

# The Mediating Effect of Organizational Culture on the Relationship between Total Quality Management, Entrepreneurial Orientation and Performance: A Case of Thai Universities

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The main aim of the current study is to examine the mediating effect of organizational culture on the relationship between total quality management, entrepreneurial orientation and performance: a case of Thai universities. The literature suggests that the mismatch among organizational culture and strategy implementation is the reason for unsuccessful strategy implementation. The reflected outcomes will not become satisfactory until the organizational culture suitably fits the strategy. The current study represented an attempt to fill this theoretical gap in the literature. In order to resolve the inconsistent findings in the literature regarding the performance implications of TQM and EO, this study aimed to examine the effect of organizational culture to support the principles of the contingency theory and the cultural assumptions for successful organization as emphasized by the organizational change theory. Around the globe, the services sector has been gaining considerable attention as the economy's main growth contributor. In the current study, cultural strength and innovation were found to correlate with the sum insured, whereas task and team orientation were found to correlate with staff turnover. In addition, this study discovered that for the manufacturing industry, a correlation exists between supportiveness and net profits growth. The results of the study are in line with the fact that the success of an organizations' TQM initiatives can be mainly attributed to the fit between TQM practices and the organization's cultural environment. The

contributions of this study are many. Indeed, from a theoretical perspective, this study demonstrated the importance of TQM in the service industry, particularly in the banking industry.

**Key words:** *Organizational culture, Entrepreneur orientation, TQM, Organizational Performance, Thailand.*

## Introduction

The current global business environment has become more complex, hyper-competitive and ever-changing due to the wave of globalization and fast-paced technological advancements (Jermstiparsert, Sriyakul, & Rodoosong, 2013). In such business environments, the classical methods of management are no longer effective in leading organizations to create and sustain a desired competitive advantage for growth and survival (Pamornmast, Jermstiparsert, & Sriyakul, 2013; Jermstiparsert, Sriyakul, & Pamornmast, 2014). Under the pressure of globalization, liberalization, technological advances, and knowledgeable and sophisticated customers, all types of organizations are forced to develop their innovative and competitive strategies in order for them to grow and survive (Moreno, Morales, & Montes, 2005; Haseeb, Hussain, Kot, Androniceanu, & Jermstiparsert, 2019; Haseeb, Hussain, Slusarczyk, & Jermstiparsert, 2019; Mujtaba et al, 2018). Thus, organizations must be capable of strategically adapting with the critical demands of the customer and with the ever-changing environment. For the growth and survival of organizations, entrepreneurial orientation, and total quality management are well-known strategies and have been found to be feasible for the current competitive market environment (El Shenawy, Baker, & Lemak, 2007; Hye, Lau, & Tourres, 2014). During the past few decades, EO and TQM have gained considerable attention among the academics and practitioners because of their strategic significance (Olkiewicz, 2018).

A rapid growth of empirical research examining enterpreneurial orientation (Lumpkin & Dess, 1996) and total quality management (Yasin, Alavi, Kunt, & Zimmerer, 2004; Kobylinski, & Prasad, 2018), with strong evidence regarding their impact on the performance of organisation has been observed. However, a few studies have cited inconclusive findings regarding TQM initiatives (Terziovski & Sohal, 2000), and others have raised questions regarding the EO strategy's appropriateness for the effectiveness of organisation (Li, Huang, & Tsai, 2009; Wiklund & Shepherd, 2005). Around the globe, the experience of unsuccessful strategy implementation was not uncommon, as most (70-90%) of the organisations experienced failure to implement intended strategies (Fatula, 2018).

The inconsistent research findings regarding the relationship between EO, TQM, and organizational performance can be addressed by investigating the impact of influential

organisational variables on the TQM, EO, and performance. In the view of Douglas and Judge (2001) as well as Ehigie and McAndrew (2005), other organizational variables must also be considered when assessing the association between TQM and performance. Wiklund and Shepherd (2005) also noted that in order to resolve the problem of inconclusive findings, additional variables must be incorporated.

Prajogo and McDermott (2005) have suggested 'organizational culture' as one of the organizational outcome factors. Thus, it has been receiving considerable attention among scholars to assess organizational strategy with reference to organizational change and contingency theories. However, there is limited literature available regarding the role of organizational culture in the implementation of organizational strategy during the initial stages (Prajogo & Sohal, 2001). Therefore, more empirical studies are needed to investigate the nature of the association between organizational culture and strategy implementation (Sanchez, 2018).

This study was conducted to fill the existing gap in literature. Around the globe, the services sector has been gaining considerable attention as the economy's main growth contributor. In the case of industrialized economies, more than a 50% contribution of the services sector in GDP has been reported by Gupta, McDaniel, and Kanthi Herath (2005). Furthermore, the revolution of Internet and Communication Technology (ICT) has improved the role of the services sector.

