TOTAL QUALITY CULTURE (TQC) IN EDUCATIONAL INSTITUTIONS: A GULF CORPORATION COUNCIL (GCC) REGION STUDY

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ABSTRACT

Adoption of Total Quality Management (TQM) principles has been recognised as a new framework for managing change within educational institutions. Although there have been studies examining the adoption of TQM, research on Total Quality Culture (TQC) in the Gulf Corporation Council (GCC) countries context and from educational institutions is lacking. To fill this gap, this paper uses 11 Critical-Success-Factors (CSFs) developed in revisited model of leverage points for a Total Quality Culture (TQC) to evaluate the progress of TQM. To conduct this empirical research, managers, principals, faculty, and administrators in charge of TQM or acceleration from many educational institutions in GCC countries were involved. This paper adds insight on the state of TQM in education in the Middle East, and particularly in the Gulf Corporation Council (GCC) context.

INTRODUCTION

Total Quality Management (TQM) aims at changing the culture of institutions so that employees put quality first. Literature has indicated that educational institutions have been lagging behind other organizations in implementing TQM (Bolton, 1995; Sirvanci, 2004; Singh et al., 2008). There are many reasons behind low TQM implementation since this implementation requires a TQM culture. People must come to a new understanding of what quality means. For a TQM organisation, this learning is ongoing as the organisation continuously seeks to improve customer value. TQM offers increased quality and efficiency, less waste, higher productivity, enhanced customer satisfaction and better image of education institutions (McCormick, 1993; Biehl, 1999; Hwarng and Teo, 2001; Hides et al., 2004; Singh et al., 2008). Unfortunately, there is limited literature emphasizing the adoption of TQC values and philosophy within GCC countries, especially in an educational context (Al-Khalifa & Aspinwall, 2000; 2001; Salaheldin & Zain, 2007; Salaheldin 2009; Al-Attiyah & Al-Khalifa, 2009). Al-Khalifa and Aspinwall comprehensively investigated the implementation of TQM and TQC in Qatar approximately a decade ago but their emphasis was limited to manufacturing industries.

Al-Khalifa and Aspinwall (2001) concluded that Qatari companies would find difficulties in implementing TQC because they are dominated by a hierarchical culture. Accordingly most organizations have a mix of cultural types which do not match the cultural profile of TQC. This assessment highlights where changes are needed to support a total quality approach. Therefore, without assessing the current trend, we cannot draw appropriate strategies and policies in order to close the gap. Many organizations have no clear idea of the progress they have made or how far they still have to go (Lascelles and Dale 1993; Evans 2007; Evans and Lindsay, 2008). Therefore, TQM models based on numbers of essential elements described by some researchers (Singh et al., 2008; Fryer et al., 2007) as the Critical Success Factor (CSF) are necessary for successful TQC implementation. Quazi et al. (1998) highlighted that managers could use the CSFs to evaluate the perceptions of quality management in their organisation as well as help decision-makers to identify those areas of quality management where improvements should be made. Eleven CSFs were identified which influence TQC implementation in education. These factors are interrelated and reinforce each other (Figure 1):

1. *Necessary management behaviour;*
2. *A strategy for TQM implementation;*
3. *Education and training;*
4. *Organisation for TQM;*
5. *Process management and systems;*
6. *Employee involvement;*
7. *Teamwork;*
8. *Partnering;*
9. *Communication for TQM;*
10. *Recognition and reward; and,*
11. *Quality technologies (tools and techniques).*

These CSFs presented to act as a guide for higher education contemplating a TQC initiative. This paper provides much needed current information on the state of TQC within the GCC educational context based on 11 CSF in response to this need. Providing the current status of TQM in an institution or an organisation is crucial to implementing quality programmes (Davies et al., 2007). Specifically this study attempts to address the following research questions:

1. *What is the extent and nature of TQC environment within the academic institutions in GCC countries?*

