How to Cite:
Eltaraiki, A. A. M., & Azam, S. M. F. (2022). TQM implementation and higher educational institutions' performance from a Libyan perspective. *International Journal of Health Sciences*, *6*(S3), 7539–7562. https://doi.org/10.53730/ijhs.v6nS3.7701

TQM implementation and higher educational institutions' performance from a Libyan perspective

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***Abstract*---**The key to success and sustainability in higher education institutions in maintaining a higher level of quality. Over the past two decades, the higher education system has been evolving in this dynamic context. Extreme obstacles are imposed not just on the graduates, but also on the educational institutions, due to the stakeholders' extremely high expectations of them. Not only can poor administration in higher education institutions harm its graduates, but it also has a negative effect on the economy. Therefore, the purpose of this study is to determine the key elements influencing the application of TQM in higher education institutions. A comprehensive literature study focusing on TQM theories and numerous empirical experiments was done. This study identified the four most significant characteristics that influence the application of TQM in educational institutions based on a survey of the relevant literature. This study generates a standardised questionnaire based on earlier research and distributes it to numerous Libyan higher education institutions. 373 respondents out of 500 responded during the two-month period. Several statistical methods, including Confirmatory Factor Analysis and Structural Equation Modeling, were utilised to evaluate the hypothesis. The results revealed that all five variables are essential for the successful implementation of TQM in a higher education institution, which ultimately improves institutional performance. This outcome was also consistent with other previous research conducted in a different context. This study is one of a small number of research initiatives that highlight significant TQM implementation aspects in higher education. Moreover, this study makes theoretical and practical contributions.

International Journal of Health Sciences ISSN 2550-6978 E-ISSN 2550-696X © 2022.
Manuscript submitted: 27 March 2022, Manuscript revised: 18 April 2022, Accepted for publication: 9 May 2022

***Keywords*---**TQM, education, continuous improvement, employee empowerment, organizational performance, implementation.

Introduction

Education is not only a fundamental human right but also an essential element of human progress. It is believed that education has a major relationship with national economic and social growth (Ezenwaji et al., 2019; van Kemenade & Hardjono, 2019; Wu & Cheng, 2018). No nation can achieve considerable economic growth without substantial human capital investment. Education enhances people's comprehension and technical abilities to explore new ideas. It improves their quality of life and results in extensive social benefits for both individuals and society. Quality education is characterised by excellence or compliance with predetermined standards. Excellence implies a long-lasting commitment to providing an excellent education. At the turn of the twenty-first century, satisfaction supplanted perfection as a synonym for quality. Many organisations have learned that enhancing the quality of their products and services is essential to their survival and competitiveness in a fast-paced world (Fernández Cruz et al., 2016; Garza-Reyes et al., 2018; Mehralian et al., 2016; Sreedharan et al., 2018).

In recent decades, the development and execution of efficient TQM have enabled organizations to occupy advantageous positions and become more competitive on the international market. Therefore, TQM has been adopted regularly as a means of obtaining higher product quality, enhancing service quality, and satisfying consumers' needs and expectations (Nguyen & Chau, 2017). Following the success of the Malcolm Baldrige Award (MBNQA) in the United States and the European Quality Award (EQA) in Europe, many nations have begun to create their own national quality awards to promote the use of TQM at the national level. The ability to decode, combine, and finally define quality-related behaviours, particularly quality assurance as a continuous process that permits routine organisational activities, is the most important factor in determining an organization's tendency towards quality (Muraliraj et al., 2018; Rahman et al., 2019; Schönreiter, 2018). Total quality management (TQM) has the ability to increase business performance, customer happiness, teamwork, and worker management within enterprises; nevertheless, construction companies have struggled to implement it.

TQM has been implemented in education in the same manner as in industry and business. In the context of education, Murgatroyd and Morgan (1993) defined it as the methodical management of a company's customer-supplier relationships to assure a sustainable, steep-slope improvement in quality performance. Furthermore, TQM should be regarded holistically. Mokupadhyay (2005) believes that a fragmented method of assessing quality in the academic sector is neither desired nor feasible, because an action in one area causes a chain of reactions in other areas of educational institution administration (V. Kumar et al., 2018; J. Singh & Singh, 2015; Yeravdekar & Behl, 2017). Theories and methods in educational management were evolved from management principles originally implemented in the business sector (Bush, 2003). And educational management

as a subject of study arose later than similar disciplines such as public administration and commercial administration. These theories and principles were modified with care to accommodate educational environments.

In order to comprehend the essential notions of a certain theory and practice in education administration, it is necessary to investigate its origins and industry effects. (Chakraborty et al., 2019) argues that quality is a significant and exciting challenge for Higher Education (HE). Providing quality services from Higher Education Institutions is the key to differentiating from competitors and guaranteeing long-term survival. According to (Khurshid et al., 2018; Sweis et al., 2015), the quality of education is an extremely important issue because HEIs are answerable to multiple stakeholders, including students, society, and others. Also, the quality of higher education is one of the most important parts of the development of knowledge, human resources, and social power in every nation. According to (de Menezes & Wood, 2015), the problem of Quality Management has been steadily on the agenda of higher education institutions (HEIs) in numerous countries and cultures. Globally, QM concerns have become one of the most fundamental components and strengths of higher education institutions. This study focuses on the factors that determine the successful adoption of QM, including implementation barriers, CSFs, and the obvious benefits to HEIs. This is necessary because to the awareness of these QM-improving factors.