Frequent financial crises demonstrate that the banking sector has experienced a challenging business environment and rapid market changes. The banking sector has witnessed cut-throat competition because of the rapid increase in service providers and financial products. Strong competition has occurred between organisations which provide financial services and products, such as insurance companies and post offices. Therefore, Khalid and Irshad (2010) suggested that in order to survive and develop a competitive advantage, banks need to offer innovative and high-quality services and products at comparatively low prices. Banks must offer distinctive products and services which could represent their inimitable, unique, and rare resources. In addition, enough attention must be given to human resource skills, capabilities, and talents in order to achieve a competitive advantage.

## **Hypothesis Development**

### ***Organizational performance and Entrepreneurial Orientation (EO)***

Several researchers have extensively studied the relationship between organizational performance and entrepreneurial orientation. A number of studies also incorporated three entrepreneurial orientation dimensions, i.e. proactiveness, risk-taking, and innovativeness. Lumpkin and Dess (2001) argued that entrepreneurial orientation can be well-predicted by

adding autonomy and competitive aggressiveness to the previously mentioned entrepreneurial orientation dimensions. Scholars have tried to investigate the association between organizational performance and entrepreneurial orientation at the rudimentary stage of a high-technological organisation. Through random sampling, 1000 samples were obtained from emerging high-tech organisations in the UK. The study employed Lumpkin and Dess' (1996) suggested framework of five entrepreneurial orientation dimensions. The study concluded that at this stage, business performance has a positive correlation with just two dimensions, innovativeness and proactiveness, whereas risk-taking was found to be negatively associated with performance. In addition, at the embryonic stage, no relationship has found between autonomy and competitive aggressiveness (Shawtari et al., 2016).

According to the study, innovation is the pillar of entrepreneurship. Extensive research has been conducted examining the impact of innovation on the performance of an organisation. The investigation of this phenomena has been receiving considerable attention. The relationship between organizational performance and personal mastery using organizational innovation and learning was analysed. Data for 410 Spanish firms was obtained and a confirmatory factor analysis was then performed. Direct, as well as indirect, positive relationships were identified between organizational performance and personal mastery using innovation and learning. A positive relationship also exists between organizational performance and organizational innovation. The results have shown that, through innovation, organizational performance directly, as well as indirectly, influences organizational learning.

Using data from 165 Taiwanese entrepreneurs from the future and securities institutes, the existence of correlation between organizational performance and entrepreneurial orientation was investigated. The study examined the role of the knowledge creation process as a mediator. The results indicated a substantial positive association between organizational performance and entrepreneurial orientation (EO). The study also revealed that the knowledge creation process is a significant mediator in the relationship between organizational performance and EO. In a similar stream of research, another study examined the entrepreneurial orientation profiles of SME's operating in Greece in order to explain the product innovation dimensions of performance potential. The study examined the data of 149 manufacturing companies and discovered two groups, passive and active entrepreneurs, which comprise new product innovators. The new products reflected the entrepreneurial attitudes instilled in the group of active entrepreneurs. Antoncic and Prodan (2008) also confirmed the significance of entrepreneurial orientation and noted corporate entrepreneurship as imperative to organizational performance. The study attempted to create an alliance-driven corporate technological entrepreneurial model in order to analyse its influence on the performance of an organization. For this reason, the study obtained 226 samples from manufacturing firms operating in Slovenia. The results indicated the effective involvement of 120 strategic alliances on the corporate technological entrepreneurship which,

in turn, affect the performance of an organization. Based on the literature reviewed, the current study has formulated the following hypothesis:

**H1:** Entrepreneur orientation (EO) has a significant impact on organizational performance (OP).

### ***Performance and Organizational Culture***

A study by Denison (1984) suggested that a significant correlation exists between decision making and work organization and the financial performance of organisation. The cultural strength predicts short term organizational performance when measured as return on investment, return on sales, and return on assets. Following Denison's (1984) study, the research was replicated and it was confirmed that short term organizational performance can be predicted by a strong culture. In order to quantify effectiveness, Denison (1984) employed the traits approach which comprised four features: consistency, involvement, mission, and adaptability. The study measured organizational performance using subjective performance measures such as sales growth, new product development, cash flows, profitability, and market share. Another study also described this significant relationship between organizational performance and cultural strength. They employed an organizational culture profile (OCP) taken from another study. The term 'organizational culture profile' involves values such as risk taking, being careful, secure employment, being competitive, fairness, autonomy, and being team oriented. These are related to most critical organizational performance criteria such as return on assets, net profitability, and sales turnover. It has been suggested that, in comparison with service firms, a high correlation exists between organizational performance and OC in manufacturing firms.

Ogbonna and Harris (2000) argued that most research has produced informal conclusions about the impact of organizational culture (OC) on the performance of an organization. Therefore, researchers have devoted considerable attention to empirically assess the relationship between organizational performance and organizational culture. Organizational culture has been gaining popularity because of the assumption that it improves organisations' financial performance. Researchers have provided justification for the organizational culture's significant role in organizational performance; it is a major means to achieve a competitive advantage. Through studying non-family and family business cases, researchers have attempted to justify the role of culture for the organisations' survival and sustainability. A study has reported that the sustainability of family businesses lie in the positive cultural factors. Meanwhile, a study was conducted examining Singaporean companies in order to better understand the role of organizational culture on performance. The study concluded that cultural strength and innovation were correlated with the sum insured, whereas, task and team

orientation were correlated with staff turnover. In addition, the study discovered that for the manufacturing industry, a correlation exists between supportiveness and net profits growth.