2. *What are the perceptions of quality management within academic institutions?*

3. *What are the factors (obstacles) for not implementing/initiating TQC within academic institutions?*

4. *What are the respondent's views on Critical Success Factors (CSF) influencing the environment for TQ-culture?*

LITERATURE REVIEW

The Key Success Factors and the Leverage Points for a Total Quality Culture Transformation

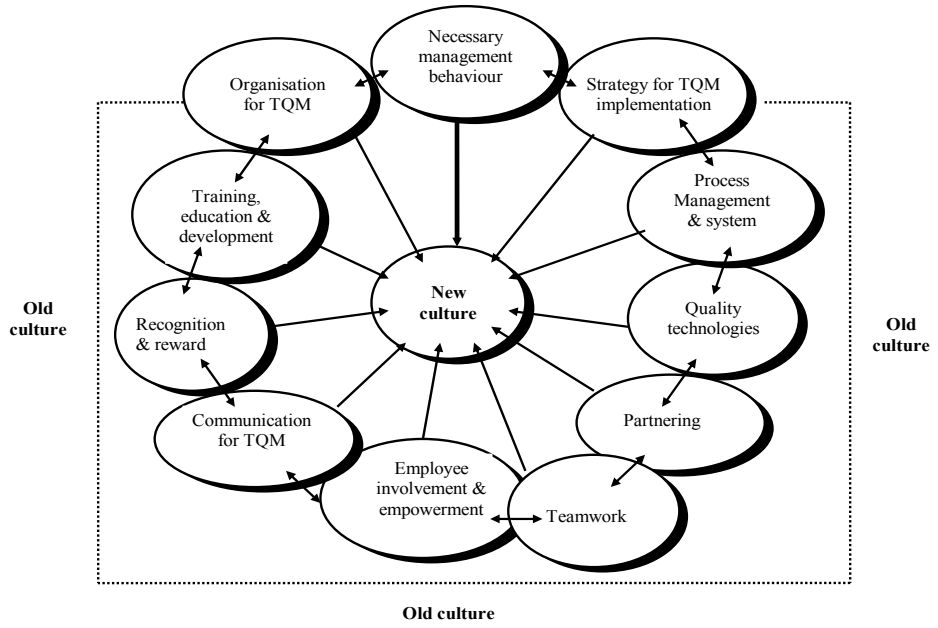
TQM models, based on the teachings of quality gurus or international quality awards, generally involve a number of "essential elements" or "correct environment" that has been described by some researchers (Kanji & Yui, 1997; Kanji et. al, 1999; Evans, 2007; Fryer et al., 2007; Singh et al., 2008) as the critical success factors (CSFs) which are required for successful TQC implementation. They are helpful in assessing the current culture and work to build or adjust an existing culture towards one which will more directly support a TQ-culture. Thus, this paper attempts to evaluate the progress of TQC implementation in educational institutions based on 11 critical success factors (CSFs) or "essential elements" developed in the revisited Model of Leverage Points for a Total Quality Culture Transformation developed by Sulaiman (2002). These factors are interrelated and reinforce each other as summarised in Figure 1. The model was built on several past studies on CSFs for TQM such as Saraph et al. (1989), Porter and Parker (1993), and Kanji and Yui (1997).

The eleven factors are elaborated in Sulaiman (2002, pp. 65-69). In addition, Sirvanci (2004); Ziegler (2005), Badri et al. (2005), Calvo-Mora et al. (2006), Takkar et al. (2006) the Baldrige Education Criteria for Performance Excellence (NIST, 2009) and Hooper (n.d.) have discussed the application of these essential elements of TQC in education.

