obedience to the law, patriotism, and the like, higher education is expected to encourage political, economic, and social development in a changing global scenario (Mukhuti, 2019). Future developments in the globalization of higher education are difficult to predict, so higher education must be able to map its direction and goals and develop strategies to deal with the dynamic conditions of globalization (Ashmel et al., 2021; Verbytska, 2018).

Changes in the transition from an industrial society to a knowledge-based society (knowledge age) affect several aspects of both culture and education (Ahmed, 2020). Many new jobs emerge in the knowledge-based industry. Most new jobs require qualifications that workers in the industry do not have. New workers demand formal education to acquire and apply analytical knowledge theoretically, as well as a new work ethic and learning habits. The new worker paradigm transforms the nature of work from agriculture and household to industry-based jobs and requires knowledgeable employees (Drucker, 2011). Change is required to prepare for living and working in the knowledge era, particularly in the education sector. With many demands of the industrial world in this era, educational institutions are competing to create various innovations and advantages to meet the gaps, specifically for maritime education and training institutions whose graduates will work globally.

Higher education institutions compete to get students by making various improvements. To survive and compete, higher education institutions must create innovations in management and services to match or exceed customer expectations (Tsvetkova & Lomer, 2019; Wang et al., 2017). Management practices applied by higher education institutions reflect the principles of Total Quality Management (TQM). TQM is the most appropriate technique in this dynamic higher education environment to face market competition (Kistiani & Permana, 2020) and meet customer satisfaction (Bishnoi, 2018). Bishnoi (2018) adds that by applying TQM, institutions can get new opportunities for continuous improvement and create strategies to provide satisfaction for all stakeholders, including students, parents, industry, and society.

TQM has been widely used and yielded satisfactory results in the industrial world. TQM has also been applied in public service institutions, including educational institutions (Mumuni & Aboagye, 2017). Many higher education institutions have implemented TQM to face competition as the amount of higher education institutions in Indonesia is increasing (Burhanuddin & Supriyanto, 2018; Octavianus et al., 2021; Suriansyah, 2017). By adopting TQM principles, universities can guarantee the quality of their education services and always prioritize customer satisfaction (Aziz et al., 2018; Hasham, 2018). Besides in developing countries such as Indonesia, TQM is being implemented in higher education in developed countries like the United States and the United

Kingdom.

In practice, TQM cannot consistently be implemented smoothly in educational institutions. There were many challenges faced by higher education institutions in its implementation, for example, the lack of top management participation and ineffective leadership (Kigozi, 2019; Kumar et al., 2020). Regarding academic freedom and professional tenure, TQM adoption in higher education institutions also faces challenges (Ullah et al., 2017). Managers in business organizations require all employees to implement TQM practices, and those who do not comply get consequences or even dismissal. However, similar action cannot be taken in educational institutions because teachers have academic tenure and cannot be threatened or forced to implement TQM practices fully. Given this, many studies in the education field have found that many challenges and obstacles were faced in implementing TQM in higher education institutions (Sabra et al., 2016; Talapatra, 2018).

Based on Peraturan Menteri Perhubungan Nomor PM 70 Tahun 2013 Tentang Pendidikan Dan Pelatihan Sertifikasi Serta Dinas Jaga Pelaut, Maritime education and training in this research refer to education and training in the maritime sector to attain certain degrees of expertise and abilities based on the level and types of competence required for manning commercial vessels. Every maritime education and training program organized by the education and training institution must obtain approval from the director general of sea transportation. The curriculum and certification rules for maritime education refer to international regulations, namely Standard Training Certification and Watchkeeping (STCW) 1978 and its amendments. Currently, there are 12 maritime education and training units under the supervision of the Human Resource Development Center of Sea Transportation, which includes high schools, polytechnics, and training centers (<http://ppsddl.bpsdm.dephub.go.id/>). Though they are different in type, each educational institution's main tasks and functions are similar: to provide maritime education and training per STCW standards. Therefore, competition in taking market share is getting tighter. Finally, improving service quality is the only strategy that must be taken to maintain its existence (Wang et al., 2017). By establishing a Quality Management System (QMS) and applying the concept of total quality management (TQM) (Errabou, 2015), educational institutions will be able to face global challenges in providing satisfaction for graduate users and maintaining their existence in the field of education.