Based on their comprehensive review of the TQM literature, Sila and Ebrahimpour (2002) found that empirical studies conducted to explore the relationship between TQM practices and organizational performance relationship produced inconsistent findings. To resolve this confusing situation and to clarify the reasons behind the mixed results, some researchers such as Ehigie and McAndrew (2005) suggested variables that may influence the success of TQM implementation and organizational performance should be thoroughly investigated and examined in future research. Additionally, it has been widely reported in the literature that organizational culture (OC) is among the variables that can influence and better explain the relationship between organizational strategies and long-term organizational performance.

Moreover, it has been claimed that there is almost consensus among operations management researchers that supportive organizational culture (OC) is the main factor in successful TQM strategy implementation. Supportive organizational culture (OC) implies that all the employees are committed to TQM practices which result in the production of high quality products and services. In addition, a supportive organizational culture (OC) enables all employees to be fully engaged and positively participate in the implementation and evaluation of the TQM processes. In a similar vein, many researchers have confirmed the substantial role played by organizational culture (OC) in successful organizational change driven by TQM initiatives. However, the lack of an accepted theoretical framework of TQM strategy allowed for endless debates among the different approaches. According to many researchers, it has been agreed that successful TQM initiatives in an organization can mainly be attributed to the fit between TQM practices and the organization's cultural environment. In other words, it has been widely argued by many researchers that successful implementation of TQM is largely based on the creation of quality culture to achieve competitiveness by satisfying quality-conscious customers (Kanji & Wallace, 2000; Kabir, & Aftab, 2017). These views, however, are in line with the assumptions of contingency theory and organizational change theory that focus on the fit concept. That is, the greater the fit between strategies such as TQM and EO and organizational culture, the more successful and effective the strategy implementation.

On the other hand, the failure of TQM to enhance the organizational performance has been attributed to three main reasons in the literature. The first reason is the lack of organizational strategic focus among top management. As a result, there is wishful thinking that TQM implementation will result in immediate results in the short term. The second reason is related to the lack of commitment of top management regarding the quality of products and services in an organization. Finally, the lack of a supportive organizational culture (OC) affects the

successful implementation of TQM as a change strategy to improve the overall organizational performance.

H2: Organizational culture (OC) has significant impact on organizational performance (OP).

### ***TQM, EO, OC, and the Organizational Performance***

Both practitioners and academics argue that all external factors which might affect the organizational performance of banks are not predictable. Therefore, for any bank to survive and gain a growing market share it should produce innovative products and services, based on their internal resources, which differ from those of their competitors. They should also adopt a high quality standard for all of its activities and processes. Many researchers argue that TQM strategy is one of the most important developments in the management field and has been found to provide a competitive advantage around the world (Prajogo & Sohal, 2001). Over the past few decades, more attention has been given to the TQM practices and their effects, if implemented, on the performance of any business entity. Therefore, many organizations in different sectors of the economy such as manufacturing, service, health care, education, and government have been implementing TQM practices to improve their performance and effectiveness. This increasing attention given to TQM strategy is due to its perceived role as a source of competitive advantage. Moreover, TQM practice implementation is considered to be a good form of fundamental change of the organization and an essential component of the effective management system with which the organization can cope with a new and more challenging market environment and achieve competitive survival (Kandhro, & Pathrannarakul, 2013; Chebbi, Yahiaoui, Sellami, Papasolomou, & Melanthiou, 2019).

Moreover, the link between TQM practices and organizational performance has been extensively investigated by many researchers. For example, Chong and Rundus (2004) concluded that there is a strong positive association between TQM practices and organizational performance. Recently, researchers have been studying the TQM practices as an approach to create a competitive advantage and enhanced organizational performance (Sila & Ebrahimpour, 2005). Aside from that, there is also anecdotal evidence that the majority of studies in the literature investigating the relationship between TQM practices and organizational performance have focused on the role of TQM in the improvement of the production point in manufacturing organizations.

**H3:** TQM has a significant impact on organizational performance.

Furthermore, Prajogo and Sohal (2001) examined the literature focused on the TQM-innovation relationship and found two opposing arguments. The first states that the TQM