As demonstrated in the Figure 1, they initially strive to function within the old organisational culture, which can easily undermine them. Three things can help to counteract this influence of the old culture (Figure 2). The approach to culture change is similar to Lewin's (1951) three-stage plan of "unfreezing, changing and re-freezing" (as cited in Robbins & DeCenzo, 2005, p.285). The first stage is both a thought revolution and a behavioural revolution, which come from a correct understanding on the meaning of quality itself. Creating this can be considered to be the necessary management behaviour, which is the prerequisite for the development of a total quality culture. Change must be rooted in the business needs of the organisation. The initial levers of change are to be found in the "soft" elements of culture areas that are largely related to people and the behavioural aspects of working life such as roles people play throughout the organisation which control the "hard" elements of culture such as the methods, tools, and systems they use to provide the working content of these roles. The second

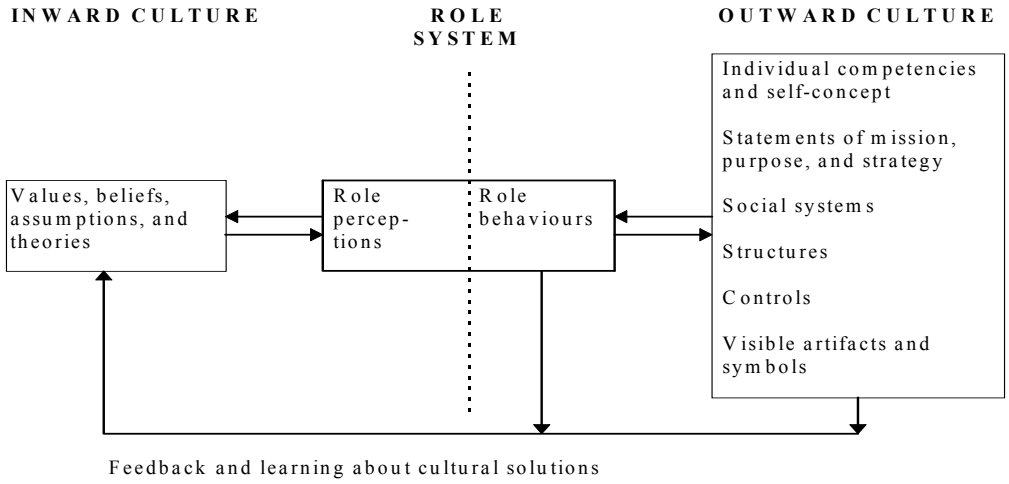
stage is the cumulative influence of all these leverage points being used simultaneously. This concept is linked to the contingency views of TQC (Psychogios and Priporas 2007) where TQC's implementation and its impact depend on the ability of organizations to adopt and apply its "soft" concepts and ideas such as continuous training and empowerment that are related to the humanistic side of the organization simultaneously with its "hard" concepts like process management and systems that are related to technical side of the organization (Wilkinson et al., 1994; Pike and Barnes, 1996; Ali et al., 2008). The third stage is ongoing analysis and discussion of cultural issues, not as the primary intervention for change, but taking place within the context of implementing change through the leverage points. Over time, the cumulative effect of these efforts will produce a new culture, which supports the TQC.

Figure 1: Leverage points for a total quality culture transformation



(Source: adapted from Bounds et al., 1994, p.491 in Sulaiman, 2002, p.183)

Figure 2: The relationship of roles and culture



(Source: Bounds et al., 1994, p.134)

The Obstacles/Reasons for not Implementing/Initiating TQC

Bolton (1995), Biehl (1999), Koch (2003), Wiklund et al. (2003), Takkar et al. (2006), Brookes and Becket (2007), Eagle and Brennan (2007), Ali et al. (2008) and Singh et al. (2008) identify some limitations that are related to difficulty in transferring TQM principles developed from industrial application to education services environments including:

