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THE IMPACT OF ISO PRINCIPLES OF TOTAL QUALITY MANAGEMENT ON HIGHER EDUCATION QUALITY

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Abstract:
Total quality management (TQM) represents a set of practices for continuously improvement within organizations. The government of UAE has taken large steps towards the implementation of TQM. Despite that, many organizations in UAE are not able to apply the principles of TQM. The aim of this study is to investigate the effect of TQM principles developed by the International Organization for Standardization (ISO) on education quality in UCMOTHER and Higher College of Technology - Sharjah Women's Colleges. This study used quantitative approach to answer research questions. The result of this study indicates that educational institutions need to implement the principles of TQM according to the seven principles of ISO to achieve high education quality. This study recommends that universities in UAE should establish a department of quality office in each college headed by specialist managers in TQM who will be responsible for following-up and monitoring the application of TQM like continuous improvement, teamwork spirit, and sharing decision-making.

Keywords: total quality management (TQM), education quality, international standardization organization (ISO)

1. Introduction

Total Quality Management (TQM) is a philosophy of modern management activities to enable the organization achieving quality in service and product. TQM depends on several modern concepts and philosophies based on a combination of basic administrative methods, specialized technical skills, and innovative efforts and to

improve the level of quality in various organizational aspects and keep continuous improvement for long-term (Khadijah et al., 2016).

To improve competitiveness in the domain of higher education, universities and colleges looking for a higher level of education quality through effective teaching, developing learning functions and educational processes. However, education quality could not be developed without TQM as the main strategy to sustain success in higher education (Prabha, 2011), if implemented well, TQM can assist universities to improve the knowledge of students in a continuous process, and provide better educational service for students (Kumar, 2009; Azam and Moha Asri, 2015; Tham et al., 2017; Udriyah et al., 2019).

2. Literature Review

The government of UAE has taken large steps towards the implementation of TQM. Despite that many educational institutions in this country are moderately adopt the principles of TQM, these institutions are still struggling to implement TQM in their education process but without achieving the desired goals of quality standards (Haque et al., 2014; Rachmawati et al., 2019; Tarofder et al., 2019). However, without applying the principles of TQM it would be hard to achieve quality in education (Brown and Marchal, 2008). While continuous improvement is one of ISO main principles, many universities all over the world are not capable to improve their education system because of lack of understanding to TQM principles.

UCMOTHER and Higher College of Technology - Sharjah Women's Colleges (HTC-SWC) are two well-known colleges in UAE and considered leading education institutions in the field of higher education. The challenges of competitions from international universities put more pressure on local universities in UAE to develop their education process by adopting TQM effectively and practice all principles defined by ISO to achieve high level of quality in education service.

The aim of this study is to examine the effect of ISO quality management principles (Customer focus, leadership, engagement of people, process approach, improvement, decision-making process, and relationships) on education quality in UCMOTHER and Higher College of Technology - Sharjah Women's Colleges (HTC-SWC). To achieve this objective this study examined seven hypothesis using quantitative analysis.

2.1 The Principles of Total Quality Management

Quality is a term that carries important meaning to both producer and customer. In the global marketplace today, many organizations realized that its survival in the business world depend highly on producing high quality product and services. In business, engineering and manufacturing, quality has a pragmatic interpretation as the non-inferiority or superiority of something; it is also defined as fitness for purpose. Quality is a perceptual, conditional, and somewhat subjective attribute and may be understood differently by different people (Azam et al., 2014; Elias, 2015; Haur et al., 2017; Tarofder

et al., 2017; Katukurunda et al., 2019). Total quality management (TQM) consists of organization-wide efforts to install and make permanent a climate in which an organization continuously improves its ability to deliver high-quality products and services to customers (De Silva et al., 2017; Kuruwitaarachchi et al., 2019; Pambreni et al., 2019). The TQM philosophy provides the overall concept that fosters continuous improvement in organizations. Continuous improvements can be achieved through internal and external quality improvements (Dahlgaard et al., 1998; Jayasuriya and Azam, 2017; Dewi et al., 2019; Nguyen et al., 2019).

Moreover, TQM is a management philosophy, a paradigm, a continuous improvement approach to doing business through a new management model. The TQM philosophy evolved from the continuous improvement philosophy with a focus on *quality* as the main dimension of business. Under TQM, emphasizing the quality of the product or service predominates. TQM expands beyond statistical process control to embrace a wider scope of management activities of how we manage people and organizations by focusing on the entire process, not just simple measurements (Rad, 2006).