establishes an innovation-oriented environment and therefore has a positive relationship with innovation and subsequently, performance (Dean Jr & Bowen, 1994). Whereas others argue that the implementation of TQM principles may hinder organizational innovation. Similarly, there has been significant attention devoted by many researchers to study the growing influence of entrepreneurial orientation (EO) on organizational performance. Some studies have considered that the entrepreneurial orientation (EO) could be an influential antecedent of effective organizational performance (Wiklund, 1999; Wiklund & Shepherd, 2005). On the other hand, other studies do not support this relationship. From the point of view of the resource-advantage theory, the entrepreneurial orientation (EO) is a crucial factor which enables the firm to create a competitive position in the marketplace and enhance a competitive advantage over their competitors (Ireland, Hitt, & Sirmon, 2003; Wiklund & Shepherd, 2005; Kobylinski, 2018). In today's entrepreneurial business environment, the pace of change has been rapidly increasing and the innovation in all levels of business has been gaining more importance than ever before. Hence, managers and business leaders should foster and create innovative environments (Zahra & George, 2017). Despite the numerous attempts to demonstrate the direct positive relationship between TQM practices and organizational performance, the findings of these studies were inconclusive and two opposing findings have been identified (Prajogo & Sohal, 2001). Similarly, the 48 findings in the literature regarding the relationship between entrepreneurial orientation (EO) and organizational performance have been consistent whereas findings regarding the moderating variables on the EO-organizational performance relationship have been mixed. This lack of consistency means researchers should explore the potential moderating or mediating variables in future studies in order to produce more conclusive empirical results (Maçães, Farhangmehr, & Pinho, 2007; Keho, 2017).

**H4:** TQM has a significant impact on organizational culture.

Despite the numerous attempts to demonstrate the positive direct relationship between TQM practices and the organizational performance, the findings of these studies were inconclusive and two opposite findings have been identified (Prajogo & Sohal, 2001). Similarly, the 48 findings in the literature regarding the relationship between entrepreneurial orientation (EO) and organizational performance have been consistent whereas findings regarding the moderating variables on the EO-organizational performance relationship have been mixed. This lack of consistency means researchers should explore the potential moderating or mediating variables in future studies in order to produce more conclusive empirical results (Maçães et al., 2007). Therefore, to create a sustainable competitive advantage for an organization, both leaders and employees should set up a culture that encourages constant change and produces an innovative and creative business environment that results in high quality products and services (Khan, & Adnan Hye, 2014; Altaf, Hameed, Nadeem, & Shahzad, 2019).

**H5:** Entrepreneur orientation has a significant impact on organizational culture.

Furthermore, there has been a significant amount of research in the area of organizational sciences which has extensively studied organizational culture (OC) as the critical factor for effective and competitive performance in organizations. Traditionally, organizational culture (OC) is defined as the set of ideologies and core values shared within an organization; it also provides the context in which strategies are formulated and implemented (Altaf et al., 2019). Hence, the culture in which the organization operates will affect the organizational performance. Many studies such as those conducted by Deal and Kennedy (1983) and Deshpandé and Farley (2004) have established that there is a strong impact of organizational culture (OC) on organizational performance and sustainable competitive advantage processes. These studies have also demonstrated that the stronger the culture in which an organization operates, the more effective and successful the organizational performance. The literature also indicates that with a lack of communication, trust, innovation, and appropriate organizational culture (OC), it would become impossible to perform and the organization would not be able to create a sustained competitive advantage (McDermott & O'dell, 2001). This, in fact, may drive researchers to think about the interaction between TQM practices, entrepreneurial orientation (EO), and organizational culture (OC) and their effects on the organizational performance.

**H6:** Organizational culture (OC) mediates the relationship between entrepreneur orientation (EO) and organizational performance (OP).

**H7:** Organizational culture (OC) mediates the relationship between TQM and organizational performance (OP).

## **Methodology**

This research study is based upon analyzing the relationships between the variables of organizational culture (OC), entrepreneur orientation (EO), TQM, and organizational performance (OP). For research analysis, a quantitative research approach has been adopted. The method of collecting information is via questionnaire survey. The use of questionnaire survey allows for the use of a large sample size and a detailed analysis of the responses collected. The instrument for data collection is questionnaire survey. The survey responses are quantified. The relationship between the dependent, independent, and mediating variables is determined through questionnaire analysis. The questionnaire has been structured considering the research objectives, problems, and hypotheses developed. The respondents were given Likert scales to answer the questions. A literature review was conducted in the development of the questionnaire survey. The relative importance of the variables in