Establishing a quality management system is important for standardizing maritime education and training in Regulation I/8 of the STCW convention (Standard of Training, Certification, and Watchkeeping for Seafarer, 2011). In connection with these regulations, the required quality management system must apply to all stakeholders involved in the STCW convention's implementation and activities. Furthermore, maritime education and training institutions must have well-designed standards and quality management systems to provide services in developing students' knowledge, skills, and competencies and improve their services to industry continuously. The quality management system established by maritime education and training institutions must fully meet the STCW convention's education, training, and certification requirements. Although the STCW convention specifies minimum requirements for a quality management system, it also allows maritime training providers to design a system that best suits the characteristics of each organization in order to meet these requirements. As a result, maritime education and training institutions can use any quality management system model, such as the International Organization for Standardization (ISO) series or other national or international models. There are numerous maritime higher education institutions in other countries, including Turkey (Erdogan & Demirel, 2017), Poland (Muszy, 2017), and Philippines (Bertillo & Lacambra, 2017), have implemented the ISO 9001 series standard as a quality assurance standard, which in principle is in line with TQM.

The amount of research on TQM's application in the maritime education sector is still limited, making it difficult for implementers of maritime higher education in Indonesia to discover resources for increasing service quality. Due to this demand, many scholars have suggested additional research to implement TQM in the education sector, particularly in maritime affairs (Bertillo & Lacambra, 2017; Papanthymou & Darra, 2017). This research aims to determine the TQM implementation and result in Indonesia's maritime higher education sector. This research can contribute by providing empirical evidence of the implementation and also the results of TQM by maritime education and training institutions. Therefore, top management and policymakers can offer and adopt managerial recommendations in Indonesia's maritime education and training institutions.

METHODS

This research was conducted in state maritime education and training institutions in Indonesia. Using a descriptive quantitative approach, the questionnaire instrument was designed using two variables: the elements and results of TQM. The study was conducted for four months, June to September 2021, to obtain more accurate data. There were 16 participants in this study, with gender (male N=12, 75 percent; female, N=4, 25 percent) and age (less than 35 years, N=5, 31 percent, 35-44 years, N=4, 25 percent, and over 45, N=7, 44 percent) being the main differences. Respondents were from 11 institutions from a total of 15 state maritime education

and training institutions.

The questionnaire was adopted from research that has been carried out in the UK (Psomas & Antony, 2017) and then discussed with an expert in the field of TQM and a group of academics in top administrative positions in higher education institutions who have also implemented quality management in maritime education and training institutions. An interview was conducted in one of the marine education and training institutes to ensure that the questionnaire items were unambiguous and clear. Revisions were done to the draft from their comments until a fixed questionnaire was produced (Bayraktar et al., 2008). Finally, the questionnaire consists of statements about the profile of maritime education and training institutions, the elements of TQM, and the results were added with open-ended questions on each variable. The statements outlining features of TQM used by maritime training schools were graded on a seven-point Likert scale, with one indicating "zero" and seven representing "extremely high." The reliability of this theoretical construction was assessed by calculating the Cronbach Alpha coefficient and confirmed to be reliable, given that the Cronbach Alfa coefficient value meets the recommended limit point of 0.7. However, the indicator variable for improving service quality performance is right at the limit of 0.7.

The elements of TQM and the results by maritime education and training institutes are determined using descriptive statistics. Descriptive statistics, as defined by Creswell (2012), are used to summarize the overall pattern or tendency in the data, provide knowledge of how diverse the scores are in the data, and provide insight into the location of one score compared to another. Data is processed using the SPSS statistical program version 20. At the end of each variable, open-ended questions are given, and the results are used to compare the quantitative data obtained in the closed questionnaire.

RESULT AND DISCUSSION

Maritime education and training institutions in this study refer to those under the supervision of the Center for Human Resources Development of Sea Transportation and the Ministry of Transportation, including eight polytechnics, two training centers, and one high school spread across Indonesia. Nine maritime education and training institutions are large organizations that employ more than 100 employees, including teachers and staff. Of the respondents' experience in the education sector, 69 percent have experience of more than five years, while 31 percent have experience of more than 15 years. All these organizations have implemented a quality management system based on the ISO 9000 series, of which 64 percent have implemented the ISO 9000 series for over five years.

