

Relationship between Total Quality Management and Organizational Performance: Evidence from the UAE

Abdulla Esam Alhamd¹, Mohd Yamani Bin Yahya²

abdullaesam912@gmail.com, yamani@uthm.edu.my

Department of Technology Management, Faculty of Technology Management and Business,
Universiti Tun Hussein Onn Malaysia (UTHM) Parit Rajah, Batu Pahat, Johor, Malaysia

Abstract

Total Quality Management or better known as TQM is an integrative organizational-wide management philosophy that is aimed at continuously improving the quality of processes, products and services by focusing on meeting or exceeding customer expectations to enhance customer satisfaction and overall performance of the organization. Therefore, this study examines the effect of two of the total quality management dimensions (customer focus and education training) through the mediating role of the individualism (national culture dimension). A total of 406 survey questionnaire was distributed to senior employees of Abu Dhabi Agriculture and Food Safety Authority. Thus, the collected data was analyze using Partial Least Square-Structural Equation Modeling (PLS-SEM) version 3.11. Thus, the results showed that customer focus and education & training had a direct effect on the Abu Dhabi Agriculture and Food Safety Authority performance. Also, individualism mediates the relationship between customer focus, education and training and performance of the ADAFCA.

Keywords: *Total Quality Management; Organizational Performance; the UAE*

Introduction

Total Quality Management or better known as TQM is an integrative organizational-wide management philosophy that is aimed at continuously improving the quality of processes, products and services by focusing on meeting or exceeding customer expectations to enhance customer satisfaction and overall performance of the organization. Previous studies have shown both organizational culture and corporate culture are positively and significantly correlated with performance and TQM, however much has not been reported about the mediating role of national culture in the relationship between TQM and performance especially in the context of a regulatory authority like the Abu Dhabi Agriculture and Food Safety Authority (ADAFSA).

Thus, total quality management has become a crucial and indispensable management practice in the modern business landscape. This is because business organizations seeking to improve performance have been reported to realize these performance metrics when they successfully implement TQM practices across their business operations. Similarly, researchers in the field of TQM have proposed several models for TQM implementation; however, several of these models are based on theories and practices that are derived from business settings (Anderson & Sohal, 1999; Anil, 2019). Therefore, whether these models can work well in terms of influencing quality performance in control and regulatory agencies like the Abu Dhabi Agriculture and Food Safety Authority (ADAFSA) remains to be determined empirically. So far, there is very little evidence of the associations between TQM and several performance metrics, especially in regulatory and control organizations.

The relationship between TQM and Performance represents a major topic of academic discourse in recent years (Ahmad *et al.*, 2013; Anderson & Sohal, 1999; Anil, 2019; Aquilani *et al.*, 2017). When customers demand improved quality, then top and senior managers of the organization are poised by addressing the questions “what quality management approach leads to the best organization performance. Hence, what managerial practices produce the highest quality of service and customer satisfaction. Therefore, there becomes an increased demand to determine the strategic and operational variables that can account for the relationship between TQM and organizational performance. Therefore, this study examines the effect of the two dimensions of the (customer focus and education training) and one dimension of the national culture (individualism) on the Abu Dhabi Agriculture and Food Safety Authority performance.

Research objective

- i. To identify the influence of the customer focus on Abu Dhabi Agriculture and Food Safety Authority performance.
- ii. To find out the effect of the education and training on Abu Dhabi Agriculture and Food Safety Authority performance.
- iii. To determine the mediating role of individualism in the relationship between customer focus, education and training and Abu Dhabi Agriculture and Food Safety Authority performance.

Given that the ADAFSA is a regulatory authority, its organizational culture may be rooted in the national culture since the authority essentially differs from for-profit organizations or traditional business enterprises. Hence, it is imperative to examine how national culture (individualism) mediates the relationship between TQM and the performance of the ADAFSA in terms of quality performance, employee performance, and society results. The study will contribute to the literature by determining the critical factors that contribute to the effect of TQM on performance in a regulatory agency and would provide the basis for more theoretical and practical applications of relevant theories.

