Business Education Journal 12 (2026)

https://doi.org/ 10.54156/41ycwv18 journal homepage: https://bej.cbe.ac.tz

Total Quality Management with Information Technology for Strengthening Customer Satisfaction: A Case of Higher Education Institutions in Tanzania

Anna Kayanda [a *], Salim Saika [a]

[a]Deparment ICT and Mathematics, College of Business Education, Dar es Salaam, Tanzania, Tanzania.

*Corresponding author
E-mail address: anakayanda@gmail.com

Abstract

The increasing competition among higher education institutions (HEIs) in Tanzania has highlighted the need for innovative approaches to enhance institutional performance and customer satisfaction. This study examined the role of Information Technology (IT) in supporting Total Quality Management (TQM) in Tanzania's HEIs, with a specific focus on management operations. The research explored how IT tools can enhance TQM practices to improve efficiency, quality, and response time in the service delivery process. A mixed-methods case study approach was employed, combining observation, unstructured interviews, and questionnaires. A total of 123 participants were involved in the survey, whereas 6 participants contributed through observations and interviews at a purposively selected Tanzanian HEI. The survey findings show that work efficiency and service time influence customer satisfaction. However, it was found that the use of IT to support TQM practices positively influences the quality of service provided but does not affect working efficiency or service delivery time. While the study emphasised management operations, it did not consider TQM in teaching and learning, indicating an area for future research. The study underscores that integrating IT with TQM presents a practical pathway for Tanzanian HEIs to enhance operational quality, improve customer satisfaction, and achieve long-term competitiveness and sustainability.

Keywords: *Total Quality Management; Information Technology; Customer Satisfaction; Higher Education Institutions; Tanzania.*

1.0 Introduction

Quality management is crucial for any organisation seeking to remain sustainable in the market. Recently, Total Quality Management (TQM) has emerged as a key factor in improving performance and achieving continuous improvement in Higher Education Institutions (HEIs) (Cabacang, 2021). According to Salleh et. al. (2018), TQM is defined as "a way of managing to improve the effectiveness, efficiency, cohesiveness, flexibility and competitiveness of a business as a whole". TQM is also defined by Arokiasamy & Krishnaswamy (2021) as "a general management theory and a collection of tools that enable an organisation to follow a concept of quality and a means of achieving quality, with quality being defined as a continuous improvement as determined by customers' satisfaction with services obtained".

The competition among HEIs in Tanzania is currently exceedingly high; therefore, customer satisfaction is crucial. Like any other organisation, Tanzanian HEIs need to incorporate TQM principles into their management processes to remain sustainable in the market. It is known that operations in HEIs are more challenging and complex than in other organisations (Psomas & Antony, 2017). However, TQM principles can still be applied, with the support of currently available technologies, to help HEIs achieve high levels of performance. Studies have demonstrated challenges in implementing TQM in education, yet they also show that it is very useful in these educational institutions (Arokiasamy & Krishnaswamy, 2021).

In the current technological world, the use of Information Technology (IT) is crucial to ensuring the

Cite paper: Kayanda, A. & Saika, S. (2026) Total Quality Management with Information Technology for Strengthen-ing Customer Satisfaction: A Case of Higher Education Institutions in Tanzania, *vol* (12), Issue 1: 10 pages.

smooth, high-performance delivery of services in any organisation. IT helps reduce bureaucracy by removing operational isolation (Papanthymou & Darra, 2018), thereby improving performance. Though most Tanzanian HEIs are trying to use IT in their daily operations to ensure quality, customer satisfaction remains a problem.

Many Tanzanian HEIs are working hard to ensure the quality of their services (Kimaro & Rubeba, 2018; Nyamesa et. al., 2020; Mgaiwa, 2021). Most Tanzanian HEIs are working hard to integrate IT services into their daily operations to support their quality management initiatives (Mtebe & Raphael, 2018; Kayanda et al., 2019). It is known that the use of IT helps improve organisational performance (Basri et al., 2018; Antoni et al., 2020), yet poor service performance persists in many Tanzanian HEIs. Is the problem with the IT services provided or with the adoption process of IT in TQM? For example, some information systems have already been implemented in these HEIs, yet customer satisfaction with the operations of many Tanzanian HEIs remains low. This study, therefore, aimed to examine how the use of IT in TQM can improve performance levels in HEIs to satisfy their customers—specifically, to fulfil three objectives. Firstly, exploring how the IT services currently support the HEI in TQM in managing their different operations. Secondly, explore the TQM challenges facing HEIs in managing their diverse operations, and finally propose a better way to support TQM principles through IT to improve HEI operations management and ensure high customer satisfaction. This study aims to help Tanzanian HEIs determine how IT services can better support them in the TQM process to achieve high customer satisfaction. To fulfil the objectives mentioned, the study answered three research questions:

1. How do the available IT services support TQM in managing different organisational operations in Tanzania's HEIs context?
2. What are the TQM challenges in handling different management operations in Tanzania's HEIs context?
3. How can the IT services support Tanzania's HEIs on TQM for better management of their operations to ensure high customer satisfaction?