- Lack of acceptance and application of TQC in education due to the lack of necessary knowledge about TQM, lack of sufficient funds or resources;
- Scientific control is less possible in education when compared to manufacturing because it is not easy to measure academic processes due to the involvement of numerous intangible factors;
- Definition of quality products/outputs are more relevant to administrative/non-academic service functions (tangible aspects) than quality of education/teaching, research and learning (intangible aspects);
- Student culture impacts upon perceived importance of different elements of education and thus on perceptions of quality;
- Lack of effective leadership due to bureaucratic and fragmented structures;
- Challenges regarding leadership skills and institution-wide strategic planning; and,
- Challenges regarding managerial skills and top level commitment in education

Thus, the challenge of applying TQC philosophies to education involves several critical steps such as clearer interpretation of quality, customers and their needs; clearer interpretation of institution's mission and its stakeholder's roles; and greater leadership support and teamwork. For example, Sahney et al. (2004a; 2004b) used system perspective to understand the definition of quality, customers and their needs. According to Sahney et al., the qualities of input are in the form of students, teachers/faculty, administrative staff, physical facilities and infrastructure. Furthermore, the qualities of processes are in the form of teaching, learning, research and service; and the qualities of output are in the form of the enlightened students that move out of the system. Unfortunately, in many countries the focus of assessment of quality management initiatives appears to be predominantly on the quality of input rather than the quality of process or quality of output (Koch, 2003; Brookes and Becket, 2007). The following sections will discuss the research questions and methodology.

RESEARCH METHODOLOGY

Reliability and Validity Analysis

Prior to being used for final data collection, the reliability and validity of the measures were tested to determine how consistent the selected variables measure the construct. The Cronbach's α value for all constructs far exceeded the recommended 0.60 which is considered as a threshold value indicating acceptable reliability (Hair et al., 1998). The reliability of the entire constructs measured by each statement on the scale of 1 to 5 was computed as shown in Table 1. Content validity was established through a review of questionnaire by faculty member's expert in *TQC.*

Table 1: Internal Consistency Results

Constructs	Number of Items	Alpha
Statements relate to CSFs for TQ-culture	20	0.917
Critical success Factors (CSFs)	11	0.904
TQM Benefits	10	0.911

Sample

The sample was based on the managers or administrators (person responsible for the performance of the organisation, TQM, accreditation, or some part of it) of educational institutions. Respondents were informed that the survey was entirely voluntary, and with a promise of anonymity and secured confidentiality. A pilot study was first conducted to assess the questionnaire. Following the pilot, changes were made to improve readability and thereby reduce the amount of time to answer the survey. Of the 100 questionnaires distributed to a random stratified sample of academics from 34 educational institutions, 54 were returned and some of

the responses were from the same educational institution. As a result, the number of valid questionnaires was 51 representing a response rate of above 40% which is comparable to similar studies (Klass *et al.*, 2002). Data was processed using SPSS (statistical package for the social sciences) for Windows 18.0. Descriptive Statistics were used to define the profile of the sample, to explore respondents' perception on their understanding on quality and TQC principles, and the obstacles and reasons for not implementing TQC/quality initiatives. Furthermore, Analysis of Variance (ANOVA) was used to explore respondents' perception and their opinion on the CSFs which influence TQC implementation. The following sections will discuss the survey finding and conclusions.

SURVEY FINDINGS

The Obstacles/Reasons for not Implementing/Initiating TQC

Table 2 shows the responses on a set of reasons for not implementing/initiating TQC according to level of institutions. "Lack of knowledge of TQM principles and its associated tools", "currently exploring potential of TQM", and "difficulty in changing people's behaviour and attitudes" were cited as the three most frequent obstacles in initiating TQC respectively by the total respondents. This finding confirmed our earlier assumption that most of the respondents are still in the infancy stage of TQC implementation or still getting accustomed to the idea of TQC. Secondly, it confirmed previous literature that categorized problems such as changing organisational culture, lack of knowledge of TQC principles and lack of top management commitment as the commonly cited reasons for difficulties experienced in starting/introducing TQC (Sulaiman 2002; Wilkinson et. al. 2001).