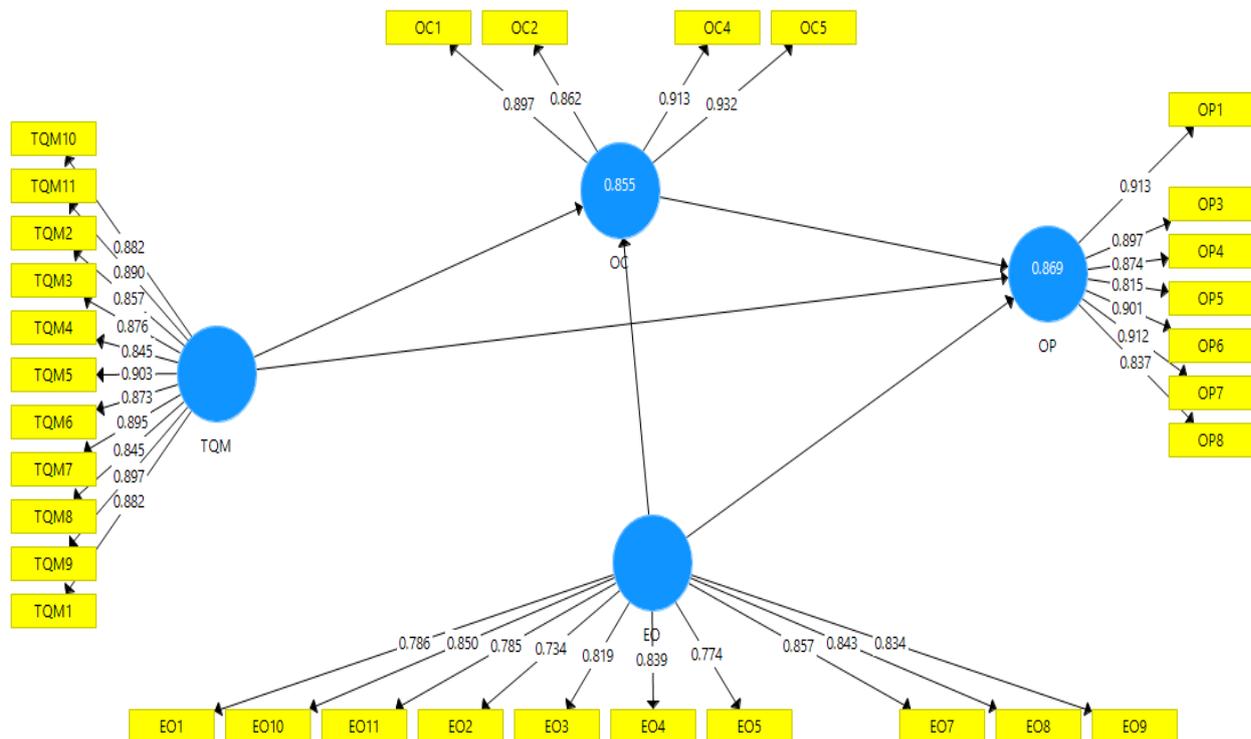
influencing employee performance within the Indonesian manufacturing sector has been assessed. The information collected through questionnaires was then added to the statistical software. The software used for data analysis were SPSS, IBM, MS Excel, and Smart-PLS. In a previous study, it was suggested that goodness of fit is not a suitable indicator of the validity of the model. According to previous researchers, when goodness of fit is used with PLS path models, it does not give good estimate for model validity as valid and invalid models cannot be differentiated. However, a two-step mechanism has been developed due to progress in the PLS path modelling and the unsuitability of model validity. These steps are used to determine the results of the PLS-SEM path modelling. The first step is the assessment of the measurement model and the second step is the assessment of the structural model. The allocation of measures to the unobserved variables is identified through the measurement model. However, the structural model involves the association between the dependent and explanatory unobserved constructs. The researcher is able to determine, explain, and forecast the extent of association among the latent variables. The reliability of individual content is determined in the assessment of the measurement model. Moreover, the convergent and discriminant validity are also examined. The questionnaire consisted of four sections and the questions were formulated in English. Section A involves questions regarding the background of the respondent, such as: ethnicity, gender, age, education level, marital status, job category, income, and length of service. Meanwhile, Sections B, C, and D involve questions regarding the elements of the study. The Likert scale of 1-5 was used as a measurement scale, where 1 represents 'strongly disagreed', 2 for 'disagreed', 3 for 'neutral', 4 for 'agreed', and 5 for 'strongly agreed'. There were 520 targeted respondents chosen for the study. Out of 339 distributed questionnaires, only 297 were received back. Therefore, the response rate was 69%, which was higher than the threshold level of 45-50%. These were then used for statistical evaluation. The average age of the targeted respondent was 47. Additionally, 63% of the total respondents belonged to the operation department and were part of that department for more than 15 years. The number of male and female respondents were 233 and 64 respectively, whereas the average working experience was 11 years.

## Results

To test the relationships between variables, the Smart PLS Structural Equation Modelling (SEM) was used. It has been recognized as a second-generation approach. The approach is considered superior to multiple regressions due to its increased abilities. In multiple regressions, only one dependent variable can be used at a time. However, PLS-SEM can use multiple dependent variables simultaneously. Therefore, the approach allows for the incorporation of various dependent variables at the one time. The approach is extensively used by the researchers of behavioral sciences and it has the ability to include unobserved (latent) variables in the model analysis. It can perform analytic modelling with the variables. Variables which cannot be observed directly are called latent variables. These variables are

estimated by other measures as stated by the researcher. In the present research study, all of the variables are latent constructs that have been measured using certain indicators. The SEM approach involves the use of inner model and an outer model.

**Figure 1. Measurement Model**



The outer loadings were examined to observe the contribution of each indicator to its respective construct. The value for outer loadings must be equal to, or above, the 0.50 threshold level. Binz, Hair Jr, Pieper, and Baldauf (2013) stated that the outer loadings should be carefully examined and if they are above 0.40, but not above 0.70, they should be omitted if there is an increase in the values of AVE and CR.