Prior Literature

There are many articles, studies, and surveys that describe the roles of quality in improving the “organizational performance. It’s quite evident that the manufacturing and service industry's business performances are impacted by TQM. Das et al., (2006) found a positive association between TQM implementation and organizational performance and five of TQM principles, customer focus, continuous improvement; top management commitment, employee involvement, and product innovation have a significantly positive effect on product quality, recommending the use of reward and recognition for involving employees in TQM efforts. Salaheldin (2008) revealed that the implementation of TQM has a positive effect on both the operational and the organizational performance. The results show that customer focus, continuous improvement, top management commitment, employee involvement and product innovation are significantly and positively related to product quality. Sadikoglu and Olcay (2014) found that different TQM practices significantly affect different performance outcomes and the main obstacles were lack of employee

involvement, awareness and commitment of the employees, inappropriate firm structure, and lack of the resources. Abuzaid (2015) indicated that the Jordanian private hospitals applying the total quality management practices with a high degree. The highest focus of private hospitals within total quality management practices is on customer orientation, supplier management, high support from top management to the quality efforts and concern from the target hospitals in the participation of employees in quality management activities.

Studies seeking to determine the relationship between the organizational performance and TQM have found mixed results with some demonstrating that certain elements/principles of TQM may positively impact the organizational innovative and financial performance. TQM is an effective method of reaching what is ideal and for attaining perfection. It is a philosophy” consisting of principles aimed at improving the organization’s performance. It is the human resource operation and quantitative method aimed at improving all processes in a firm. It is aimed at helping the firm meet customers’ current and future expectations. It is applied as a technical tool, and management technique to help improve the organization performance. Fotopoulos and Psomas (2009) and Kumar *et al* (2009) demonstrated the potential impact of soft TQM practices including strategic quality planning, leadership, employee involvement and management, customer focus, supplier management, process management, customer “satisfaction, customer focus, and continuous improvement on quality management results expressed in terms of market benefits (i.e., improved competitive position, increased profits, increased sales and improved performance).

Furthermore, dimensions of individualism refer to societies in which the ties between individuals and the poor of every individual is expected to look after themselves and their immediate families, while collectivism refers to societies in which people from birth include the strong cohesive groups that are” protected throughout their life in exchange for unquestioning loyalty. It is noted that the degree of individualism in a country complies with the wealth of the country (Rentería *et al.*, 2017) and also countries with a high degree of individualism are more inclined to the Protestant ethic, individual initiative and progress to the market shift. Countries with a low level of individualism are less prone to the Protestant ethic, show less individual initiative and while the progression of age-related/age. Thus, the framework proposes that the dimensions of the total quality management (customer focus and education & training) and individualism a dimension of national culture would influence the Abu Dhabi Agriculture and Food Safety Authority performance. Thus, based on the conceptual research framework, three hypotheses were proposed as below:

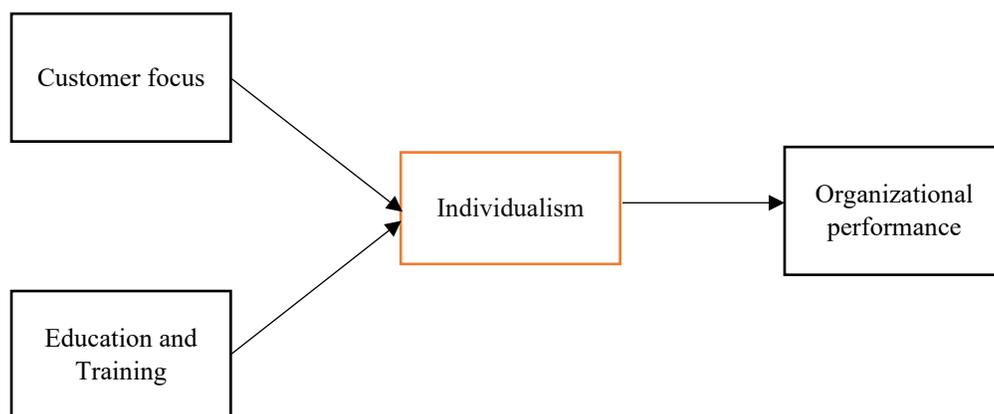


Figure 1: Conceptual Framework of the Study

H₁: There is a relationship between customer focus and Abu Dhabi Agriculture and Food Safety Authority performance.