Table 2: Reasons for not implementing/initiating TQC according to level of institutions

Reasons for not implementing TQM	Level of institutions											
	Primary N=14 (27.5%)			Secondary N=15 (29.5%)			Tertiary N=22 (43%)			Total N=51 (100.0%)		
	Responses*	%Responses	Rank	Responses*	%Responses	Rank	Responses*	%Responses	Rank	Responses*	%Responses	Rank
Lack of knowledge of TQC principles and the associated tools	3	25	1	7	21.2	1	6	18.8	1	16	20.1	1
Still exploring potential of TQC	1	8.3	5	6	18.3	2	4	12.5	3	11	14.3	2
Difficulty in changing people's behaviour and attitude	2	16.7	2	4	12.1	3	5	15.6	2	11	14.3	3
Lack of agreement from all levels	2	16.7	2	3	9.1	5	4	12.5	3	9	11.7	4
Lack of need for TQC	0	0	8	3	9.1	5	4	12.5	3	7	9.3	5

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	Responses*	%Responses	Rank	Responses*	%Responses	Rank	Responses*	%Responses	Rank	Responses*	%Responses	Rank
Lack of time	2	16.7	2	4	12.1	3	1	3.1	9	7	9.3	6
Lack of top management commitment	1	8.3	5	1	3	9	4	12.5	3	6	7.8	7
Lack of resources	1	8.3	5	3	9.1	5	2	6.3	7	6	7.8	8
Difficulty in distinguishing between TQM/ISO9000/Accreditation	0	0	8	2	6	8	2	6.3	7	4	5.3	9
Total	12	100		33	100		32	100		77	100	
*Some respondents choose more than one answer or did not answer.												

Analysis of CSFs Influencing the Environment for TQ-Culture

Perceptions of quality management in their organisation

Table 3 on the following page shows total respondents' perception on twenty statements that relate to the eleven factors influencing the environment for TQC.

ANOVA ANALYSIS

The ANOVA analysis on the twenty statements indicated that there was no statistically significant difference of views (as shown in the column Sig. *p*) between the three different levels of institutions except for the use of team processes to increase morale. This shows that there is almost a consensus among the three levels of institutions on the level of quality management in their organisation. Furthermore, Table 4 shows the results of priorities that respondents from different levels of institutions gave to the eleven CSFs influencing the environment for TQC based on the overall mean ratings of statements for each CSF. It is expected that when TQC is more relevant to staff tasks and behaviour, an increased level of cultural changes and improvement of TQC implementation expected. The ANOVAs analysis on the CSFs indicated that there was no statistically significant difference of views (as shown in the column Sig.) between the three different levels of institutions except for "teamwork" and "communication for TQM". This shows that there is almost a consensus among the three levels of institutions on the eleven CSFs influencing the environment for TQC.

Table 3: Measurement variables descriptions/statements that relate to the eleven CSFs influencing the environment for TQ-culture