2.0 Literature review

Given the current competitive environment among Tanzanian HEIs, it is necessary to rethink how to survive. Sahney (2016) emphasised that educational institutions should understand the importance of TQM for achieving competitiveness, surviving in the market, and succeeding in the long run by considering the voice of the customer. Improving customer satisfaction is considered an important factor for Tanzanian HEIs to survive in the market in the long run. Studies by Al-Amri & Wong (2019) and Anil & Satish (2019) showed that the adoption of TQM practices enhances performance in meeting customer needs. Horban, Kuprii, Martych, and Panasiuk (2020) showed that the impacts of TQM in educational management can be observed in the adoption of the continuous improvement philosophy, along with practical actions to set tools and methods for successfully implementing this philosophy. Practical skills for addressing leadership, organisational, and teamwork issues should be considered to effectively manage the implications of TQM in HEIs (Sallis, 2014) and to improve HEIs' performance in serving their customers satisfactorily.

Studies show that using IT to manage organisational processes significantly improves organisational performance (Basri et al., 2018; Antoni et al., 2020). Khanam, Talib, and Siddiqui (2020) showed that using IT tools with TQM helps in increasing customer satisfaction. According to Ray & Tripathi (2020), there exists a positive correlation between TQM and IT. It is therefore important for Tanzanian HEIs to find a better way to integrate IT tools with TQM processes to achieve high customer satisfaction and ensure their continuous development. Tasleem, Khan, and Nisar (2019) showed that well-managed technology, coupled with TQM, helps ensure organisational sustainability; therefore, it is important to find a better way to integrate technology with TQM in Tanzanian HEIs to support their sustainability.

In Europe, structured TQM frameworks have been shown to improve process efficiency, accountability, and stakeholder satisfaction, although explicit integration of IT tools remains limited (Krymets, 2022). In the United States, strong leadership combined with TQM practices enhances student satisfaction and institutional reputation, but digital systems that support TQM have not been extensively

Cite paper: Kayanda, A. & Saika, S. (2026) Total Quality Management with Information Technology for Strengthen-ing Customer Satisfaction: A Case of Higher Education Institutions in Tanzania*, vol* (12), Issue 1: 10 pages.

examined (Yusuf, 2023). In Asia, research in Malaysia and China highlights the role of knowledge management and IT-enabled systems in mediating the impact of TQM on academic and administrative performance (Elmelhy, 2023; Wei, 2024). In Africa, studies from Ethiopia reveal that resource constraints, weak leadership, and limited adoption of digital technologies hinder effective TQM implementation, despite the recognition of its importance for quality enhancement (Yirga & Beshir, 2025). More recent global studies (2023–2025) demonstrate that the integration of artificial intelligence, big data analytics, and learning analytics can significantly strengthen quality assurance, decision-making, and student-centred outcomes in HEIs (Al Kadri, Christianingsih, & Maulana, 2023; Idan & Al-Amin, 2023; Ülker, 2023; Pham & Hota, 2025).

Despite the growing global evidence of TQM and IT integration, little is known about how these practices can be effectively leveraged to achieve sustainable improvements in customer satisfaction within the Tanzanian higher education context. Therefore, conducting research in this area is both timely and important.

2.1 Conceptual Framework

This study considers efficiency, quality, and service time as the main performance measures to ensure high customer satisfaction across different operations in the Tanzanian HEIs context. It is expected that if operations are managed efficiently, services will be provided in a timely and high-quality manner, resulting in high customer satisfaction. Customers in this study are mainly students and staff who receive services from various offices within these Tanzanian HEIs.