Several factors have contributed to an increase in public concern over the quality of higher education institutions in recent decades, leading to the emergence of quality management and improvement devices such as performance indicators, accreditations, programme, and institutional assessment, and quality audits, as well as attempts to import private sector models into higher education institutions (Androwis et al., 2018; Bouranta et al., 2019; Saleh et al., 2018). Consequently, a dispute has emerged regarding the relevance of quality management principles, methodology, and tools to the Higher Education sector. As described in the literature on Higher Education, a number of voices have argued that none of these management theories are applicable, particularly because they were created from industry and had nothing to do with the ethos of higher education (Dong et al., 2017; Pasch et al., 2016; Patyal & Koilakuntla, 2017; Verma & Prasad, 2017). The implementation of TQM in the education sector is not a straightforward task; it necessitates a number of substantial system enhancements and modifications. Aktharsha and Karthick (2016) identify some of these as management activities in the organisation, monitoring of educational processes in the evaluation of results, and monitoring the culture of communication in the school environment and particularly in interpersonal connections.

According to them, a whole quality model comprises of process planning and management, continuous improvement and human resource participation, and a focus on quality's end user (Bouranta et al., 2019; Dong et al., 2017; Muraliraj et al., 2018; Rahman et al., 2019). TQM is an effective technique that requires the participation of all personnel at the management and production levels of a higher education institution (HEI). Jordan's higher education system does not meet international quality criteria. Therefore, there is sufficient basis for a greater evaluation of the quality of the nation's educational institutions. Traditionally, these institutions believed that Quality could be determined by their internal

resources, i.e., faculty with an impressive set of degrees and experience detailed at the end of the institute's admission brochure, the number of books and journals in the library, the size of the endowment, etc., or by its definable and assessable outputs, i.e., efficient use of resources, producing uniquely educated, highly satisfied, and employable graduates (Ahmed et al., 2019; Cheng et al., 2019; Wu et al., 2018). Higher Education must be about quality and excellence, but it is also about the quality of effective presence they share with students, professors, systems, and stakeholders, as well as the relationships they share. Since quite some time, the problem of quality management has been firmly on the agenda of higher education institutes (HELs) in many nations and cultures. Higher education (HE) for the masses and an atmosphere of ever-increasing accountability are commonly cited as causes of a greater emphasis on quality (Becket and Brookes, 2008).

Changing societal structures and job descriptions, as well as a rise in the number of students enrolled in higher education institutions, generate a complex quality issue. Higher education institutions must assess their technical, managerial, and social functions in light of their increased tasks and responsibilities (Bajaj et al., 2018; Dellana & Kros, 2018; Ferdousi et al., 2019). The TQM evaluation model is an indispensable instrument for evaluating the three-dimensional function of higher education institutions. Arab cultures are currently undergoing numerous changes in various spheres of life, necessitating that corporations and non-profits modify their traditional administration and management practices. Consequently, if a company wishes to reach its objectives more quickly, it must adopt contemporary management practices. These modifications will strengthen their competitive advantage in the worldwide inter-institutional productivity and quick technical development in a variety of fields, especially communications, computer, and laser technologies. Improving the performance of institutions of higher education is a worldwide problem in all nations. Among the most distinguishing aspects of a community is its capacity to handle institutions and key programmes not only effectively but also in an inventive manner (Habtoor & Habtoor, 2016; Song et al., 2017; Youssef & Youssef, 2018). Linked to the size and quality of services in the founder of the HE system – management, this gives the university a letter compass movement through the university's principles and ethics. Any success of its founder is a success of its management, hence the importance of management's commitment to HE institutions to constantly improve the overall philosophy in order to arrive at TQM in universities, which require the participation of all to ensure the survival and continuity of universities.

The Libyan educational system struggles to achieve its aims, including providing the training and skills necessary to progress the economy, which are quite similar to those of colleges in other Arab countries. The business community believes that the educational system does not provide them with the qualifications required by the economy, while other sectors in Libya bemoan the necessity for considerable retraining in all fields to generate such individuals. The source of the problem is their inadequate education (Carnerud, 2017; Honarpour et al., 2017; Sunder M, 2016). With a ranking of 121 out of 134 for education quality and a score of 2.6 out of 7, Libya is at the bottom of the list. According to these reports, numerous studies conducted in Libya or by the League of Arab States, the Islamic Educational, Scientific, and Cultural Organisation (ISESCO), and UNESCO have

found that the level of education (in Arab nations in general and in Libya in particular) is low. In addition, a consensus is reached among Libyan educators regarding the significance of enhancing the quality of services offered by Libyan SEIs (Libyan delegation report, 1998; University of Garyounis, 2008). Therefore, higher education in Libya is plagued by several issues and faces numerous obstacles. In addition, there is an urgent need to implement TQM in education to address these issues. Consequently, the purpose of this study is to identify the primary elements influencing the deployment of TQM in higher education in Libya and its effect on the performance of the institutions (Antunes et al., 2017; Lobo et al., 2018; Pattanayak et al., 2017). The current analysis, to the best of the researchers' knowledge, is the first to investigate and compare the amount of TQM adoption in public and private universities in Libya. This study ensured that the limited number of empirically-based and validated studies available on the influence of major factors affecting the application of TQM, particularly in developing countries, were used to build TQM knowledge and enhance TQM practices. This study is the first of its kind to classify and assess the level of TQM adoption in Libyan universities.