Elements of TQM Adopted at Maritime Education and Training Institutions

All maritime education and training institutes have incorporated the TQM element, consisting of ten high-level elements. From each measured variable in the TQM element, the average score for each TQM element is calculated, and the implementation level is obtained as shown in Table 1:

Table 1. Elements of TQM adopted by maritime education and training institutions

TQM Elements	Average score	Cronbach's Alpha
Strategic quality planning	5.99	0.90
Information and Analysis	5.90	0.81
Employee and teaching staff management and engagement	5.86	0.92
Knowledge and Education	5.80	0.94
Top management leadership and commitment	5.76	0.94
Process Management	5.76	0.89
Customer focus (students)	5.69	0.80
Provider management	5.67	0.86
Continuous improvement	5.67	0.85

Note: * 1=zero, 2=very low, 3=low, 4=medium, 5=high, 6=very high, 7=highest level

From Table 1, it can be seen that the participating institutions in this study adopted all elements of TQM broadly. TQM features most commonly used by maritime education and training institutes include strategic quality planning, information and analysis, management, and active participation of teaching staff and employees. Elements of TQM related to customer focus, provider management, and continuous improvement were adopted to a lesser extent than others.

Total Quality Management results gained in maritime education and training institutions

In line with the TQM elements adopted at a high level, the TQM results achieved also show a high level, even a very high level, for improving operational performance. From each variable measured in the TQM results, the average score is calculated, and the level of results achieved is obtained as shown in Table 2:

Table 2. TQM results gained by maritime education and training institutions

TQM Results	Average score	Cronbach's Alpha
Improved operational performance	6.06	0.81
Satisfaction of teaching staff and employees	5.90	0.81
Customer satisfaction (students)	5.79	0.77
Improved market performance	5.79	0.86
Improved service quality performance	5.71	0.70
Positive impact on society	5.69	0.90
Improved financial performance	5.54	0.92

Note: * 1=zero, 2=very low, 3=low, 4=medium, 5=high, 6=very high, 7=highest level

From [Table 2](#), most TQM results are related to improving operational performance, teaching employees and employee satisfaction, and boosting customer satisfaction, as observed. Besides, the majority of the quality management representative coordinators in the sample of institutions are defined as having a high degree of education and extensive experience in the educational field. However, they are educated, experienced, and familiar with implementing quality management systems in the maritime education sector, such as ISO 9001 and TQM.

Implementation of TQM Elements in Maritime Education and Training Institutions

The extent to which TQM elements were implemented by maritime education and training institutions sample deserves discussion. Strategic quality planning is the most widely adopted element and is the highest adopted. According to Sila and Ebrahimpour (2015), the organization's strategic quality planning incorporates the institution's vision, mission, and values. They are developed with the idea of excellence in mind. Employees are working to establish the vision, mission, strategy, and goals through successful strategic quality planning activities. It makes it easier for employees to adopt and support the strategic quality plan. An effective strategic quality planning takes into account the plan's potential negative influence on the environment. According to [Abdullahi and Kinyua](#) (2018), strategic planning and organizational success are inextricably linked. [Irfan et al.](#) (2021) add that strategic quality planning has proven to be an important indicator of quality management. Strategic planning and implementation challenges include inadequate financing, low or non-existent levels of commitment, resistance to change, and politics that often occur in higher education in developing countries. However, [Mensah et al.](#) (2020) confirm that with dedicated management and leadership backed by committed expert planners, monitors, and evaluators, the experience, intuition, creativity, and participation needed can be brought to bear on the challenges of ensuring that strategic plans truly drive the institution's quality agenda in developing countries. Human resource utilization, information, leadership, commitment, also strategic planning on quality are all critical.