H₂: There is a relationship between education and training and Abu Dhabi Agriculture and Food Safety Authority performance.

H₃: Individualism mediates the relationship between Total Quality Management Practices and Organizational Performance.

Research Methodology

This study applied a quantitative research methodology was used, out the 413 distributed questionnaires a total of 406 completed sets were used in the data analysis. The items selected to measure each construct in this study were adapted from previous studies (Ahmad *et al.*, 2013; Anil, 2019; Aziz & Morita, 2016; Syduzzaman *et al.*, 2016). Prior to the main data collection, a total of thirty-five questionnaires were packaged and distributed to senior employees of the ADAFSA which were not part of the selected sample for the study. All the three four variables showed the reliability coefficients of the main constructs of the study. TQM dimensions (Customer focus and education and training) have values of between 0.718 to 0.871 respectively. Similarly, national culture (individualism) had a value greater than the acceptable threshold of 0, 7.

Therefore, the Cronbach's alpha test was used to examine the internal consistency of the research instrument used in this study. This technique estimates the extent to which scale items represent the measured variables and constructs being examined. Bonett and Wright (2015) stressed that the alpha coefficient value ranges from 0 and 1, where the value 1 implies a 'perfect' internal consistency and 0 indicate 'no' internal consistency or reliability. Although different perspectives have been expressed on the degree of acceptance for scales, it is generally accepted that α values greater than 0.70 is acceptable (Creswell, 2012; Pallant, 2011). Therefore, the threshold point (0.70) will be used to determine an acceptable range for the internal consistency of the scales in this study. Thus, Statistical Package for Social Sciences and the partial least squares path modeling or partial least squares structural equation modeling (Smart-PLS) were used for the data analysis.

Analysis and Results

According to Hair *et al.* (2014), convergent validity can be assessed using the factor loadings, composite reliability (CR) and the Average Variance Extracted (AVE). To achieve convergent validity, each construct should have an AVE of ≥ 0.50 , and the factor loadings should be preferably greater than 0.70. Byrne (2013) recommends that factor loadings of 0.50 are acceptable if the summations of the loading results in high loading scores contributing to AVE scores of 0.50 or greater. Therefore, Table 1 shows the construct reliability and validity.

Table 1: Construct Reliability and Validity

	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
ADAFSA performance	0.963	0.967	0.746
Customer Focus	0.757	0.805	0.518
Education & Training	0.870	0.907	0.665
Individualism	0.759	0.846	0.648

Thus, all measured constructed had AVE scores greater than the threshold value of 0.50 and also the factor loadings were greater than 0.5 consecutively, indicating that convergent validity had been established according to (Byrne, 2013).

Table 2: Factor loading

	ADAFSA performance	Customer Focus	Education & Training	Individualism
CF2	0.041	0.559	0.085	0.019
CF3	0.195	0.934	0.203	0.183
CF4	0.011	0.714	0.019	-0.015
CF5	0.095	0.613	-0.072	0.089
ET1	0.258	0.103	0.767	0.184
ET2	0.099	0.055	0.595	0.132
ET3	0.272	0.158	0.913	0.173
ET4	0.272	0.071	0.847	0.225
ET5	0.272	0.159	0.913	0.173
In1	0.492	0.220	0.256	0.844
In2	0.295	0.049	0.114	0.791
In3	0.265	0.085	0.095	0.778
QP1	0.914	0.192	0.303	0.467
QP2	0.872	0.120	0.221	0.393
QP3	0.738	0.109	0.175	0.211
SR1	0.932	0.205	0.329	0.494
SR2	0.876	0.124	0.223	0.410
SR3	0.763	0.142	0.155	0.198
SR4	0.937	0.203	0.336	0.507
EP1	0.928	0.207	0.325	0.499
EP2	0.891	0.140	0.231	0.427
EP3	0.756	0.130	0.163	0.205

Hence, only one item from the total quality management dimension (customer focus) the scale was deleted because its factor loading was extremely below the recommended value of 0.50, and its inclusion in the model resulted in AVE values less than the recommended threshold of 0.50, therefore it was deleted from the model.