Literature Review

The evolution of TQM

TQM is the fourth step of the progression of quality management. TQM gained popularity in the mid-1980s, but many of its core parts were created between the 1950s and 1970s. The United States has made the most theoretical advances in the concept's advancement, but Japan has led in terms of application. Deming, Juran, Ishikawa, Crosby, and Feigenbaum are the most influential gurus of the quality management movement, according to (Eriksson, 2016), who refers to them as the "big five." Their perspectives and approaches to TQM differ, though. All of these gurus, according to Oakland (1993), focus on the fundamental concepts of overall quality but act as though they are giving alternative answers to the requirements of quality management. They are all speaking the same language, yet their dialects vary. In the 1990s, TQM became one of the most important competitive strategies available to managers in a number of more developed nations; it was widely implemented in a variety of global locations (Albliwi et al., 2017; Ferdowsian, 2016; V. Kumar & Sharma, 2017; E. L. Psomas & Jaca, 2016). A consensus arose that TQM is a philosophy that enables an organization to enhance its worldwide competitiveness by enhancing its overall effectiveness. Examples of TQM's benefits include products with fewer defects, a reduction in rework and lead times, cost reductions, improved company competitiveness, improvements in market share and profitability, greater flexibility, and increased employee and customer satisfaction (Nasim, 2018; Qasrawi et al., 2017; Turan & Bozaykut-Bük, 2016).

TQM in Higher Education

Total Quality Management (TQM) is an inevitable aspect that will affect the policies of higher education institutions as they seek to satisfy many stakeholders, including students, parents, the business community, and society as a whole (Al-Ghazali, 2020; Gheitani et al., 2019; Guevara et al., 2020; Palalic & Ait Sidi Mhamed, 2020). The current notion of (TQM) management philosophy is

based on a number of principles of modern management-focused at integrating basic administrative and innovative efforts with specialised technical abilities in order to increase the level of performance and continual development and improvement (Al-Khatib, 1999). TQM is a management style that attempts to create and sustain long–term organisational success by fostering employee and customer participation, honouring social values and beliefs, and adhering to government legislation and regulations (ISO9001, 2000). The federal institute of management also recognises TQM as the performance of work correctly from the outset in order to attain the target quality more efficiently and effectively in the shortest amount of time, dependent on the beneficiary. Based on the teachings of quality gurus, TQM models often include a number of fundamental principles or features, such as teamwork, top management leadership, customer focus, employee participation, a tool for continuous improvement, training, etc (Khalid et al., 2021; Saira et al., 2021; Su et al., 2020; Veloso et al., 2021). TQM is a method that was effectively implemented in US industry in the 1890s. Specified source is invalid. As a whole concept, TQM aspires to establish an organisational culture in which everyone is committed to quality and understands its strategic significance in order to meet or exceed the expectations of internal and external customers. TQM is the process of reorienting an organization's underlying culture toward the production of superior products or services. TQM is a management concept and set of tools that enables an institution to improve based on the satisfaction of its customers with the services they have received (Mickson et al., 2020; Nauman & Musawir, 2021). According to (Carvalho & Mulla, 2021), TQM consists of the following three terms: Total: signifying that all parties, including customers and suppliers, are involved. Quality: suggesting that customer needs are satisfied precisely, and Management: indicating that senior management is dedicated.

Factors Affecting TQM Implementation and Organizational Performance

A conceptual framework is developed based on an extensive literature review. Figure 1 illustrates the conceptual framework of this study. Nest section explains the relationship between variables and proposes hypotheses based on the framework.