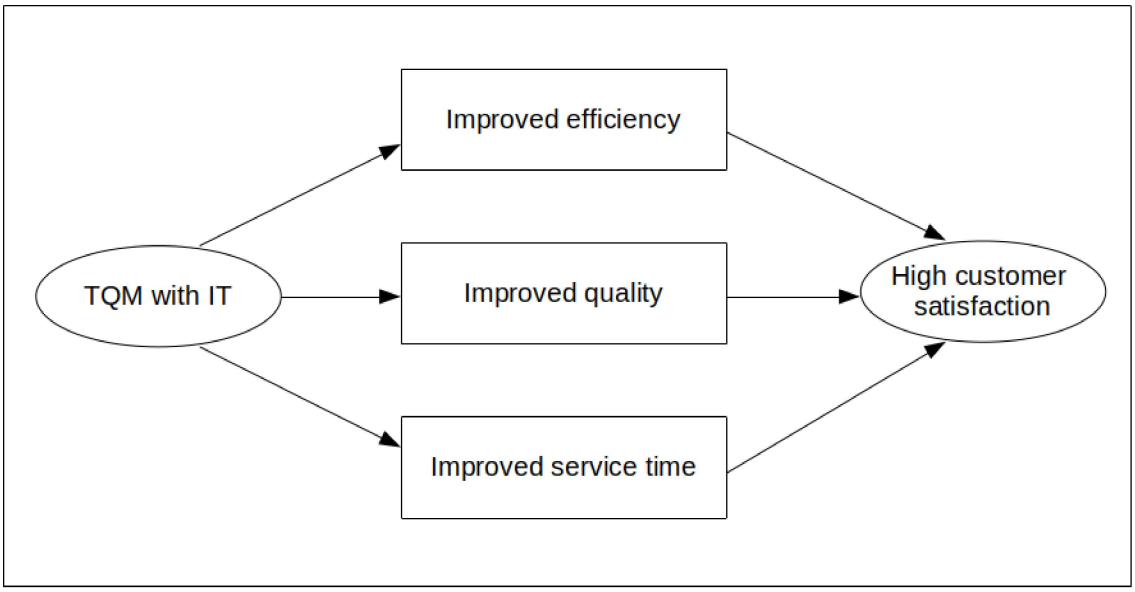

Figure 1 Conceptual framework on ensuring high customer satisfaction in Tanzania's HEIs with TQM supported by IT

In its theoretical framework, this study will be grounded in Total Quality Management (TQM) and supported by Information Technology (IT) practices. TQM is a holistic management philosophy that emphasises continuous improvement, customer satisfaction, and organisational excellence through the active participation of all stakeholders. It rests on several key principles, including customer focus, continuous improvement, leadership commitment, employee involvement, process-centred management, integrated systems, and evidence-based decision making. According to Murtadlo (2019), TQM helps institutions establish and sustain a quality culture in which every member contributes to delivering services that meet or exceed customer expectations. Recent studies also reaffirm that TQM principles—particularly customer focus, leadership, and continuous improvement—remain critical in the education sector (Sandel & Kulualp, 2024).

Cite paper: Kayanda, A. & Saika, S. (2026) Total Quality Management with Information Technology for Strengthen-ing Customer Satisfaction: A Case of Higher Education Institutions in Tanzania, *vol* (12), Issue 1: 10 pages.

When supported with IT, these principles become even more impactful in the context of Tanzanian Higher Education Institutions (HEIs). For instance, customer focus is strengthened through online service platforms that make access to academic and administrative services faster and more transparent (Lepistö, Saunila, & Ukko, 2024). Continuous improvement is supported by data analytics and feedback systems that enable institutions to track performance and adjust strategies in real time (Al-Muhith, Mislikhah, Fatmawati, Umam, & Mu'allimin, 2022). Leadership commitment is enhanced through IT-based planning and monitoring tools that ensure accountability and strategic alignment (Zarkasi, Safinah, Yanti, & Indra, 2024). Similarly, employee involvement is improved when staff use IT tools to collaborate and share knowledge across departments (Sandel & Kulualp, 2024).

Therefore, integrating TQM with IT is expected to improve efficiency in service delivery, raise the quality of academic and administrative services, and shorten response times for these services. This, in turn, is expected to foster higher levels of student and stakeholder satisfaction and position Tanzanian HEIs to compete more effectively in the global education landscape (Lepistö et al., 2024; Zarkasi et al., 2024). Based on this study's conceptual framework, several hypotheses were formulated and are presented in Figure 2:

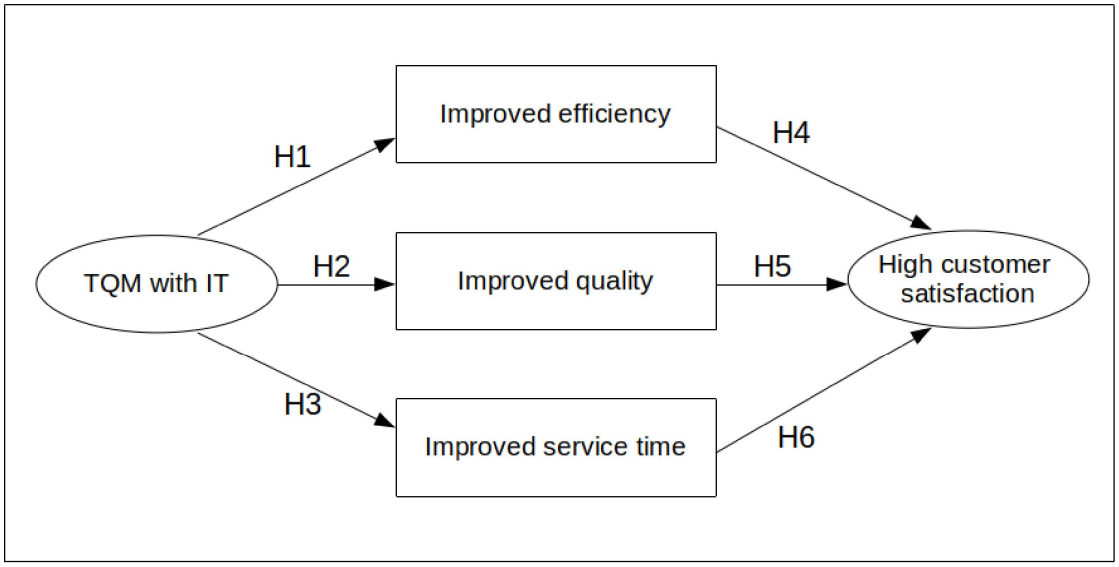

Figure 2 Ensuring high customer satisfaction in Tanzanian HEIs with TQM supported by IT

H1: TQM with IT leads to improved efficiency in service provision to the customers

The study assumes that the use of TQM principles, supported by IT, improves work efficiency in the context of Tanzania's HEIs.

H2: TQM with IT leads to improved quality of service provided to the customers

The study assumes that the use of TQM principles, supported by IT, improves service quality for customers in Tanzania's HEIs.

H3: TQM with IT leads to improved service time in providing different

The study assumes that the use of TQM principles, supported by IT, leads to improved service time. IT helps simplify work, so services are delivered on time and response times to customer queries improve.

H4: Improved efficiency in service provision leads to high customer satisfaction

The study assumes that improved working efficiency also leads to higher customer satisfaction.

H5: Improved quality of services provided leads to high customer satisfaction

The study assumes that with improved quality of service, the level of customer satisfaction also improves.

Cite paper: Kayanda, A. & Saika, S. (2026) Total Quality Management with Information Technology for Strengthen-ing Customer Satisfaction: A Case of Higher Education Institutions in Tanzania, *vol* (12), Issue 1: 10 pages.

H6: Improved service time leads to high customer satisfaction

The study assumes that as service time improves, customer satisfaction also improves.

3.0 Research Methodology

The study employed a sequential mixed-methods approach to fulfil its objectives, integrating qualitative and quantitative methods.

The geographical scope is limited to Tanzanian higher education institutions (HEIs), where increasing competition and demand for accountability have created the need for innovative approaches to enhance performance and customer satisfaction. The study involved selected staff and students from a purposively selected HEI in Tanzania. Observation, unstructured interviews, and questionnaires were used to explore the problem in depth.

Both methodological and data-source triangulation were employed (Flick, 2018; Carter et al., 2014). The questionnaire was used to quantitatively assess various aspects of IT services supporting TQM. To support the quantitative findings, observations and an unstructured interview were conducted. The study involved some purposively selected activities (such as student records management, examination management, certification, student accommodation allocation, and payment management) for observation (Flick, 2018). During the observation process, unstructured interviews were also conducted as needed.

3.1 Data Collection

The study involved one purposively selected HEI in Tanzania. The HEIs were selected based on the researchers' prior experience using IT services at these HEIs. Data collection was done sequentially, starting with a questionnaire-based survey, followed by observation and an unstructured interview. In conducting the survey, the questionnaire was distributed to 123 participants, including 40 teaching and non-teaching staff and 83 bachelor students, using random selection. The questionnaire was distributed to the students and staff and then collected after two weeks. Only 37 staff and 68 students responded to the questionnaire.

The participants in the observation and interviews were 06 purposively selected staff and students, chosen for their ability to answer the questions well, given their experience with the selected observation activities (Cresswell, 2014). The observation was conducted at different times over three months, alongside an unstructured interview. The participants were involved voluntarily.

3.2 Data analysis

The quantitative data analysis was conducted using SPSS. Regression analysis was employed to test the study's hypotheses and determine the strength and significance of the relationship between IT integration and the effectiveness of TQM in enhancing customer satisfaction. These quantitative results were used not only to confirm the hypothesised relationships but also to guide the selection of observation activities for the next stage of the study. The qualitative data were thematically analysed by reviewing interview notes and transcripts to identify recurring patterns, insights, and practical examples of IT-supported TQM practices. Triangulation of the quantitative and qualitative results enabled the study to validate findings, enrich interpretations, and provide a holistic understanding of how IT contributes to improving TQM in the management operations of Tanzanian HEIs, particularly in terms of efficiency, responsiveness, and quality of service delivery.