Table 3: Discriminant validity

	ADAFSA performance	Customer Focus	Education & Training	Individualism
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ADAFSA performance	0.864			
Customer Focus	0.188	0.719		
Education & Training	0.301	0.138	0.816	
Individualism	0.472	0.174	0.221	0.805

Discriminant validity is one of the key building blocks of model evaluation (Henseler et al., 2016). Also, Henseler et al (2016) stated that discriminant validity analysis ensures that a construct measure is empirically unique and represents phenomena of interest that other measures in a structural equation model do not capture (Hair et al., 2011). In addition, discriminant validity valuation has become common practice in structural equation modeling studies (Henseler et al., 2016). Furthermore, Hair *et al.*, (2014); Hussin, Rahman, & Memon, (2013) multivariate analysis requires constructs to be unique and distinct from one another. Table 3 presents the results of the Discriminant validity in which the square root of AVE inserted diagonally in bolded italics. Other figures, both horizontally and vertically, indicated the correlation among the research constructs. The result indicated that all the lower-order components achieved the stated condition. The lower-order component with a higher correlation than the square root of AVEs is only with their highest order components which are expected (Sarstedt *et al.*, 2020).

Table 4: Heterotrait-Monotrait ratio (HTMT)

	ADAFSA performance	Customer Focus	Education & Training	Individualism
ADAFSA performance				
Customer Focus	0.147			
Education & Training	0.298	0.162		
Individualism	0.463	0.122	0.231	

The research, therefore, achieved discriminant validity based on Fornel and Larcker criterion. Also, the analyses of this study pass the HTMT criterion as presented in Table 4, all the values in the HTMT table are below both 0.85 and 0.9. Furthermore, after all the possible discriminant validity tests, it has been found out that discriminant validity is not a problem in this study.