CSFs	Measurement variables descriptions/statements [a]	*Primary*	*Secondary*	*Tertiary*	*Total Res.*	*F V.*	*Sig.p*	S.D.
1) Necessary management behaviour	My supervisor is concerned more about the quality of my work than the quantity of my work.	3.79	3.53	3.41	3.55	0.378	0.687	1.254
	Management demonstrates leadership, commitment and involvement.	3.86	3.87	3.32	3.63	1.526	0.228	1.113
2) A strategy for TQM implementation	TQM is seen essential for customer satisfaction and profitability therefore management includes customer satisfaction scores as a key plan measure.	3.86	3.33	3.50	3.55	0.824	0.445	1.119
	Quality is seen to reduce cost and improve productivity.	3.62	3.29	3.55	3.49	0.301	0.741	1.175
3) Education, training & development	Everybody in the institution understands the total quality concept.	2.57	2.93	2.71	2.74	0.291	0.749	1.275
	I have received ongoing training to do my job right the first time.	3.29	3.07	3.09	3.14	0.179	0.836	1.077
4) Organization for TQM	I am provided with proper procedures to do my job right.	3.50	3.80	3.41	3.55	0.519	0.599	1.154
5) Process management and systems	We address problems through prevention and continuously improving all processes.	4.00	3.60	3.50	3.66	0.938	0.399	1.062
	I am able to meet the requirements of my external customers.	3.92	3.79	3.36	3.63	2.631	0.083	0.782
6) Employee involvement	Our commitment to quality is what sets us apart from our competitors.	3.69	3.67	3.25	3.50	0.932	0.401	1.072
	There is no friction between groups and departments.	2.77	2.67	2.71	2.71	0.38	0.962	0.957
7) Teamwork	Our use of team processes leads to increase morale.	4.21	4.00	3.18	3.70	6.446	0.003 [b]	1.015
	My supervisor can help me to do my job better.	4.14	3.93	3.41	3.76	2.844	0.068	0.992
8) Partnering	A partnership with suppliers supports the ability to improve processes.	3.64	3.53	3.32	3.47	0.371	0.692	1.138
9) Communication for TQM	My company is committed to TQM.	3.50	3.29	2.86	3.16	1.740	0.187	1.057
	There is a very strong trust between management and workers.	3.50	3.60	2.73	3.20	3.051	0.057	1.233
10) Recognition and reward	We are treated fairly and get recognition for what we do.	3.54	3.77	2.86	3.29	3.361	3.361	0.044
	I receive recognition for top quality job done.	4.00	3.80	3.32	3.65	2.377	0.104	.996
11) Quality Techno (tools and techniques)	We use problem solving techniques to get the real cause of problems.	3.31	3.47	3.18	3.30	0.251	0.779	1.182
	My decisions are based on analysis of data & information	3.86	4.00	3.45	3.72	1.747	0.185	0.927

[a] 1= Strongly disagree, 2=Disagree, 3=Natural, 4=Agree, 5=Strongly agree. [b] = Significant at $P < 0.01$

Table 4. ANOVAs and mean ranking for the eleven CSFs influencing the environment for TQ-culture							
	Level of institutions						
The eleven factors which influenced the environment for Total Quality culture	Primary N=14 Mean [a] (rank)	Secondary N=15 Mean [a] (rank)	Tertiary N=22 Mean [a] (rank)	Total N=51 Mean [a] (rank)	F-Stat.	Sig. *p*	SD
1) Necessary management behavior	3.82 (3)	3.70 (6)	3.36 (4)	3.58 (3)	0.945	0.396	1.04
2) A strategy for TQM implementation	3.75 (4)	3.36 (9)	3.52 (1)	3.53 (5)	0.523	0.596	1.00
3) Education, training and development	2.92 (11)	3.00 (11)	2.90 (10)	2.94 (11)	0.046	0.955	1.042
4) Organisation for TQM	3.50 (8)	3.80 (2)	3.40 (3)	3.55 (4)	0.519	0.599	1.15
5) Process management and systems	3.96 (2)	3.73 (3)	3.43 (2)	3.66 (2)	2.192	0.123	0.758
6) Employee involvement	3.23 (10)	3.16 (10)	3.04 (9)	3.13 (10)	0.207	0.814	0.850
7) Teamwork	4.17 (1)	4.00 (1)	3.29 (7)	3.74 (1)	7.123	0.002[b]	0.83
8) Partnering	3.64 (6)	3.53 (7)	3.31(5)	3.47 (7)	0.371	0.692	1.13
9) Communication for TQM	3.50 (8)	3.50 (8)	2.79 (11)	3.19 (9)	3.324	0.044 [c]	1.01
10) Recognition and reward	3.75 (4)	3.73 (3)	3.09 (8)	3.46 (8)	3.091	0.055	0.96
11) Quality technologies (tools and techniques)	3.64 (6)	3.73 (3)	3.31 (5)	3.52 (6)	1.508	0.232	0.77
[a]1= Strongly disagree, 2=Disagree, 3=Natural, 4=Agree, 5=Strongly agree; [b] = Significant at $P < 0.01$ and [c] = Significant at $P < 0.05$;							