4.0 Findings

The reliability of the constructs used in the survey was first tested, followed by a regression analysis to test the proposed hypotheses. The reliability of the construct used was assessed using Cronbach's alpha, with findings indicating an acceptable level of 0.70 or higher (Anil & Satish, 2019), as presented in Table 1:

Cite paper: Kayanda, A. & Saika, S. (2026) Total Quality Management with Information Technology for Strengthen-ing Customer Satisfaction: A Case of Higher Education Institutions in Tanzania*, vol* (12), Issue 1: 10 pages.

https://doi.org/ 10.54156/41ycwv18 journal homepage: https://bej.cbe.ac.tz

Table 1 Cronbach's alpha (α) for individual variables.

Construct	Number of items	Cronbach's alpha
TQM with IT (TQM)	3	0.89
Improved efficiency (IE)	3	0.73
Improved service quality (ISQ)	3	0.87
Improved service time (IST)	3	0.71
High customer satisfaction (CS)	3	0.71

The content validity of the constructs used was established through a review by three other researchers. This helped correct some small, noted mistakes, and the instrument was thereafter considered sufficiently relevant to conduct the survey.

The results of the regression analysis showed that TQM supported by IT influences only service quality ($p < 0.005$) but not working efficiency or service delivery time ($p > 0.005$). It was also found that working efficiency and service delivery time influence customer satisfaction ($p < 0.005$), whereas service quality does not ($p > 0.005$). The results are presented in Figure 3.

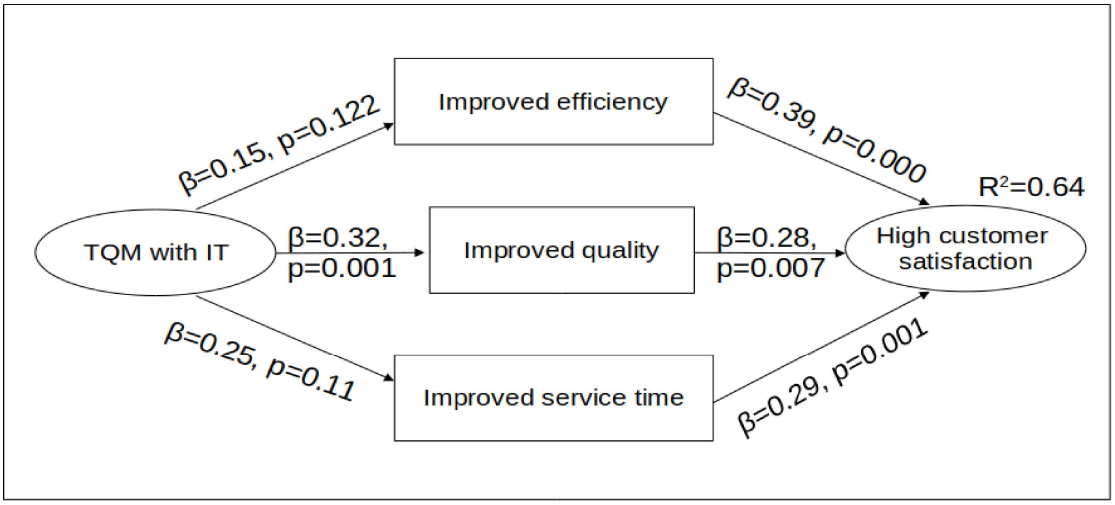

Figure 3 Hypothesis test results

Table 2 Path coefficients

Path	β	p value	Remark
TQM → IE (H1)	0.15	0.122	Not supported
TQM → ISQ (H2)	0.32	0.001	Supported
TQM → IST (H3)	0.25	0.11	Not supported
IE → CS (H4)	0.39	0.000	Supported
ISQ → CS (H5)	0.28	0.007	Not supported
IST → CS (H6)	0.29	0.001	Supported

Qualitative findings from observations and unstructured interviews supported the quantitative findings.

Cite paper: Kayanda, A. & Saika, S. (2026) Total Quality Management with Information Technology for Strengthen-ing Customer Satisfaction: A Case of Higher Education Institutions in Tanzania, *vol* (12), Issue 1: 10 pages.

https://doi.org/ 10.54156/41ycwv18 journal homepage: https://bej.cbe.ac.tz

The results of the observations and interviews identified five themes. The themes are presented in Table 3, along with main observations and sample statements from the interviews.

Table 3 Themes obtained

Theme	Observation	Statement
Technical support	It was observed that technical support is challenging. Some users needed intensive support due to techno-phobia issues. It was also observed that system experts get tired of providing timely support, and hence, service providers get swamped with students' issues for an extended period.	*"Most of the time we fail to do this ... we do not get support on time"*
System quality	It was observed that some system functionalities do not adequately support the operations; therefore, technical support is always required.	*"... have you seen this? It is not doing as it is required, and I have to do it manually."*
Service quality	It was observed that the system supports the provision of good services. It was also observed that, due to some poor functionality, service providers frequently get stuck.	*" ... our services are currently not so bad... though sometimes the systems fail."*
Service time	It was observed that many students do not get service on time due to a lack of timely technical support when the service providers are overloaded.	*"... I followed up for three months to get my results ..."*
Customer care	It was observed that some service providers lack friendly customer service, leading to customer frustration.	*"... I was not happy the way he asked me that question... it is frustrating to come here... "*

5.0 Discussion

The discussion focuses on answering the study's research questions. To answer the research questions of this study, the findings from the hypotheses, together with the qualitative findings, were used. The findings from both quantitative and qualitative analyses are explained and support one another.