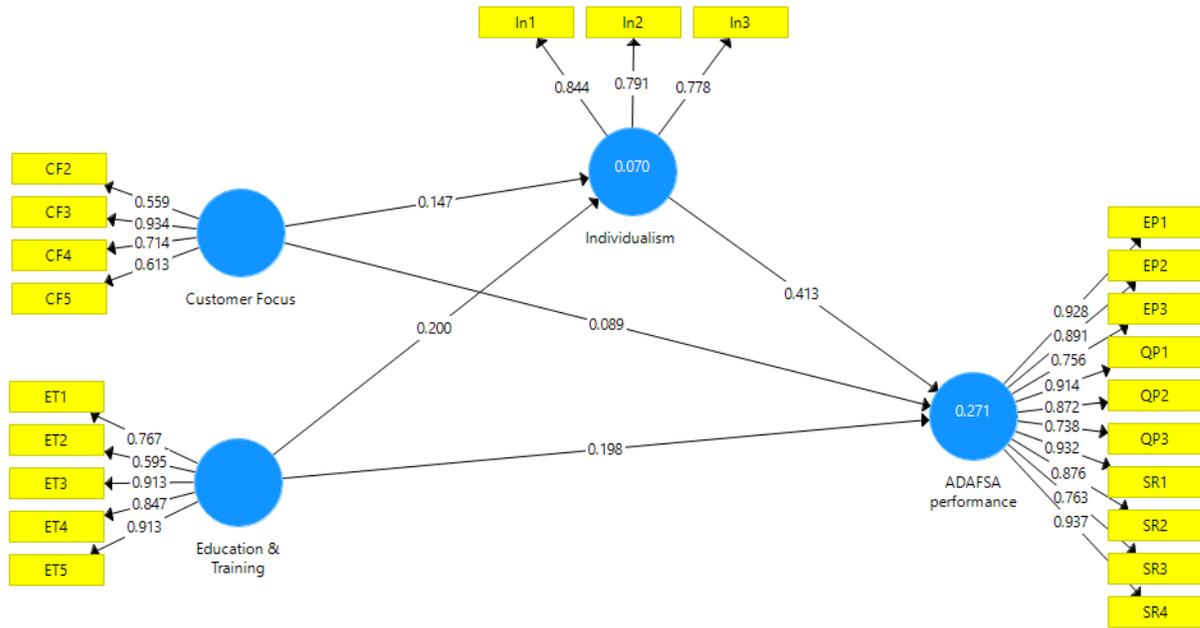


Figure 2: Measurement Model of the study

The measurement model generates the path coefficients of all the proposed paths in the final research model in Figure 2. Therefore, Figure 3 illustrates the structural model of the study with the t-statistic results.

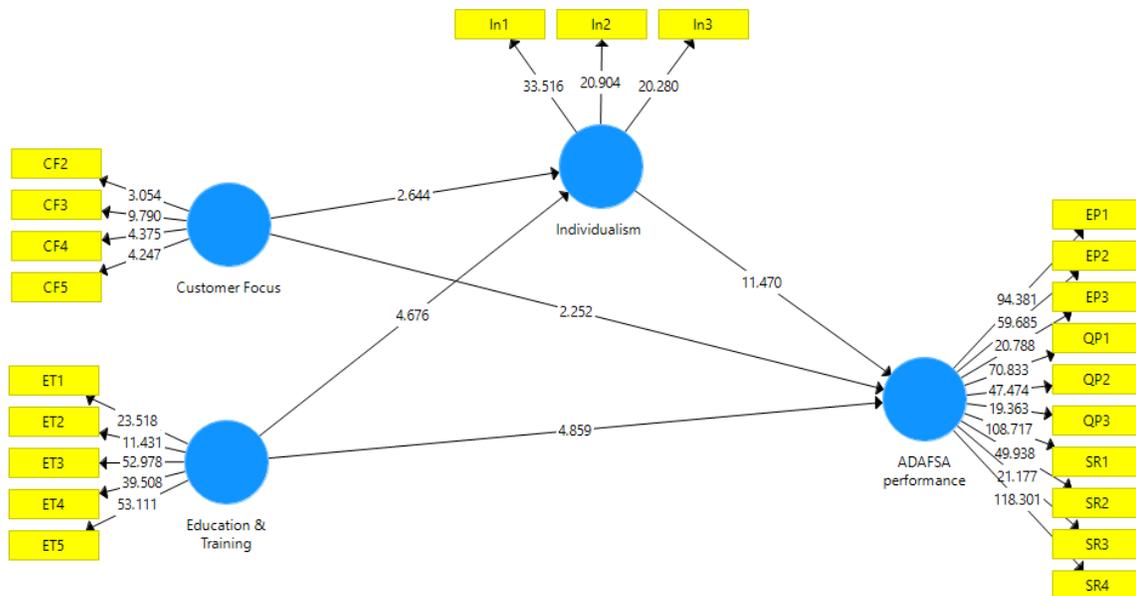


Figure 3: Structural Model of the study

Path Coefficient

The structural model is an essential instrument for evaluating the significance level of the path coefficients since the measurement of structural using PLS-SEM requires the application of bootstrapping analysis. According to Hair *et al*

(2014) the level of strength of a relationship is measured by the magnitude and significance of the estimates. Path coefficients that are close to +1 represent strong positive relationships while those that tend towards -1 represent strong negative relationships (Hair et al., 2014). Table 5 presents the path coefficients for the various path models hypothesized in the model of this study.