	EO	OC	OP	TQM
EO1	0.108			
EO10	0.138			
EO11	0.128			
EO2	0.104			
EO3	0.113			
EO4	0.115			
EO5	0.102			
EO7	0.140			

EO8	0.141			
EO9	0.137			
OC1		0.269		
OC2		0.266		
OC4		0.288		
OC5		0.286		
OP1			0.176	
OP3			0.160	
OP4			0.154	
OP5			0.150	
OP6			0.170	
OP7			0.165	
OP8			0.162	
TQM10				0.104
TQM11				0.111
TQM2				0.100
TQM3				0.098
TQM4				0.101
TQM5				0.114
TQM6				0.102
TQM7				0.106
TQM8				0.093
TQM9				0.109
TQM1				0.101

Internal consistency of a model determines the consistency among the same test items. Hair Jr, Claudia, Pieper, and Baldauf (2013) stated that internal consistency measures whether similar scores are obtained by items measuring the same construct. Therefore, composite reliability (CR) has been examined to assess the reliability or internal consistency of the model. CR does not take into account constructs' equal indicator loading (Hair Jr et al., 2013). The range of composite reliability is 0-1 whereby 0.60 is the threshold level (Henseler, Ringle, & Sinkovics, 2009) but the most desirable level is 0.7 or above. If the value of CR lies between 0.6-0.7, it represents average internal consistency, whereas an adequate level of internal consistency is between 0.7-0.9 (Nunnally & Bernstein, 1994). Next, the convergent validity for the study was examined. This refers to the degree to which constructs, which are theoretically associated, are actually related to each other (Henseler et al., 2009). Thus, convergent validity reflects the extent of correlation between measures of the same construct (Hair Jr et al., 2013). To examine the convergent element of measurement construct, the average value extracted (AVE) is employed and 0.50 or above is considered the threshold

value (Henseler et al., 2009). The 0.5 value is indicative of an adequate level of convergent validity. Consequently, according to Hair Jr et al. (2013), this means that half of the indicator's variance is explained by the latent construct.

**Table 2: Reliability**

	<b>Cronbach's Alpha</b>	<b>rho_A</b>	<b>Composite Reliability</b>	<b>Average Variance Extracted (AVE)</b>
<b>EO</b>	<b>0.943</b>	<b>0.948</b>	<b>0.951</b>	<b>0.661</b>
<b>OC</b>	<b>0.923</b>	<b>0.925</b>	<b>0.945</b>	<b>0.813</b>
<b>OP</b>	<b>0.951</b>	<b>0.952</b>	<b>0.960</b>	<b>0.773</b>
<b>TQM</b>	<b>0.970</b>	<b>0.971</b>	<b>0.973</b>	<b>0.769</b>

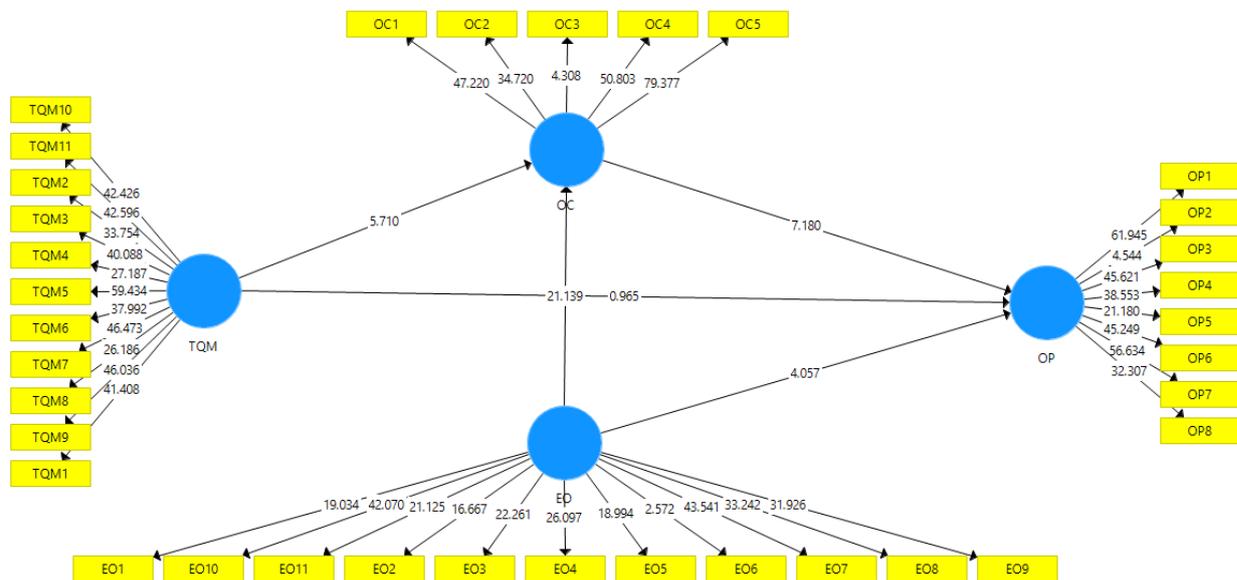
The Fornell and Larcker (1981) criterion is a commonly used and powerful measure for determining the discriminant validity in research studies. The relationship between variables and their corresponding constructs is measured through discriminant validity. Discriminant validity operationalizes the studied set of variables. Thus, the Fornell and Larcker (1981) criterion has been set as a threshold for the discriminant validity assessment. The reliability index must be equal to or greater than 0.70. The outer and cross loadings were also the same. As cross loadings measure the existing correlation between the constructs, the discriminant validity between the constructs and variables was examined in this study.