To answer the first question on how the available IT services support TQM in the management of different management operations in this selected HEI, it was observed that the available information systems are used to support different management operations like student records management, examination management, certification, student accommodation allocation, payments management and others, to mention a few. The use of the available systems has been shown to greatly simplify work at this HEI, and the quality of the delivered service seems good, though some challenges were also noted. One student said, "… we can make our payments easily through our phones … we can simply see the payments directly in the system…".

According to Khanam, Talib, and Siddiqui (2020), the use of IT in an organisation helps improve the quality of services provided, which is consistent with the findings of this study, as shown in Table 2 and Figure 3. This study found that the use of IT in supporting TQM practices positively influences the quality of service provided. This study also found that using IT to support TQM practices

does not influence work efficiency or service delivery time. This finding may imply that working efficiency and service delivery time are not directly influenced by TQM with IT, but only by the quality of service. For example, one staff member said, "We fail to give our students good services due to poor technical support … it may take even a week to solve a very small issue". This statement shows that service quality can be affected by issues such as technical support, resulting in poor customer care.

In answering the second research question of this study on the TQM challenges facing the selected HEI in managing various operations, it was observed that the HEI is working hard to ensure operations are carried out as planned, although challenges are inevitable. Khurniawan, Sailah, Muljono, Indriyanto, & Maarif (2020). Total quality management should provide the best way to ensure the continuous quality of products, services, and processes in the organisation. It was observed that poor customer care was the primary challenge to delivering quality services at the selected HEI. One staff member said, "… I feel bad to see a student going and coming back every day for something which could be done in a minute …". In practice, poor customer care may indicate low operational efficiency, which affects both service quality and service time. According to the findings of this study's survey, the use of IT to support TQM does not affect work efficiency, possibly because information systems are already in place. However, the observed problem was low working morale among some service providers, which led to poor customer care.

Finally, the third research question of this study, on how IT services can better support Tanzanian HEIs in TQM to improve the management of their operations and ensure high customer satisfaction, was also answered. The survey findings show that work efficiency and service time influence customer satisfaction. As noted by Khurniawan, Sailah, Muljono, Indriyanto, and Maarif (2020), Arokiasamy and Krishnaswamy (2021) in their studies, TQM helps ensure customer satisfaction. It is therefore important to ensure that TQM is effectively implemented in Tanzanian HEIs to improve operational efficiency and service delivery times, thereby achieving a high level of customer satisfaction. The implementation of IT services should be carefully considered to ensure effective integration with TQM, thereby enhancing customer satisfaction. As it was observed that technical support is challenging and system quality is poor, it is important to find a better way to help service providers enjoy the IT services provided and find them useful in their daily activities. The better the IT services, the lower the frustrations for both customers and service providers, and therefore the better the customer care. According to González-Gómez, Hudson, and Rychalski (2021), frustration affects customer satisfaction, which was also observed in this study. It was observed that due to a system failure, a service provider became frustrated after being unable to support a student. Thereafter, he lost control of his temper and mistreated a student, further frustrating the students. Therefore, system quality is an important aspect to consider for better support of TQM in the context of Tanzania's HEIs.

6.0 Conclusion

This study contributes to addressing these gaps by focusing on the role of IT in supporting TQM within the Tanzanian HEIs context, particularly in management operations. The findings provide practical insights for quality assurance and IT managers on how to optimise IT tools to strengthen TQM processes and improve institutional performance. Nevertheless, the study did not explore TQM in teaching and learning, indicating a need for further research to fully understand the potential of IT-enabled TQM to enhance both administrative and academic quality. Overall, integrating TQM and IT offers a valuable pathway for Tanzanian HEIs to achieve sustainable quality improvements, operational efficiency, and higher customer satisfaction, thereby enhancing institutional competitiveness and long-term sustainability.

Acknowledgements

Without the help of Dr. Godfrey Nkwera and Mr. Mathew Kilasi, who assisted the researchers with both quantitative and qualitative analyses, the analysis would have been daunting.

References

Al Kadri, H., & Susanti, L. (2022, November). Total Quality Management to Improve the Quality of Higher

Education in the 21st Century. In the *2nd Padang International Conference on Educational Management and Administration 2021 (PICEMA 2021)* (pp. 251–261). Atlantis Press.