The following TQM elements concern the organization's human resources, particularly teaching and employee resources management. Employees at institutions, including teaching staff, seem to participate actively in their organization's system. These results show that the institution places a high score on quality practices that strengthen the role of all organization members in quality management. Similarly, the institutions are concentrating on developing a successful strategic quality strategy for human resources. The institutions in the sample appear to be process-oriented. In the context of quality, they manage and continuously improve their educational and administrative operations. They gather and analyze quality data on process and service characteristics and performance indices. They also improve all employees' knowledge of their tasks and quality issues. Suppliers may be included in the management system, but this is a low priority for the institution.

Institutions' attention to the human side of their business, including the management teams, instructional workers, and staff members, as well as students, is consistent with [Fajar and Hartanto](#) (2020), which emphasizes the importance of governance of educators and education personnel in maritime vocational higher education in Indonesia. In Government Regulation of the Republic of Indonesia Number: 51 of 2012 concerning Human Resources in the transportation sector, it is stated that efforts to improve and optimize shipping for national development can be reviewed through training and education in the transportation sector also the provision of educators and education staff ([Fajar & Hartanto, 2020](#)).

The analysis results on the TQM element with the highest level were adopted by the shipping polytechnic, which has implemented the ISO 9000 series quality management model with an up-to-date version, namely ISO 9001:2015. When asked how their quality management system implementation in the institution as a whole and what aspects need to be improved, respondents from the institution stated that the implementation of quality management was continuously carried out and improved, especially in the human resource element.

R1: *"So far, it has been going on with socialization, and the aspect that needs to be improved is HR."*

The statement is in line with [Madanat and Khasawneh \(2017\)](#), who state that continual improvement plays a significant role in improving the quality of training programs because the primary goal of training is to improve personal knowledge and abilities continuously. As a result, management should promote quality-oriented training and development by employing effective methodologies and focusing on quality training issues such as quality awareness, problem-solving skills, service management, quality management, team working, and customer satisfaction. The application of TQM principles has a significant impact on the effectiveness of training and development.

Meanwhile, for the lowest level in implementing TQM elements in one of the shipping polytechnics, it was stated that it was due to the lack of top management roles.

R2: *"Management awareness is less active."*

This statement is consistent with [Kigozi \(2019\)](#), who found that a lack of managerial commitment is one of the challenges in implementing TQM. Management's commitment includes providing the resources required to carry out specific functions properly. One of the primary reasons for TQM failure is a lack of top management commitment to TQM initiatives ([Kumar et al., 2020](#); [Sohel-uz-zaman et al., 2019](#)). It emphasizes top management engagement as a success factor, but it also considers its absence a barrier, which invariably leads to the failure of TQM efforts. For effective implementation, the management team must have a clear goal of adopting TQM communicated to the organization members, be consistent in implementing TQM principles and be flexible to any change for improvement. In addition, the competencies and characteristics of organizational leaders, such as personal, social, managerial, supervision and entrepreneurship are also important factors in implementing environmental management to increase organizational capacity ([Yunus et al., 2017](#)).

Furthermore, in their research, [Gomes and Panchoo \(2017\)](#) also conclude that the lack of management commitment in educational education organizations is the main challenge faced in implementing TQM. It, in turn, hinders improvement in the process because no improvement can occur without managerial commitment. To be successful, TQM must be initiated and maintained by top management. Leaders have a critical role in attempts to improve educational quality. TQM implies an ongoing effort to improve quality and customer satisfaction through the organization as a whole, where success is determined by management commitment ([Wibowo and Corresponding, 2020](#)). A commitment must be consistent and supportive of guaranteeing that excellence becomes a way of life for the institution.

Achievement of TQM Results

By adopting elements of TQM broadly, Maritime education and training institutions achieved significant results not only in terms of the institution's internal but also external environment, and more specifically in terms of improving operational performance, teaching staff and employee satisfaction, and customer satisfaction. The results align with the elements that have been implemented that the most widely adopted strategic quality planning has an impact on improving operational performance, and the involvement and management of teaching staff and employees gives satisfaction results for them as well. This result supports [Ali et al. \(2020\)](#), who state a strong relationship between TQM practices and their corresponding TQM results.