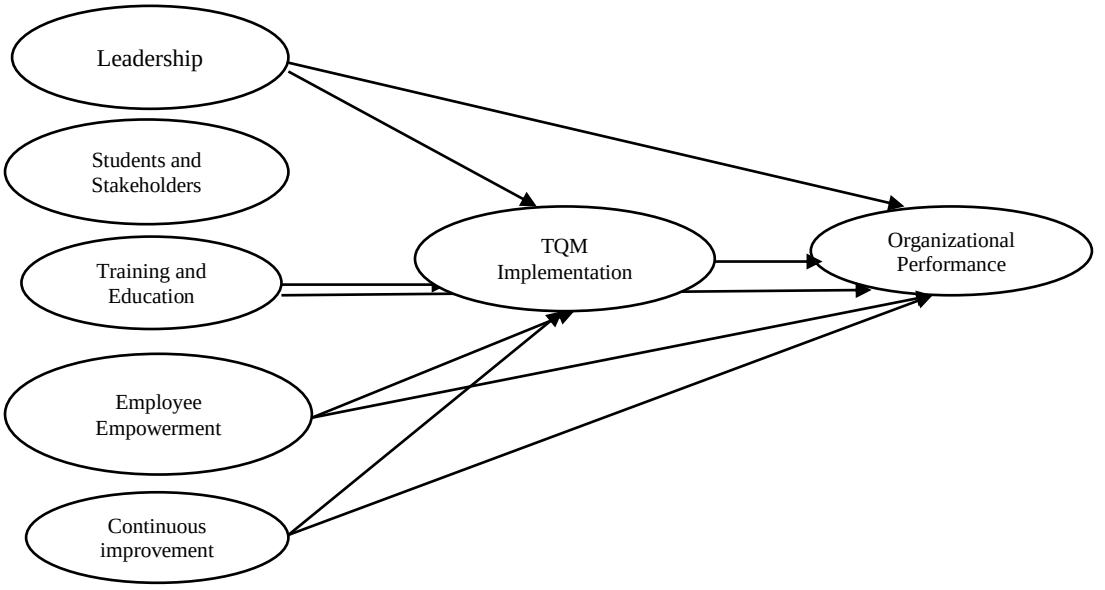

Figure 1. Conceptual Framework of this study

Leadership

(Alsaid, 2021) note that the leadership of top management is one of the fundamental parts of TQM. In every country where TQM has been implemented, he noted, there are examples of firm executives who have spearheaded the cultural shift and guided their organisations through the quality journey. A rising number of studies have examined the relationship between leadership and TQM programme success. In addition, gurus such as Deming, Crosby, and Jouran have acknowledged the significance of leadership as a fundamental component of good quality management. (Hsiao et al., 2020) concluded that enterprises with a high level of top management commitment created items of superior quality. According to (Ali et al., 2021), one of the most significant aspects of the success of TQM in higher education institutions is leadership, where top management works as a driver of TQM implementation by establishing customer-satisfying values, goals, and systems.

H1a: There is a significant effect of Leadership on the successful implementation of TQM in Libyan HE.
H1b: There is a significant effect of Leadership on organizational performance.

Students and Stakeholders

Quality begins with customer consideration and is defined by the client. Customer focus is one of the key TQM value principles, with TQM concentrating on serving the demands of internal and external consumers (Luna-Reyes et al., 2020). One of the success markers for organisations, according to (Bouranta et al., 2019), is their ability to match their corporate strategy with consumer needs. However, a misunderstanding of consumer expectations may lead to excessive spending on enhancing the physical appearance of a company's facilities, while customers may be considerably more interested with the convenience, comfort,

and functionality of the facilities (Albliwi et al., 2017; de Menezes & Wood, 2015; Elshaer & Augustyn, 2016; K. Singh & Ahuja, 2015). Educational activities such as lesson delivery, advising, and project supervision can be viewed as a type of service delivered to students who assume the position of customer. Consequently, it is vital to evaluate the quality of educational services in order to provide incentive for and feedback on the success of educational programmes and implementation. Consequently, educational institutions around the world now solicit student feedback on all aspects of academic life and activities, typically in the form of a satisfaction evaluation questionnaire. Therefore, this study proposed the following hypothesis:

H2a: Focusing on students and stakeholders has a significant effect on the successful implementation of TQM in Libyan HE.
H2b: Focusing on students and stakeholders has a significant effect Organizational performance.

Training and Education

Adoption of any new strategy or method, such as the continuous quality improvement method, is almost always accompanied with change. Consequently, any programme for change requires sufficient education and training for individuals who will be implementing the new strategy or approach. Multiple studies have demonstrated that training and education are essential to the successful implementation of TQM (Ahmed et al., 2018; Eriksson, 2016; Kakouris & Sfakianaki, 2018; Ofori-Kuragu et al., 2016). In conclusion, the training and education element is essential for the development of employee skills, and should include basic work skills and process training, as well as induction, TQM awareness, customer service, and training in the use of tools, techniques, and systems. Consequently, a successful TQM environment necessitates a committed, well-trained, and educated workforce that actively participates in quality improvement initiatives (de Menezes & Wood, 2015; Elshaer & Augustyn, 2016; K. Singh & Ahuja, 2015). Inadequate quality training and training in problem identification and problem-solving procedures result in the failure of a TQM implementation programme. Therefore, this study articulates the following hypothesis:

H3a: Training has significant positive influence on the successful implementation of TQM in Libyan HE.
H3b: Training has significant positive influence on the organizational performance.

Employee Empowerment

In the Total Quality Management (TQM) philosophy, the phrase "empowerment" refers to giving individuals the capacity, authority, confidence, and commitment to assume the duty and rights to enhance the process in order to meet corporate values and objectives. Similarly, in higher education, (Ferdousi et al., 2019) described empowerment as the delegation of decision-making authority and responsibility to professors and staff. It emphasises the significance of faculty and staff participation in decision-making (Antunes et al., 2017; Eriksson, 2016; Mehralian et al., 2016; Ofori-Kuragu et al., 2016). Moreover, the TQM framework

in higher education necessitated revitalised teamwork because significant changes would not occur without the active participation of lecturers and other employees in the design and development of the change. TQM's apex of success is the involvement of people who are close to clients (lecturer-student, service worker-client). Everyone was required to participate in quality improvement by being a member of the team.

H4a: Employees' empowerment plays important role in the successful implementation of TQM in Libyan HE.
H4b: Employees' empowerment plays important role in organizational performance.