Al-Amri, A., & Wong, T. C. (2019, March). Challenges of total quality management in higher education institutions. In the *9th International Conference on Industrial Engineering and Operations Management, IEOM 2019* (pp. 1200–1201).

Al-Muhith, A., Mislikhah, M., Fatmawati, F., Umam, K., & Mu'allimin, I. (2022). The impact of total quality management (TQM) on the effectiveness of the academic system at UIN KHAS Jember. *Al-Tanzim: Jurnal Manajemen Pendidikan Islam, 6*(3), 689–700. https://doi.org/10.33650/al-tanzim.v6i3.3334

Anil, A. P., & Satish, K. P. (2019). Enhancing customer satisfaction through total quality management practices–an empirical examination. *Total Quality Management & Business Excellence, 30*, 1528–1548.

Antoni, D., Jie, F. & Abareshi, A. (2020). Critical factors in information technology capability for enhancing firm's environmental performance: case of Indonesian ICT sector. *International Journal of Agile Systems and Management, 13*(2), 159. DOI:10.1504/IJASM.2020.10030232

Arokiasamy, A. R. A., & Krishnaswamy, J. (2021). Compatibility and Challenges of Implementing Total Quality Management In Education. *Proceedings on Engineering, 3*(4), 405–412.

Basri, W. Sh., Alandejani, J. A., & Almadani, F. M. (2018). ICT Adoption Impact on Students' Academic Performance: Evidence from Saudi Universities, *Education Research International*, 2018, https://doi.org/10.1155/2018/1240197.

Cabacang, S. G. (2021). Quality is Never an Accident: A Survey on the Total Quality-Management Practices amongst Selected Higher Education Institutions in the Philippines, *International Journal of Learning, Teaching and Educational Research*, *20*(10), 23–41. https://doi.org/10.26803/ijlter.20.10.2.

Carter, N., Bryant-Lukosius, D., A., B., J., & Neville, A. J. (2014). The use of triangulation in qualitative research. *Oncol Nurs Forum,* vol.41, no.5. doi: 10.1188/14.ONF.545-547. PMID: 25158659.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative and mixed methods approaches.* SAGE Publications, Inc.

Elmelhy, M. (2023). The influence of TQM successful implementation on international students' satisfaction in Malaysian universities. Geomatika Malaysia. https://www.gajrc.com/media/articles/GAJEB_55_117-129_FT.pdf

Flick, U. (2018). *Doing triangulation and mixed methods.* SAGE Publications Ltd.

González-Gómez, H. V., Hudson, S., & Rychalski, A. (2021). The psychology of frustration: Appraisals, outcomes, and service recovery. *Psychology & Marketing*, *38*(9), 1550–1575.

Horban, O., Kuprii, T., Martych, R., & Panasiuk, L. (2020). Implications of total quality management in Ukrainian higher education institutions: international experience. *Natsional'nyi Hirnychyi Universytet. Naukovyi Visnyk*, *2*, 126–130. https://doi.org/10.33271/nvngu/2020-2/126

Idan, M. F., & Al-Amin, M. (2023). *Procedural applications of Total Quality Management in higher education institutions*. SpringerOpen. https://bnrc.springeropen.com/articles/10.1186/s42269-023-01093-y

Kayanda, A. M., Busagala, L., & Tedre, M. (2019). Design and Implementation of Timetabling Software for Improved Decision-Making in the Tanzanian Higher Education Context: A Design Science Approach, IEEE Africon 2019, Accra, Ghana.

Khanam, S., Talib, F., & Siddiqui, J. (2020). An instrument validation of TQM enablers and IT resources in Indian ICT organisations. *Journal of Systems and Information Technology, 22* (2), 179–200. https://doi.org/10.1108/JSIT-01-2017-0004

Khurniawan, A. W., Sailah, I., Muljono, P., Indriyanto, B., & Maarif, M. S. (2020). An Analysis of Implementing Total Quality Management in Education: Success and Challenging Factors. *International Journal of Learning and Development*, *10*(2), 44–59.

Kimaro, A. R., & Rubeba, A. M. (2018). The predicament of internal quality assurance in enhancing the teaching and learning process among selected Higher Learning Institutions (HLIS) in Tanzania. In *the Proceedings of the 1st International Conference on Innovative Education and Policy Reforms for Industrial Economy in Africa (ICIEPRIEA)* (pp 370–383). The University of Dodoma, Tanzania.

Krymets, L. V. (2022). *Quality management in higher education: A survey of consumers of educational services in Ukraine*. BERA Journals. https://bera-journals.onlinelibrary.wiley.com/doi/abs/10.1002/rev3.3322

Lepistö, M., Saunila, M., & Ukko, J. (2024). Enhancing customer satisfaction, personnel satisfaction and company reputation with total quality management: Combining traditional and new views. *Benchmarking: An International Journal, 31*(3), 823–843. https://doi.org/10.1108/BIJ-12-2021-0749

Mgaiwa, S. J. (2021). Leadership initiatives in response to institutional quality assurance challenges in Tanzania's private universities. *Journal of Further and Higher Education, 45*(9), 1206–1223, DOI: 10.1080/0309877X.2020.1860203.