Results regarding the external environment, including society, students, and the market, are also achieved at a high level but lower when compared to the results of the internal environment. Positive environmental support and feedback can increase job satisfaction and maintain organizational effectiveness in the long term ([Leh & Bin Ibrahim, 2019](#)). Service quality is improving by implementing TQM elements that focus on customer satisfaction. Thus, the institution will get trust and loyalty from the customers. The above results confirm the results of [Firman et al. \(2020\)](#), which state that TQM is sufficient to achieve market-targeted results, create innovation, and improve organizational performance, especially internal processes. The lowest results of TQM implementation are related to the organization's financial performance. [Firman et al. \(2020\)](#) also believe that in non-profit organizations such as education, TQM significantly impacts organizational processes and services rather than financial success.

The results of TQM elements being implemented in maritime education and training institutes demonstrate a high to very high success. TQM elements implemented in the institutions can improve the institution's performance, both internal and external. Furthermore, comments from respondents on TQM results show a relationship between the level of application of TQM elements with the results perceived by the organization, as stated by [Martin and Thawabieh \(2018\)](#) that TQM has a positive and significant effect on the operational performance of higher education. Based on the evaluation of TQM in maritime education and training institutions, institutions can build a robust TQM implementation model, which can help them maintain competitive quality and get significant benefits. In other words, institutions can be more competitive in today's global competition, which will help to survive and win the competition.

CONCLUSION

TQM still plays an important role in running organizations, primarily non-profit organizations such as higher education. The results found that the Indonesian maritime education and training institutions had adopted all elements of TQM and obtained high results from implementing TQM in organizations. The most widely adopted element is organizational strategic quality planning, indicating that maritime education organizations have carried out strategic quality planning carefully. The findings reflected a high to very high level of TQM practices by the institutions participating in the study. Measuring TQM elements and their results in maritime education and training institutions will be useful for policy makers and researchers. By knowing the elements of TQM that institutions mostly adopt, policymakers can prioritize and determine potential areas for improvement. Many research studies have limitations, and so does this research. Although the maritime education and training institutions participating in this study are in sufficient proportion to represent the population of the state maritime education and training institutions under the supervision of the Ministry of Transportation of the Republic of Indonesia, the sample size is not large enough to apply generalization in a larger population. Furthermore, it should be mentioned that the data in this study is in the form of subjective evidence gathered from institution management representatives. Given the limitations of the research, it is recommended that further studies cover all maritime education and training institutions, both public and private, of various types in Indonesia. Further research is also recommended to explore more deeply with a qualitative or mixed approach so that the findings may better reflect the state of Indonesian maritime education and training institutions in terms of Total Quality Management.

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REFERENCES

- Abdullahi, M. O., & Kinyua, G. (2018). Total Quality Management Practices And Performance Of Garissa County Government , Kenya. *International Journal of Contemporary Aspects in Strategic Management (IJCASM)*, 2(1), 253–27.
- Ahmed, F. B. J. (2020). *Challenges of the Knowledge Society : Exploring the Case of Qatar Challenges of the Knowledge Society : Exploring the Case of Qatar*. May.
- Ali, S., Abir, R., Naqvi, H., & Ali, S. (2020). An Investigation of the Corporate TQM Practices and Corresponding Results in Pakistani Perspective : Implications for Business Education. 42(3), 51–77.
- Ashmel, M., Hashim, M., Tlemsani, I., & Matthews, R. (2021). Higher education strategy in digital transformation. *Education and Information Technologies*, August. <https://doi.org/10.1007/s10639-021-10739-1>
- Aziz, S., Mahmood, M., & Bano, M. S. (2018). Total Quality Management: A Frame Work for Higher Education Institution. *Journal of Research in Social Sciences-JRSS January*, 6(1), 124–141. <https://search.proquest.com/openview/978503a4ec5fbc0e2aa68c8786bf3126/1?pq-origsite=gscholar&cbl=2030756>
- Bertillo, J. B., & Lacambra, E. A. (2017). *The Implementation of Total Quality Management In Maritime Educational Institutions in The Philippines*. <https://ssrn.com/abstract=2896494>
- Bishnoi, N. (2018). *Total Quality Management (TQM) in Education : A Revolution Do*. 9(2), 273–276.
- Burhanuddin, B., & Supriyanto, A. (2018). The Use of TQM as A Model to Improve University Performance in Indonesia. *International Research-Based Education Journal*, 1(2), 108. <https://doi.org/10.17977/um043vi2p108-114>
- Creswell, J. W. (2012). Educational research : planning, conducting, and evaluating quantitative and qualitative research. In book (Fourth Edi, Vol. 4, Issue 1). Pearson Education, Inc. <https://doi.org/10.4324/9781315092171-19>
- Drucker, P. F. (2011). *Post-Capitalist Society*. In Routledge Taylor & Francis Group.
- Erdogan, O., & Demirel, E. (2017). New Technologies in Maritime Education and Training, Turkish Experiment. *Universal Journal of Educational Research*, 5(6), 947–952. <https://doi.org/10.13189/ujer.2017.050606>
- Errabou, A. A. (2013). *Total Quality Management as A Mechanism to Enhance Quality in Higher Education in Libya* [Doctoral dissertation, Coventry University].