**Table 3: Discriminant Validity**

	<b>EO</b>	<b>OC</b>	<b>OP</b>	<b>TQM</b>
<b>EO</b>	0.913			
<b>OC</b>	0.905	0.931		
<b>OP</b>	0.895	0.920	0.879	
<b>TQM</b>	0.867	0.691	0.709	0.877

After confirming the non-existence of collinearity issue, the next step in the analysis was estimating the structural model. The key measures for estimating PLS-SEM's structural model are the coefficient of determination ( $R^2$ ), significance of path coefficients, predictive relevance ( $Q^2$ ), and the effect size ( $f^2$ ). Firstly, we assessed the structural model as shown in Figure 2.

**Figure 2.** Structural Model



Following this, a bootstrapping method was conducted which begins with defining the path model for the direct association between the dependent and independent variables without the involvement of mediators. The path models involve t-values and path coefficients by using the bootstrapping method and algorithm (Hair Jr et al., 2013). A systematic model analysis was conducted for the structural model in order to understand the outcomes for comprehensive testing of the proposed hypotheses. The inner model is evaluated by assessing the direct association between the independent and the dependent variables. The PLS-SEM algorithm was employed to determine the size of the path coefficients, whereas the bootstrapping procedure was employed in SmartPLS 3.0 to check for the significance of the associations. For the number of cases, the original number is used and for the bootstrapping procedure, 5000 samples were taken (Hair Jr et al., 2013; Henseler et al., 2009). The direct association among the dependent and independent variables were analyzed in the first model and a mediating variable was added into the second model to examine the relationship between the mediator and independent variables. In addition, the relationship between the dependent variable and mediator was also analyzed.

**Table 4:** Direct Relationships

	(O)	(M)	(STDEV)	T Statistics	P Values
EO -> OC	1.232	1.220	0.056	3.853	<b>0.000</b>
EO -> OP	1.131	1.116	0.071	4.057	<b>0.000</b>
OC -> OP	0.579	0.574	0.075	7.180	<b>0.000</b>
TQM -> OC	0.377	0.363	0.065	5.710	<b>0.000</b>
TQM -> OP	0.272	0.255	0.084	21.39	<b>0.001</b>

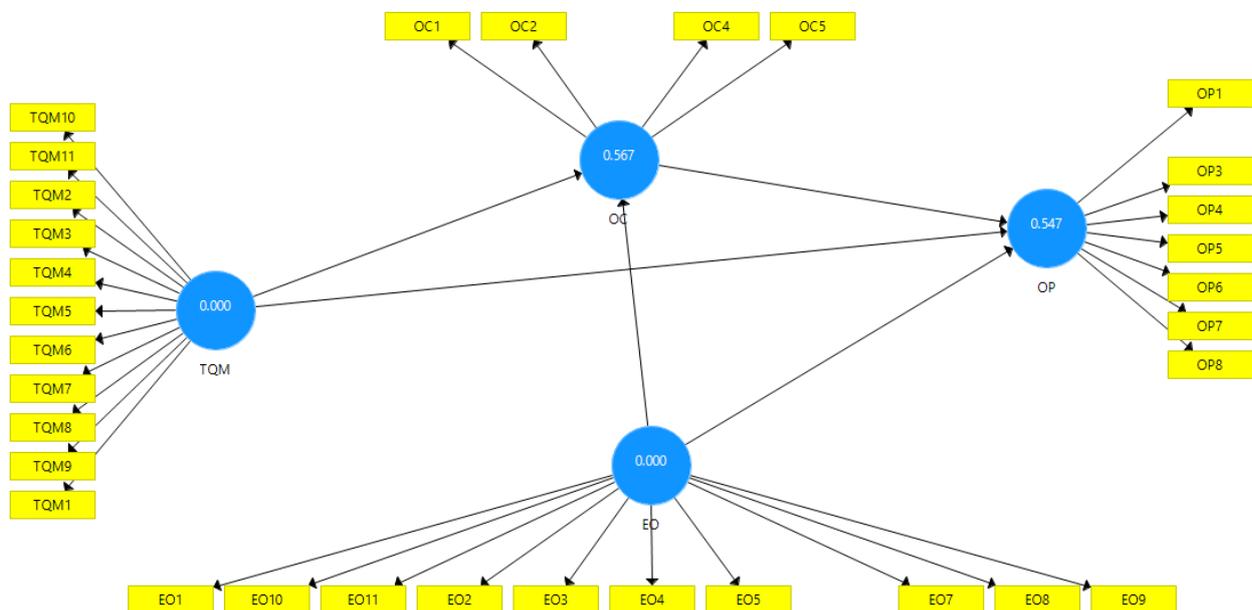
The next step involves path model estimation through the mediating variable. The main purpose of this is to observe whether the relationships between the mediator and independent variables, and between the dependent variables and mediator, are significant. The mediating role of OC in the relationship between EO and OP and between TQM and OP was examined.