Mtebe, J. S., & Raphael, C. (2018). Key factors in learners' satisfaction with the e-learning system at the University

Cite paper: Kayanda, A. & Saika, S. (2026) Total Quality Management with Information Technology for Strengthen-ing Customer Satisfaction: A Case of Higher Education Institutions in Tanzania*, vol* (12), Issue 1: 10 pages.

of Dar es Salaam, Tanzania, *Australasian Journal of Educational Technology, 34*(4), 107–122.

Murtadlo, K. R. (2019). Total Quality Management: Developing Schools' Qualities. In *Proceedings of the 3rd International Conference on Special Education (ICSE 2019)* (pp. 206–210).

Nyamwesa, A. M., Magambo, E. F., & Onyango, D. O. (2020). Impact of External Quality Assurance Practices on Higher Education Institutions in Tanzania: A Review Paper, *East African Journal of Education and Social Sciences, 1*(3), 191–196.

Papanthymou, A. & Darra, M. (2018). Assessment of the Quality of Electronic Administrative Services in a Greek Higher Education Institution: A Case Study, *International Journal of Higher Education, 7*(2), 15–27.

Pham, N. S., & Hota, P. (2025). *Evaluating the role of technology in implementing Total Quality Management in higher education*. Bonview Press. https://ojs.bonviewpress.com/index.php/IJCE/article/download/4288/1267/26594

Psomas, E. & Antony, J. (2017). Total quality management elements and results in higher education institutions: The Greek case. *Quality Assurance in Education: An International Perspective*, 25 (2), 206–223.

Ray, S. & Tripathi, S. (2020). Role of Information Technology and Information Systems as an Antecedent to Successful Implementation of TQM. *International Journal of Recent Technology and Engineering (IJRTE), 8*(5), 1010–1016.

Sahney, S. (2016). Use of multiple methodologies for developing a customer-oriented model of total quality management in higher education. *International Journal of Educational Management, 30*(3), 326–353. https://doi.org/10.1108/IJEM-09-2014-0126.

Salleh, N. M; Zakuan, N., Ariff, M. S., Bahari, A. Z., Chin, T. A., Sulaiman, Z., Yatim, S. M., Awang, S. R. and Saman, M. Z. (2018). Critical Success Factors of Total Quality Management Implementation in Higher Education Institution: UTM Case Study, AIP Conference Proceedings 2044, 020007 (2018); https://doi.org/10.1063/1.5080060.

Sallis, E. (2014). *Total Quality Management in Education* (3rd ed.). Routledge.

Sandel, K., & Kulualp, H. (2024). Relationships between total quality management components and employee performance in higher education institutions. *Journal of Educational and Business Management, 1*(2), 101–118. https://doi.org/10.5281/zenodo.10678934

Sohel-Uz-Zaman, A. S. M. (2016). Implementing total quality management in education: Compatibility and challenges. *Open Journal of Social Sciences, 4*(11), 207.

Tasleem, M., Khan, N. & Nisar, A. (2019). Impact of technology management on corporate sustainability performance: the mediating role of TQM. *International Journal of Quality & Reliability Management, 36* (9), 1574–1599. https://doi.org/10.1108/IJQRM-01-2018-0017

Wei, S. (2024). *Optimising online teaching: Total Quality Management in Chinese higher education institutions*. ERIC. https://files.eric.ed.gov/fulltext/EJ1436747.pdf

Yirga, S. A., & Beshir, M. A. (2025). The effect of Total Quality Management practices on innovation: Evidence from selected agricultural technical and vocational education training colleges in Ethiopia. *Journal of Innovation and Entrepreneurship, 14*(21). https://doi.org/10.1186/s13731-024-00460-x

Yusuf, F. A. (2023). Total Quality Management and quality of higher education: A meta-analysis study. *International Journal of Instruction, 16*(2), 171–184. https://www.e-iji.net/dosyalar/iji_2023_2_10.pdf

Zarkasi, M. I., Safinah, F., Yanti, M. D., & Indra, A. (2024). Total quality management in education: Strengthening academic excellence at MAN 1 Lombok Timur. *International Journal of Pedagogy and Education Studies, 3*(1), 39–48. https://doi.org/10.1234/ipes.v3i1.51

Cite paper: Kayanda, A. & Saika, S. (2026) Total Quality Management with Information Technology for Strengthen-ing Customer Satisfaction: A Case of Higher Education Institutions in Tanzania, *vol* (12), Issue 1: 10 pages.