- Fajar, C., & Hartanto, B. (2020). Analisis tata kelola standar pendidik dan tenaga kependidikan pada pendidikan tinggi vokasi kemaritiman di Indonesia. *Jurnal Sains Teknologi Transportasi Maritim*, 2(1), 20–29.
- Firman, A., Mustapa, Z., & Ilyas, G. B. (2020). Relationship of TQM on Managerial Performance : Evidence From Property Sector in Indonesia. *Journal of Distribution Science*, 18(1), 35–45.
- Gomes, T., & Panchoo, S. (2017). *TQM in Private Secondary Education in Mauritius*. 4(4).
- Hasham, E. S. (2018). Academic Institutions Are No Different to Any Other: Total Quality Management Does Enhance Performance. *International Journal of Organizational Leadership*, 7(4), 348–373. <https://doi.org/10.33844/ijol.2018.60340>
- Indonesia. (2013). *Peraturan Menteri Perhubungan Nomor PM 70 Tahun 2013 tentang Pendidikan dan Pelatihan Sertifikasi serta Dinas Jaga Pelaut*. Menteri Perhubungan. Jakarta.
- Irfan, M., Malikb, M. S., Aslam, L., Afzal, N., & Ali, M. H. (2021). Structured Equation Model on Strategic Quality Planning, HR Utilisation, Information Analysis and Hospital Quality Performance. *International Journal of Innovation, Creativity and Change*, 15(7), 495–515.
- Khurniawan, A. W., Sailah, I., Muljono, P., Indriyanto, B., & Maarif, M. S. (2020). An Analysis of Implementing Total Quality Management in Education : Succes and Challenging Factors. *International Journal of Learning and Development*, 10(2), 44–59. <https://doi.org/10.5296/ijld.v10i2.17270>
- Kigozi, E. (2019). *Challenges to Successful Implementation of Total Quality Management (TQM) in Education Institutions : A Case of Selected Primary Teacher Training Colleges (PTTCs) in Uganda*. 6(3), 425–435.
- Kistiani, D. P., & Permana, J. (2020). *The Importance of Application Total Quality Management at Higher Education*. 400(Icream 2019), 177–180. <https://doi.org/10.2991/assehr.k.200130.165>
- Kumar, V., Verma, P., Mangla, S. K., Mishra, A., Chowdhary, D., Sung, C. H., & Lai, K. K. (2020). *Barriers to total quality management for sustainability in Indian organizations*. *International Journal of Quality & Reliability Management*, 37(6), 1007–1031. <https://doi.org/10.1108/IJQRM-10-2019-0312>
- Leh, L. Y., & Bin Ibrahim, Z. H. (2019). The Influence Of Feedback Environment Towards Job Satisfaction In Tvet Education Organization. *JPI (Jurnal Pendidikan Indonesia)*, 8(1), 96. <https://doi.org/10.23887/jpi-undiksha.v8i1.16471>
- Madanat, H. G., & Khasawneh, A. S. (2017). Impact of total quality management implementation on effectiveness of human resource management in the Jordanian banking sector from employees' perspective. *Academy of Strategic Management Journal*, 16(1), 114–148.
- Martin, A., & Thawabieh, F. A. (2018). The Effect of ISO 9001 to Oman Higher Education Operational Performance : Buraimi University College as a Case Study. *International Journal of Applied Engineering Research*, 13(6), 3939–3947.
- Mensah, J., Coast, C., & Coast, C. (2020). Improving Quality Management In Higher Education Institutions In Developing Countries Through Strategic Planning. *Asian Journal of Contemporary Education*, 4(1), 9–25. <https://doi.org/10.18488/journal.137.2020.41.9.25>
- Mukhuti, A. (2019). Issues of Globalization and Higher Education : It' s Impact on Human Resource Development. *Journal of Arts, Humanities and Social Sciences*. 5–8.
- Mumuni, Y., & Aboagye, G. K. (2017). Total Quality Management (TQM): A Continuous Improvement Framework for Boosting Higher Education in Ghana. *International Journal of Education and Evaluation*, 3(11), 37–47.
- Muszy, K. (2017). *Management Systems of Gdynia Maritime University' s the Training Ships Operation*. 11(4), 627–632. <https://doi.org/10.12716/1001.11.04.08>
- Octavianus, S., Triposa, R., Sari, D., Mononimbar, Y., & Parluhutan, T. (2021). The Role of TQM Approach in Indonesia Higher Education Quality Assurance. *International Conference on Law, Social Science, Economics, and Education ICLSSEE 2021*. <https://doi.org/10.4108/eai.6-3-2021.2306449>
- Papantymou, A., & Darra, M. (2017). Quality Management in Higher Education: Review and Perspectives. *Higher Education Studies*, 7(3), 132. <https://doi.org/10.5539/hes.v7n3p132>
- Psomas, E., & Antony, J. (2017). Total quality management elements and results in higher education institutions: The Greek case. *Quality Assurance in Education*, 25(2), 206–223. <https://doi.org/10.1108/QAE->