Organizational Structure

Organizational structure is vital to the successful implementation of any change inside an organization. The organizational structure will have a significant impact on the success of TQM adoption; hence it is crucial that it be taken into account throughout TQM implementation. According to (de Menezes & Wood, 2015; Elshaer & Augustyn, 2016; K. Singh & Ahuja, 2015), the organizational structure is crucial since plans for any changes undertaken without organizational structure will have unanticipated and mostly negative outcomes. In other words, organisational structure knowledge is the foundation for cultural change. Implementing cultural change within an organisation is acknowledged as one of the essential requirements for the TQM's success (Albliwi et al., 2017; Khurshid et al., 2018; Qasrawi et al., 2017). Multiple studies have demonstrated that an adequate organizational structure is a driving force behind TQM performance. (V. Kumar & Sharma, 2017) noted that cultural transformation is a crucial element of any quality improvement plan. In addition, (Khurshid et al., 2018) suggested that the inability to implement TQM was due to the mismatch between organisational structure and TQM implementation principles. Hence, this study proposed the following hypothesis:

H5a: Organizational structure plays a significant role in the successful implementation of TQM in Libyan HE.
H5b: Organizational structure plays a significant role in organizational performance.

TQM and Organizational Performance

According to (Ferdousi et al., 2019), organisational performance demonstrates the achievement of a company's organisational goals. Ramamoorthy (2007) defines organisational performance as the result of the organization's accomplishments or activities in three dimensions: organisational, financial, and operational effectiveness. Non-financial and operational performance consists of market share, the launch of the new product, market efficacy, and financial quality (Ahmed et al., 2018; Eriksson, 2016; Ofori-Kuragu et al., 2016). Organizational performance is a transnational variable or concept that can be measured by a variety of metrics, such as the efficacy of product quality, customer satisfaction, and financial performance. The expectations of customers affect the quality of a service or product. Frequently, businesses evaluate the quality of their service or product based on their target market. According to (K. Singh & Ahuja, 2015),

businesses can determine the quality of their services or products by calculating the cost of rework, scrap expenses, and defect rate. According to (de Menezes & Wood, 2015; Elshaer & Augustyn, 2016), successful TQM adoption results in an increase in market share and customer retention. In turn, customer focus may promote customer loyalty through the provision of durable and dependable products and services. This implies that customer-centricity results in consumer confidence, less customer complaints, customer loyalty, and higher customer pleasure. A company's financial success can be judged by the quantity of money received, the return on investment, the cost of performance, the return on assets, the gain in market share, and the increase in sales. Studies have proven a substantial correlation between financial performance and quality enhancements. According to (Ojekalu et al., 2018), increasing product quality is the most certain strategy to cut production costs and boost income. Therefore, this study proposed the following hypothesis:

H6: TQM implementation has significant effect on organizational performance (employee's performance; financial performance; quality service and customer feedback).

Research Method

The positive paradigm utilized in this study was decided by the nature of the research objectives investigated. Utilizing a large sample of researchers to assess the level of TQM implementation and examine the impact of five independent factors on TQM implementing factors, the study took a constructive approach (Ahmed et al., 2019). This study was appropriate for a positive strategy, as it often employs data collection questionnaires and statistical analysis to evaluate certain hypotheses. One of the defining characteristics of a positive philosophy is the pursuit of causal explanations for the effects between variables (P. Kumar et al., 2018; Niu & Fan, 2015; Sharma, 2017; Sreedharan et al., 2018). The basic data utilised to evaluate the hypothesis in this study were acquired via a standardised questionnaire. Numerous procedures were taken to produce the questionnaire, including operational definition, definition of the target group, pilot testing, and design of an appropriate measuring scale, among others (Fathi et al., 2020; Herneoja et al., 2022; MacKenzie et al., 2020; Mosyjowski & Daly, 2020). The questionnaire was divided into three sections: demographic, behaviour, and suggestions. For population, the nominal scale was utilised, but the Likert five-point scale was employed for behavioural data. Open-ended questions were used for two reasons: (a) SPSS was simple to write and (b) quantitative analysis was straightforward to do. Facet, content, and structural validity have been confirmed through the adoption of constructs from previous studies and discriminatory validity through exploratory analysis. During the pre-test phase of the questionnaire, 20 respondents from various hospitals were picked at random to ensure the reliability of scales. The finalisation of the questionnaire was aided by the fact that the Cronbach alpha score (0.739) indicated a high degree of internal consistency.

Sampling and Respondents' Characteristics

500 surveys were distributed to the lecturers, dean, and administrative staff respondents. This sample was chosen for the following reasons: Decans are expected to be highly trained and to have a comprehensive understanding of the process, strategy, strategies, decision-making and preparation, involvement and empowerment of organisations, as well as all of the factors that can affect the efficacy of TQM, such as organisational structure and challenges (Ge et al., 2021; Huo et al., 2020; Nakhaeinejad, 2022). The instructor plays an important role in the organization's TQM implementation. Through encouragement, involvement, and feedback, we assure the quality of the execution of TQM functions, ensure that TQM processes are developed and adopted, and promote customer knowledge inside the organisation. We have a wide range of knowledge and understanding of the obstacles and problems associated with the use of TQM (Ling et al., 2022; Xie & Xiang, 2022; Yüksel et al., 2022; Zhou et al., 2021). Management or operational employees are the first line of defence; they also play a vital role in the application of quality control and are involved in their daily tasks. The group was formed to develop their viewpoints on the degree of TQM implementation and to help clarify TQM implementation obstacles and organisational structure issues. According to the characteristics of the participants, approximately 64.52 percent of complaints were filed by men. More than 45.56 percent of university respondents in Libya are between the ages of 30 and 39, followed by those aged 40 to 49 (26.60 percent) and those aged 20 to 29. Results reveals that 48.01 percent of respondents have between 5 and 10 years' experience in the educational sector and between 10 and 15 years experience (24.15 percent). The frequency statistics indicated that 59.63% of respondents held a master's degree. The studies also demonstrated that the interview frequency for bachelor's degrees and doctoral degrees is comparable.