2.2 The Principles of ISO

ISO is a term is derived from the origin of Greek word ISOS, which means parity or equal (ISO, 2004:2), it is used as a prefix in some words on the concept of a parity and equality (International Standardization Organization, 2004). The ISO (9000) family of quality management systems standards is designed to help organizations ensure that they meet the needs of customer's quality requirement (Maghfuriyah et al., 2019; Pushpakumara et al., 2019), while meeting statutory and regulatory requirements related to a product or program. ISO (9000) deals with the fundamentals of quality management systems (Poksinska, 2002), including the seven quality management principles upon which the family of standards is based deals with the requirements that organizations wishing to meet the standard must fulfil (International Organization for Standardization, 2015).

ISO quality standards are characterized by the following:

1) **Customer Focus.** Organizations and companies focuses much on their customers and this knowledge of the current and future needs of customers is very important and must meet their high accuracy and quality exceed their expectations to achieve success in the work.
2) **Leadership.** Leaders are responsible to establish unity within the organization in order to support the employees and the organization or institution in one direction specified a path of leaders to sustain the internal work environment and encourage employees to achieve organization's goals.
3) **Engagement of People.** Employees and workers at all levels are the essence of the center of organizations and their full participation to use their abilities for the benefit of their organization should be reflected on the overall performance and achieve success.

4) **Relationships Management.** This principle is important to achieve the desired result from work through more efficiently when activities and resources are managed as a relevant organization and programmed process. Applying this principle basically leads to systematic identification necessary to get the desired result of activities and identification of responsibility and accountability are clear for the management of the main activities.
5) **Process Approach.** This principle helps the organization to identify, understand and manage interrelated processes so that contributes to the organization's effectiveness and efficiency. The result of applying this principle is important to achieve the objectives that are reflected on the quality of the performance.
6) **Continuous Improvement.** Every organization needs for continuous development in the overall performance to fulfil the objectives of the organization and accomplish its priorities because through continuous improvement the performance is developed on a regular basis. Continuous improvement typically leads to consistency in work within the organization. To achieve this principle it is necessary to provide training to workers on the methods and tools that develop their skills to do the work.
7) **Decision-making Process.** Decisions makers do effective decision based on provided data and information, they need accurate information on the functioning of the organization in general and staff and the performance. All these details are very important for decision making process by senior management.

This study assumes that the seven principles of quality of ISO (Decision Making Process, Customer Focus, Leadership, Education Process Approach, Continuous Improvement, Relationships Management, and Engagement of people) have a direct effect on education quality. Figure 1 illustrates the relationships between the independent and dependent variables.