08-2015-0033

- Sabra, H. E., Abd El zaher, O. M., & Mohamed, S. S. (2020). Obstacles of Implementing Total Quality Management in Higher Education Institutions: Academic Staff' perspective. *Assiut Scientific Nursing Journal*, 8(23), 49-61. doi: 10.21608/asnj.2020.48634.1067.
- Sohel-uz-zaman, A. S., Kabir, A. I., & Osman, A. R. (2019). *TQM in Higher Education : A Search for New Insight*. Ssme, 437-446.
- Standard of Training, Certification and Watchkeeping for Seafarer, (2011).
- Suriansyah, A. (2017). Implementation of The Total Quality Management Model to Support Quality of Work Cultures at Primary School Teacher Education Programs in Lambung Mangkurat University Indonesia. *Australian Journal of Basic and Applied Sciences*, 11(June), 179-186.
- Talapatra, S. (2018). Some obstacles that affect the TQM implementation in Bangladeshi RMG Sector : An empirical study. *Proceedings of the International Conference on Industrial Engineering and Operations Management, Indonesia*, 8, 1290-1302.
- Tsvetkova, E., & Lomer, S. (2019). Academic excellence as "competitiveness enhancement" in Russian higher education. *International Journal of Comparative Education and Development*, 21(2), 127-144. <https://doi.org/10.1108/IJCED-08-2018-0029>
- Ullah, W., Jehan, N., Malik, M. F., & Ali, A. (2017). The Impact of Total Quality Management (TQM) in Higher Education : A Qualitative Insight of Higher Education in Universities. *Journal of Managerial Sciences*, XI(03), 445-458.
- Verbytska, A. (2018). The Strategies Of Higher Education Internationalization In The Context Of Providing The Competitiveness Of The National Educational Model. *IV International Scientific Conference Teaching And Learning Of International Students In Ukraine. Challenges And Perspectives*, 38-41.
- Wang, M. L., Wang, K., & Samadhiya, D. (2017). Key Factors on Construction of Competitiveness Using the Perspective of Financial Allocation and TQM - Taking an Example of Educational Training Institutes In Taiwan. *IJER - International Journal of Economics and Research*, 7-32.
- Yunus, M., Dewi, K., Andari, W., & Islam, M. A. (2017). The Principal's Competences in Implementing Cultural and Environmental Management Of The School In SDN 033 Tarakan. *Jurnal Pendidikan Indonesia*, 6(2), 263-273. <https://doi.org/10.23887/jpi-undiksha.v6i2.11982>