Of the eleven CSFs in Table 4, teamwork had highest overall mean score of 3.74, and education and training had lowest overall mean score of 2.94 by the total respondents. Therefore, teamwork can be considered as one area that has shown promising development, whereas, lack of education and training is one area of quality management where improvements should definitely be made. In addition, it was also noticed that employee involvement (overall mean score 3.13) and communication for TQC (overall mean score 3.19) are other areas of quality management where improvements should be made. These help to explain why TQC benefits will be difficult without the cumulative influence of all the leverage points being used simultaneously. Although there is promising development towards increasing teamwork, the lack of knowledge of TQC principles and its associated tools is due, in part, to lack of educational training, involvement and effective communication.

When a cross-tabulation was constructed, classifying the respondents into their respective institutional level, it was further established that the total respondents from primary institutions considered "teamwork" as one area that has shown promising development although respondents within their institutions that have implemented/planned TQC did not feel considerable benefit from it as in findings from previous research. Conversely, the situation was the opposite for tertiary institutions. In addition, total respondents from tertiary institutions also perceived communication for TQC as the area that required the most improvement. Finally, all respondents had similar priorities for education, training and development, and employee involvement for areas that needed improvement. In fact, it is quite interesting to notice that the above areas which

require improvement are mentioned as one of the most important issues related to TQM initiative efforts in their organizations.

Findings from this paper have shown another promising development in terms of how educational institutions in GCC countries prepare themselves for TQ-culture transformation. According to Hofstede (1997), culture in any organisation as the "the beliefs which pervade the organisation about how business should be conducted, and how employees should be treated" In addition he added that a culture emerges in an organisation because of the need for solutions to business problems. Thus, this finding confirmed previous arguments that TQ-culture transformation and its full benefits will be difficult without the cumulative influence of all the leverage points being used simultaneously. Secondly, it confirmed Psychogios and Priporas' (2007) argument that managers tend to see TQM from its "hard" aspects and the actual awareness of its "soft" side is often superficial and people have a relatively poor understanding of it.

CONCLUSIONS AND IMPLICATIONS

The major contribution of the study is that it is one of the first attempts to investigate the impact of TQC implementation in the educational institutions of the GCC region. This type of analysis can help identify the developing attitudes of educators which can be an important finding as far as the future utilization of the TQC critical success factor is concerned. The study outcome implicated that managerial roles in implementation of TQC is necessary but TQC cultural acceptance will not happen without overall involvement of staff and teachers. Furthermore, cultural changes are unlikely to occur simply through a short term remedy in improving employee awareness. Even though initiatives have been undertaken to implement TQC in this part of the world, it takes times to see the effect of its implementation on improvement of an institution. In this respect, the lack of staff education, training, commitment, and motivation have negative effect on success of the TQC plan.

It is important to notice that suspicion and resistance are the most common reactions to TQC adoption, especially when many elements of the academic culture environment are not receptive to it. A key insight that has been identified from this research indicates that teamwork, increased quality of service, performance, and increased competitiveness can be considered as the strongest driving forces for TQC in GCC educational institutions. Furthermore, lack of knowledge of TQC principles and its associated tools, unexplored potential of TQM, and difficulty in changing people's behaviour and attitude in all levels of education are the most three frequent obstacles in initiating TQC. Therefore, the mentioned elements can be considered as the strongest restraining forces for TQC in GCC educational institutions. It is expected that when TQM is more relevant to staff tasks and behaviour, an increased level of cultural changes and improvement of TQC implementation expected. Thus, this finding confirmed previous

arguments that TQC transformation and its full benefits would be difficult without the cumulative influence of all the leverage points being used simultaneously.

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