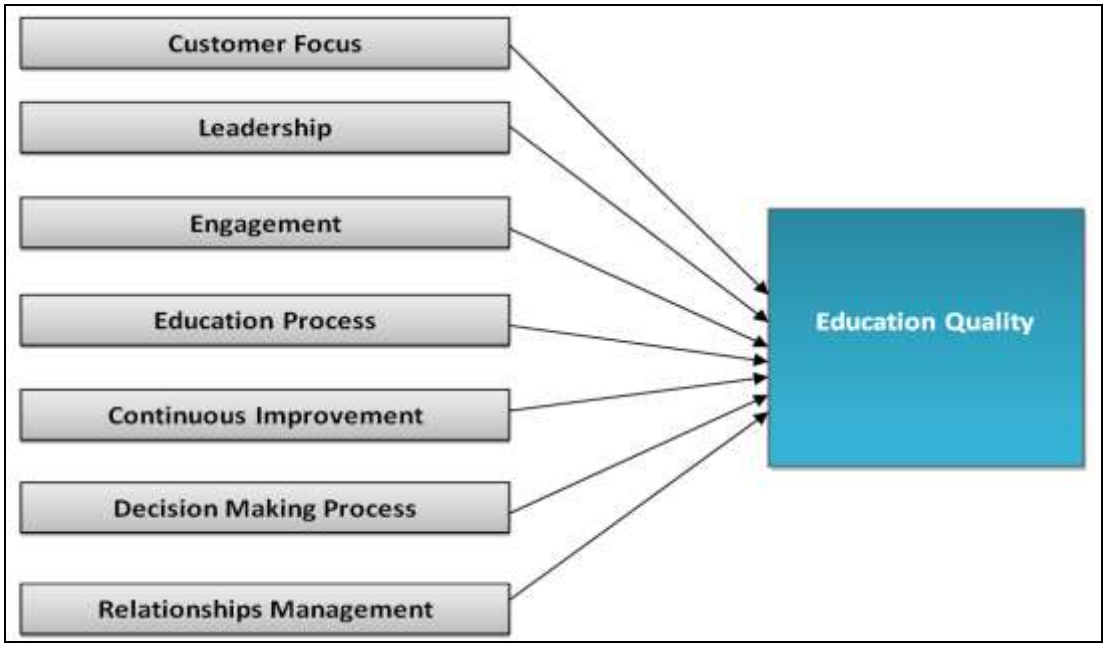

Figure 1: Education Quality Theoretical Model

3. Methodology

As described above, this study used quantitative methods to get empirical evidences in order to examine the hypotheses of study. The design of this study is developed for testing the hypothesis and conducting a literature review of available studies and data, or both (Adèr and Hand, 2008). SEM approach was applied in order to measure the significance of each hypothesis. The respondents of this study consists of individuals represent university staffs, students, and lecturers in UCMOTHER and Higher College of Technology - Sharjah Women's Colleges (HTC-SWC). As developed by Sekaran (2003), to determine a population of approximately 1620 as approximate number of participants = 31 according to Sekaran (2003). The number was increased to 400 to increase the reliability of data. The valid forms used in the analysis = 392 after withdrawal non-complete questionnaires.

3.1 Data Analysis

To test the hypotheses of the study, structural equation modelling (SEM) is used. In SEM, independent variable (ISO factors) is referred to as exogenous variables while dependent variable (education quality) is referred to as endogenous variable (Browne and Cudeck, 1993).

Critical Ration (C.R) is the statistical indicator used in this study to validate each hypothesis. CR is formed by the formula of dividing an estimate by its standard error, thus if C.R. value range between 1.96 or higher (and –1.96 and lower), specifies significance relationship. In other words the hypothesis is considered true

- **Hypothesis 1:** *A statistical association exists between Decision Making Process and Education Quality.* It is found that Decision Making Process correlate significantly with Education Quality because C.R value = 4.820 ≥1.96. Furthermore, C.R positive value is statistically significant (ϱ ≤0.000, ***).
- **Hypothesis 2:** A statistical association exists between Customer Focus and Education Quality. It is found that Customer Focus correlate significantly with Education Quality because C.R value = 2.308 ≥1.96. Furthermore, C.R positive value is statistically significant (ϱ ≤ 0.000, ***).
- **Hypothesis 3:** *A statistical association exists between Leadership and Education Quality.* It is found that Leadership correlates significantly with Education Quality because C.R value = 4.983 ≥1.96. Furthermore, C.R positive value is statistically significant (ϱ ≤ 0.000, ***).
- **Hypothesis 4:** *A statistical association exists between Education Process Approach and Education Quality.* It is found that Education Process Approach correlate significantly with Education Quality because C.R value = 2.237 ≥1.96. Furthermore, C.R positive value is statistically significant (ϱ≤0.000, ***).
- **Hypothesis 5:** *A statistical association exists between Continuous Improvement and Education Quality.* It is found that Continuous Improvement correlate significantly with Education Quality because C.R value = 3.105 ≥1.96. Furthermore, C.R positive value is statistically significant (ϱ ≤ 0.000, ***).

- **Hypothesis 6:** *A statistical association exists between Relationships Management and Education Quality.* It is found that Relationships Management correlate significantly with Education Quality because C.R value = 5.266 ≥1.96. Furthermore, C.R positive value is statistically significant (ϱ ≤ 0.000, ***),
- **Hypothesis 7:** *A statistical association exists between Engagement of people and Education Quality.* It is found that Engagement of people correlate significantly with Education Quality because C.R value = 3.767 ≥1.96.

3.2 Conclusions

The findings of this study indicated that practicing TQM is essential to achieve education quality in U.A.E. Educational institutions in UAE will not be able to compete in higher education market without understanding the seven principles of TQM and apply these principles continuously. This study has further investigated ISO factors that could enhance education quality through practicing seven TQM principles. In an effort to inspect the relationship between ISO principles of TQM and education quality, this study conducted a quantitative analysis to examine the relationship between (Decision Making Process, Customer Focus, Leadership, Education Process Approach, Continuous Improvement, Relationships Management, and Engagement of people) with education quality in selected colleges in UAE. The outcome of this study shows that all these principles have significant impact on education quality. Decision-making and customer focus have the strongest effect on education quality. Relationships management has the weakest impact on education quality

University College for Mother and Family Science (UCMFC) of Ajman, and Higher College of Technology Sharjah Women's Colleges (HTC-SWC) need to implement the principles of TQM according to the seven principles of ISO. Customer Focus is one of the most important factors of TQM. Relationships management needs for further development to achieve the desired education quality. The principle of continuous improvement could be achieved through training on regular basis to develop the skills and knowledge of staff and lectures. Focusing on continuous improvement is the final outputs in education process. Finally, The whole education process should be improve. Developing education quality is a long-term strategy to achieve comprehensive quality, so it requires sufficient time and intensity of the efforts of all employees in the educational institution and direct coordination between them.

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