Hypothesis testing
Measurement Model (Confirmatory Factor Analysis)

Measuring unidimensionality involves identifying whether a set of indicators reflects a single underlying component, as opposed to multiple factors. Unidimensionality examines the degree to which items on a scale measure a construct or factor. There are two implicit conditions that must be met to ensure unidimensionality. First, an empirical construct must be strongly related with the empirical represents of a construct, and second, it can be associated with only one construct. In order to be deemed unidimensional, a measure must fulfil both of these characteristics. Lack of unidimensionality can result in fabricated relationships between constructed entities. Numerous scholars have stated that evaluating unidimensionality is a crucial stage in testing and developing theories. In fact, the absence of unidimensionality in scales could affect the final results if not supported by theory. In addition, Ho (2008) argued that, absent unidimensionality, a single number cannot be used to represent the value of a scale. Figure 2 depicts the study's integrated measurement models. From the graph, it can be seen that the factor loadings of all items in all constructs met the minimum needed level of 0.6, indicating that the model is unidimensional. Since correlations between constructs are less than 0.85, it is also found that there is no multicollinearity issue in the model. In addition, a chi-square over the degree

of freedom of less than 5 (2.055) indicates that the model achieved a parsimonious fit, an RMSEA of less than 0.08 (0.05) indicates that the model achieved an absolute fit, and GFI, CFI, and TLI of greater than and roughly 0.9 indicate that the model achieved an incremental fit.

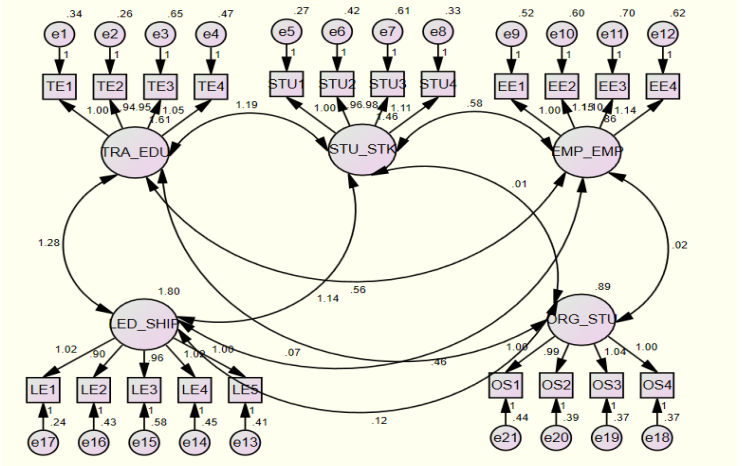

Figure 2. Measurement Model for Independent Variables

Estimating the main model

The primary structural model is shown in Figure 2. According to the fitness indices, the data corresponded well with the survey data. According to Table 1, all global goodness-of-fit statistics were within acceptable limits. Normed Chi-square was less than 5, while RMSEA and RMR were less than 0.10 and 0.08, respectively. The values of normed fit index and other fit indices were considerably above the desired level, indicating that the conceptual model was supported by this outcome. As a result, these findings show that the conceptual model is well-suited.

Table 1
Goodness-0f-fit indicators for Conceptual Model

Fit Measures	Main Model
Chi-Square	2803.361
Degree of Freedom	791
P	.078
Normed Chi-square	3.544(< 5.0)
RMR	.017(< 0.80)
RMSEA	.023 (< 0.10)
GFI	.960 (> 0.9)
AGFI	.926 (> 0.8)
NFI	.996 (> 0.9)

Tables 2, 3, and 4 displayed the outcomes of testing the hypothesis, including the beta value, significant value, and critical value. Five out of six hypotheses were

found to be supported by the data. One variable was insignificant since its significance value exceeded 0.05 The effects of each variable are described in-depth in the following section. Not unexpectedly, all major determinants have a favorable effect on TQM adoption, and TQM implementation has the same effect on the four-dimensionally measured organisational performance.