**Table 5: Mediation**

	(O)	(M)	(STDEV)	T Statistics	P Values
<b>EO -&gt; OC -&gt; OP</b>	0.714	0.700	0.099	3.215	<b>0.000</b>
<b>TQM -&gt; OC -&gt; OP</b>	0.219	-0.209	0.048	4.535	<b>0.000</b>

Predictive relevance of the structural model has also been examined in the current study using the Stone-Geisser criterion. The criterion indicates whether the inner model predicts the endogenous indicators of the latent construct (Henseler et al., 2009). Thus, Stone-Geisser's Q2 test was performed through a blindfolding procedure to check for the predictive relevance of Q2 (Hair Jr et al., 2013; Henseler et al., 2009) and to obtain the measures of cross-validated redundancy for the latent construct.

**Figure 3. Predictive relevance (Q<sup>2</sup>)**



**Table 6:** Predictive relevance ( $Q^2$ )

	$Q^2 (=1-SSE/SSO)$
<b>OC</b>	0.567
<b>OP</b>	0.547

## Discussion and Conclusion

The value of current study is that it expands upon the existing literature related to contingency theory and organizational change theory by examining the relationship between TQM, EO, and organizational performance and the influence of organizational culture (OC). Therefore, the findings of this study are valuable for researchers, scholars, practitioners, and organizations (leaders and employees). In general, this interdisciplinary study contributes significantly to the limited existing knowledge regarding the effect of TQM, EO, and OC on organizational performance. The originality, theoretical and practical value of this study is discussed in the following paragraphs. Despite the extensive research that has been conducted on TQM and EO with respect to the contingency theory and organizational change, the performance implications of these strategies were not always positive. In other words, these previous findings called for further investigations to resolve the existing inconsistencies. Moreover, in light of the absence of empirical studies investigating the performance implications of the interaction between TQM practices and EO, this study represented an attempt to fill this theoretical gap in the literature. In order to resolve the inconsistent findings in the literature regarding the performance implications of TQM and EO, this study aimed to examine the effect of organizational culture to understand the principles of the contingency theory and the cultural assumptions for successful organization as emphasized by the organizational change theory.

The contributions of this study are many and some of these contributions are discussed as follows. Firstly, from a theoretical perspective, this study demonstrated the importance of TQM in the service industry, particularly in the banking industry. Moreover, it contributed to the TQM literature by re-examining the unresolved issue concerning the relationship between TQM and organizational performance. In other words, the lack of consensus in the literature regarding the implications of TQM performance called for further investigation. This study, however, significantly contributed to the literature by integrating the effect of EO, as an innovative strategy, to the model in order to better explain the variance in organizational performance. As stated earlier, the direct relationship between TQM and organizational performance examined in the previous literature produced inconclusive results (Prajogo & McDermott, 2005). As previously argued, the reported failure of some TQM initiatives in the literature was attributed to the lack of supportive organizational culture (OC). In general, the findings of this study confirmed and supported the existence of the positive impact of TQM strategy on organizational performance. Secondly, this study demonstrated the importance of

EO for organizational performance. In addition, this study contributed to the management literature by re-examining the impact of EO on organizational performance. A review of the literature concerning this relationship revealed inconsistent results. Irrespective of the extensive literature base that has examined the relationship between EO and organizational performance, there has been scholarly disagreement. Due to this inconclusiveness, many academics and practitioners question the appropriateness of an entrepreneurial orientation strategy for organizational effectiveness (Wiklund & Shepherd, 2005). To explain these results, Wiklund and Shepherd (2005) suggested that other factors may be playing a role. The results of this study, however, confirmed the positive significant effect of EO on overall organizational performance.

Thirdly, the results of this study revealed that the joint effect of TQM and EO on organizational performance was stronger than the separate effect of each strategy taken alone. Moreover, the results of this study suggested that TQM and EO strategies should be implemented as packages rather than on a piece-by-piece basis. This was clear from the interdependent relationships exhibited between the dimensions of each construct. Also, comparing the effects of TQM and EO as composite variables with their effects as singular dimensions on performance strongly suggested that these strategies should be considered as packages rather than as a pool of practices to be freely selected. Fourth, this study provided significant insight into the role played by group and entrepreneurial organizational culture in organizational strategy implementation processes. The results of this study revealed that a supportive organizational culture should be the first step in any intended strategic organizational change. However, the lack of such organizational culture may lead to a waste in organizational resources through a failure of strategy adoption. These results were in line with the organizational change theory as TQM and EO were considered as initiatives aiming to change the organizational process and managerial practices. In addition, as has been emphasized in the contingency theory and congruence model, the current revealed the importance of establishing a good fit between organizational culture and TQM strategy and EO practices to ensure successful implementation.

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