Table 5: Hypothesis testing for the structural model

Hypothesis	Path Coefficients	T-Statistic	Effect size	R ²	P Values	Results
Customer Focus -> ADAFSA performance	0.091	2.078	0.010	0.266	0.003	Supported
Customer Focus -> Individualism	0.158	2.685	0.023		0.001	Supported
Education & Training -> ADAFSA performance	0.199	5.091	0.050		0.000	Supported
Education & Training -> Individualism	0.198	4.526	0.042		0.000	Supported
Individualism -> ADAFSA performance	0.413	11.593	0.218	0.066	0.000	Supported
Mediating analysis						
Hypothesis	Path Coefficients	T-Statistic	P Values		Results	
Customer Focus -> Individualism -> ADAFSA performance	0.065	2.602	0.001		Supported	
Education & Training -> Individualism -> ADAFSA Performance	0.082	4.381	0.000		Supported	

The direct path coefficients of the total quality management dimensions (customer focus and education & training) on the performance of the Abu Dhabi Agriculture and Food Safety Authority (ADAFSA) were significant with t-values exceeding the t-critical value of 1.96 and p-values value less than 0.05. Thus, customer focus and education & training had a strong positive relationship on the performance of the ADAFSA. Also, Total Quality Management dimensions had positive effect on national culture (individualism) with t-values exceeding the t-critical value of 1.96. Similarly, individualism mediates the relationship between the total quality management dimensions and performance of the ADAFSA as the results shows both t-critical values greater than of 1.96 and p-values value less than 0.05. In addition, Table 5 also presents the results of the Effect size and R².

Discussion

The results showed that customer focus and education & training had a direct effect on the Abu Dhabi Agriculture and Food Safety Authority performance. Also, individualism mediates the relationship between customer focus, education and training and performance of the ADAFCA. The results are in line with the findings of Munizu (2013) who reported that TQM practices have a positive and significant effect both on organizational performance and competitive advantage. Competitive advantage has a positive and significant effect on organizational performance. Organizational performance is more influenced by competitive advantage than TQM practices. Also, this finding is corroborated by Munizu (2013) in his study, which investigated the assess the extent of soft total quality management

implementation amongst hotels in Malaysia and its effect on organizational performance. In addition, based on the regression analysis, it is concluded that all of the selected TQM practices (continuous improvement, customer focus, and employee involvement) are significantly correlated with the organizational performance of hotels. According to Munizu (2013) in this process, the continuous improvement was considered as the most important TQM factor in terms of affecting organizational performance.

With regards to the dimension of the national culture, Al-Nasser, Yusoff, Islam, & ALNasser, (2013) investigated the effect of national culture on total quality management and organizational performance. To determine the mediator effect of national culture dimension on the relationship between soft-hard total quality management and organizational performance in municipalities. (Tortorella, Giglio, Fogliatto, & Sawhney, 2019). Their results show that enhanced organizational learning capability can significantly impact the improvement level of operational performance through the application of total quality management practices. Also, other findings contradicting the current study from Shahid Mahmood, (2015) who concluded that the mediating role of organizational learning capability between TQM and performance is fully supported. Saffar, & Obeidat (2020) conducted a study on the effect of Total Quality Management (TQM) practices on their dimensions on employee performance who worked for Qatar Ministry of Interior, with the moderating share of knowledge. The results indicate that TQM practices with its dimensions had effects on employee performance through knowledge sharing (Saffar, & Obeidat, 2020).

Conclusion

This study aims to determine the direct and indirect effect of the two selected total quality management dimensions (customer focus and education & training) on performance of the ADAFCA. Also, indirectly through the mediating role of the national culture dimension (individualism). Thus, the hypothesized relationships were supported and therefore, customer focus and education & training have a significant influence on the performance of the ADAFCA. Also, individualism mediates the relationship between customer focus, education and training and performance of the ADAFCA.

Contribution of the Study

This study has made several contributions to the body of knowledge in the field of total quality management, national and organizational culture and performance, as well as help in identifying the important elements that are crucial to organizational success. Hence, this study was able to expand the boundary of the existing literature. Finally, the findings from this study provided empirical evidence that TQM has a significant and positive impact on national culture, and significantly influence organizational performance. Thus, the study is projected to contribute to UAE government sectors organization particularly and to private organizations also. The next sections address the theoretical and practical contributions to the research study.

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