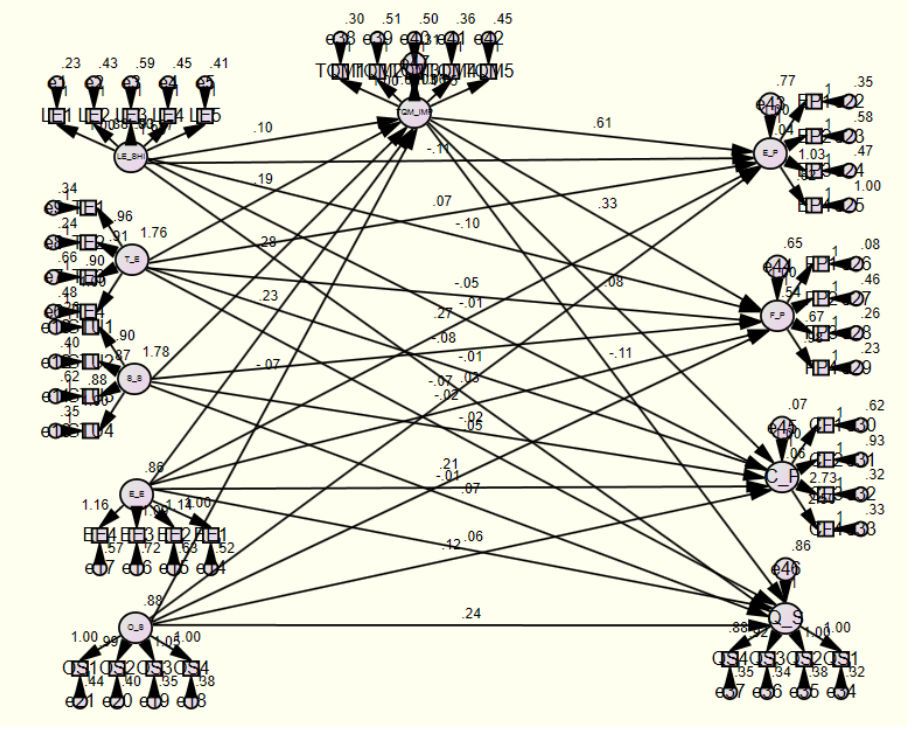

Figure 3. Structural equation Modeling.

Table 2
Path coefficient for the Final Model for hypothesis Testing

			Path Coefficients	Sig.	Critical Ratio
Leadership	←	TQM Implementation	.596	***	10.881
Training and Education	←	TQM Implementation	.688	***	14.978
Students and Stakeholders	←	TQM Implementation	.380	***	10.017
Employees' empowerment	←	TQM Implementation	.534	***	12.836
Organizational Structure	←	TQM Implementation	.273	***	8.963

Table 3
Path coefficient for the Final Model for hypothesis Testing

			Path Coefficients	Sig.	Critical Ratio
Leadership	←	Employees' Performance	.012	.073	2.927
	←	Financial Performance	.095	.065	2.825
	←	Quality Service	.013	.290	1.059
	←	Customer Feedback	.029	.459	.741
Training and Education	←	Employees' Performance	.073	.086	1.720
	←	Financial Performance	-.049	.204	-1.269
	←	Quality Service	-.010	.504	-.668
	←	Customer Feedback	.046	.304	1.028
Students and Stakeholders	←	Financial Performance	-.076	.076	-1.776
	←	Quality Service	-.025	.128	-1.520
	←	Customer Feedback	.070	.157	1.414
Employees empowerment	←	Employees' Performance	.273	***	4.329
	←	Financial Performance	-.016	.778	-.282
	←	Quality Service	-.010	.635	-.475
	←	Customer Feedback	.058	.368	.900
Organizational Structure	←	Employees' Performance	-.071	1.247	.212
	←	Financial Performance	.214	4.258	***
	←	Quality Service	.118	4.518	***
	←	Customer Feedback	.238	4.077	***

Table 4
Path coefficient for the Final Model for hypothesis Testing

			Path Coefficients	Sig.	Critical Ratio
TQM Implementation	←	Employees' Performance	.609	***	9.077
	←	Financial Performance	.329	***	8.601
	←	Quality Service	.480	***	12.225
	←	Customer Feedback	.254	***	11.033

Results and Discussions

Table 2 reveals that the multiple coefficients of determination have a value of 0.596, indicating that 59.6% of the variation in TQM implementation can be explained by the leadership. In addition, Table 2 displays statistical significance at the 0.001 level (p=.000), indicating that leadership had a substantial impact on TQM implementation. However, Table 3 clearly demonstrated that leadership has no direct effect on any organizational performance parameter. Not only the path coefficient, but also the significant value suggested that there is no indication of a significant effect of leadership on any of the organizational performance dimensions. Therefore, it is evident that in order to enhance organisational performance, Libyan institutions of higher education must use TQM; otherwise, strong leadership alone cannot adequately represent organizational performance. According to Table 2, the value of the multiple coefficients of determination was 0.688, indicating that training and education may account for 68.8 percent of the variance in TQM implementation. In addition, Table 2 demonstrates statistical significance at the 0.001 level (p=.000), indicating that training and education had a substantial impact on TQM implementation.

However, Table 3 clearly demonstrated that training and education have no direct effect on any organizational performance component. Not only the path coefficient, but also the significant value suggested that there is no indication of a significant effect of leadership on any of the organizational performance dimensions (Albliwi et al., 2017; Elshaer & Augustyn, 2016; Habtoor & Habtoor, 2016; K. Singh & Ahuja, 2015). Therefore, it is evident that in order to improve organisational performance, Libyan higher educational institutions must implement TQM in their institution; otherwise, training and education alone cannot indicate the performance of even the lowest-performing employee in Libyan higher educational institutions. Table 2 reveals that the multiple coefficients of determination have a value of 0.380, indicating that 38.0% of the variation in TQM implementation can be explained by concentrating on students and stakeholders. In addition, Table 2 reveals statistical significance at the 0.001 level (p=.000), indicating that concentrating on students and stakeholders had a substantial impact on TQM implementation.

However, Table 3 clearly demonstrated that focusing on students and stakeholders has no direct effect on any component of organisational success. Not only the path coefficient, but also the significant value suggested that there is no indication of a significant effect of leadership on any of the organisational performance dimensions. Therefore, it is evident that in order to enhance organisational performance, Libyan institutions of higher education must use TQM; otherwise, relying just on students and stakeholders cannot indicate organisational effectiveness. Employee empowerment is the third most significant variable after leadership for the TQM adoption in Libyan higher education institutions (Ezenwaji et al., 2019; Ferdousi et al., 2019; Nguyen & Chau, 2017; Rahman et al., 2019). The results indicate that the value of the multiple coefficients of determination was 0.534, indicating that employee empowerment explains 53.4% of the variation in TQM adoption. Furthermore, Table 2 demonstrates statistical significance at the 0.001 level (p=.000), indicating that employee empowerment had a substantial impact on TQM implementation.

Similarly, Table 3 demonstrated that employee empowerment had no direct effect on any variable of organisational performance other than employee performance. Numerous prior research agreed that empowering individuals within firms can considerably boost employee performance. Therefore, this study reaffirms that empowering employees is crucial not only for TQM adoption but also for enhancing employee performance, which is one of the dimensions of organisational performance examined in this study. Table 4 reveals that the multiple coefficients of determination were 0.609, indicating that TQM implementation in Libyan educational institutions can explain 60.9% of the variation in employee performance (Cheng et al., 2019; E. Psomas & Antony, 2017; Wu & Cheng, 2018). Similarly, Table 4 demonstrates statistical significance at the 0.001 level (p=.000), indicating that TQM implementation has a significant impact on enhancing service quality in educational institutions. Results also indicated that TQM implementation increases the financial performance of higher education institutions significantly. By applying TQM in these organisations, financial performance can be enhanced by 32,9%. Lastly, the data demonstrated that using TQM can increase customer feedback by 25.4%. Consequently, all hypotheses regarding TQM implementation and organisational performance are accepted with a confidence level of 95 per cent.

Contributions, Limitations and Further Studies

By developing a framework for applying TQM in Libyan educational institutions, this study has made major contributions to the body of knowledge on TQM in the Libyan Higher Education sector. There is a paucity of empirical research on the practical application of TQM in developing nations, and there is a lack of knowledge and awareness regarding the implementation of TQM in the various nations of the world. Thus, this work also contributes to the field of empirically-sound TQM implementation. Focusing on the Libyan context will help close the knowledge and understanding gap on TQM approaches in underdeveloped nations. The implications of the study are extremely beneficial for Libyan HEIs to implement TQM practices and enhance their quality, and for the Libyan government to assist institutions in adopting TQM principles and enhancing their quality, which will have a good effect on all other relevant sectors. The study may encourage decision-makers in higher education institutions to adopt and adapt TQM principles in order to develop a more effective management style that enables them to meet the demands and expectations of their customers.

It contributes to our understanding of the ninetieth percent of TQM implementation attempts that fail. This failure is due to the absence of defined rules and implementation methodologies, as well as a lack of TQM knowledge. Therefore, this research has contributed to the subject's depth of knowledge and enhanced our grasp of TQM. This study enhances awareness of the strategic and philosophical importance of TQM initiatives, which could assist businesses in better understanding how TQM can be properly approached and executed. Quality in the service sector literature in general and Higher Education in particular appears to be devoid of empirical studies that address the critical aspects of TQM from service perspectives. This research provides a comprehensive study that will assist researchers and practitioners in understanding the complexities of TQM in the HE context. In addition, this is the first study to

present a framework that will help colleges in Libya to successfully implement TQM and, in turn, profit from quality practises. A crucial conclusion of this research was that there was a disparity between expectations and perceptions. This indicates that the real (perceived score) was lower than anticipated (the expectation score). By attaining the stated research objectives, the primary objective of this study has been accomplished. The goal of the framework is to give HEIs initiating TQM with guidance indicating how the various components and characteristics of TQM fit together.

According to the report, quality initiatives and practices in Libyan universities are still in their infancy. There is a lack of appreciation for the significance of empowering employee suggestions and involving them in university decision-making. Therefore, it might be inferred that employee empowerment in the Libyan context should be investigated separately from training. There is insufficient funding to support university training programmers. There is no management training for the institution's leaders, principals, and managers; consequently, they are ill-equipped to handle the situation. The examination of the quality culture in both case studies found that the current scenario is not conducive to the successful implementation of TQM. Members of upper management are reluctant to educate themselves and become quality journey role models. The volatility of leaders, referred to by Soltani et al. (2008) as the mobility of management may pose a challenge to the successful implementation of TQM initiatives in Libyan universities, particularly public universities.

As this study focuses on two colleges in Libya, it is suggested that the technique be applied to other universities in countries with a similar culture in order to undertake a comparative analysis and foster a greater understanding of the subject throughout the Arab World. The secondary school sector is seen as a contributor to the higher education sector. Thus, it is suggested that such research be conducted in secondary schools, where the improvement of quality in this sector will lead to an improvement in the quality of higher education. Researchers interested in exploring the implementation of the TQM approach in other industries could utilize the list of factors identified by this study. Additional empirical investigations with high sample numbers and wider geographical diversity may be useful for further confirming this study's conclusions.

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