

The Integrated Relationship among Organizational Learning, TQM and Firm's Business Performance: A Structural Equation Modeling Approach

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Received: February 14, 2015

Accepted: March 17, 2015

Online Published: April 25, 2015

Abstract

The methodology of the organizational learning and total quality management (TQM) in the industry is becoming crucial, but there are few empirical studies to investigate the relationship between organizational learning and TQM on business performance in non-life insurance industry. The purpose of this paper is to understand the integrated relationship between organizational learning and TQM as two sources of sustainable competitive advantage. The paper proposes several hypotheses related to the relationship among organizational learning, TQM and business performance. A survey method is used to collect empirical data from non-life insurance companies in Taiwan. In this study, 414 effective questionnaires are analyzed and structural equation modeling (SEM) is used to verify the research framework and hypotheses. The empirical findings indicate that:

(1) Organizational learning has significant and positive effects on TQM, (2) Both organizational learning and TQM have significant and positive effects on business performance, (3) TQM fosters business performance and play a mediating role between organizational learning and business performance. Therefore, the study demonstrates that the model can integrate organizational learning and TQM practices and enhance business excellence in financial service organizations, and also extend the prior research and contribute to the existing body of literature.

Keywords: organizational learning, total quality management, integrated relationship, business performance, structural equation modeling

1. Introduction

At the end of 1980s amid the trends of financial liberalization, internationalization and economy development, the insurance industries have vigorous growth year after year. According to Taiwan Insurance Institute (TII) reports, the combined market share of top five non-life insurers rose from 54.4% in 2006 to 61.0% in 2013 as a result of merger and acquisition among insurers, indicating a rising trend in market concentration with high competition. The non-life insurance industries sell intangible products and provide "risk management" as well as "service value". Therefore, it can be accepted that the blue ocean strategy for insurance business, by providing customers with diversified expertise and quality services, has become a crucial topic in present non-life insurance industry. Recently, as information technology advances and industrial competition is no longer resource-based, the accumulation and use of knowledge within the organization are the most important intellectual assets to create value (Senge, 1990). Organizational learning prioritizes the creation and acquisition of new knowledge, and emphasizes the role of people in the creation and utilization of knowledge (Denton, 1998). Meso et al. (2002) argue that organizational learning has a strategic significance for the sustainability competitive position of the firm. The non-life insurance industry is a knowledge-based industry with its main products of insurance contracts, which are commitments supported by professional knowledge and service value. Thus, there is more need to draw on the organization's ability to learn and make non-life insurance companies to stay competitive in a rapidly changing environment in order to enhance firm's business performance.

Juran (1993) argued that competitive advantages could be obtained by the quality or service of products, and quality control has gradually become the critical competitive factor in the global market. As a result, total quality

management (TQM) has been widely accepted as the effective management tool to provide stable business operation, growth and success for enterprises (Issac et al., 2004). Numerous past literatures have confirmed that TQM increased customer satisfaction (Lee et al., 2010) and improved organizational performance (Irani et al., 2004; Ebrahimi & Sadeghi, 2013; Sadikoglu & Olcay, 2014), such as firm's quality performance, leading to an improved financial and market performance (Kaynak, 2003). Moreover, the organizations committing scarce resources to the quality model process can obtain synergistic benefits in other areas, especially organizational learning (Leonard & McAdam, 2003).

In summary, the purpose of this research is to analyze the integrated relationship among organizational learning, TQM and firm's business performance. This paper extends the prior research and contributes to the existing body of literature. First; the empirical results support the relationships between organizational learning, TQM practices, and firm's business performance on financial service industry. Second, this study examines TQM to foster business performance and plays mediating role between organizational learning and business performance. Third, this study tests an integrated model to explain the relationships among organizational learning, TQM, and business performance through an empirical examination in the non-life insurance industry in order to provide a recommendation to strength the competitive advantage, and the results can be applied to other financial service industries.

2. Literature Review and Hypotheses

2.1 Relationship between Organizational Learning, TQM, and Business Performance

Barrow (1993) argues that TQM and organizational learning are inextricably connected for the reason that learning is an intended effect of TQM and that process improvement and organizational learning are operating in a concurrent integrated way. Chiles and Choi (2000) further confirm that organizational learning is linked to quality management through customer focus, teamwork, adjustment to turbulent environment and continuous improvement. Moreno et al. (2009) use empirical data gathered from 202 quality managers to support and find that there is a strong connection between organizational learning and quality management. Li et al. (2011) also find that organizational learning (both explorative and exploitation learning) positively affect product quality. In addition, Koçoğlu et al. (2011) reveal that organizational learning constructs have positive influence on TQM. Therefore, organizational learning can play the role of facilitator of TQM environment. Based on the preceding discussion, we propose the following hypothesis:

H1: Organizational learning will positively effect on TQM in non-life insurance companies.

The firms with effective TQM implementation can accomplish the internal benefits such as improving quality, enhancing productivity, or realizing better operating income (Hendricks & Singhal, 1997; Prajogo & Brown, 2004; Corbett et al., 2005). Some studies have suggested that TQM-adopting firms enjoy a competitive advantage over non-TQM (Powell 1995, Brah et al., 2000). Furthermore, numerous empirical studies, which attempt to examine the impact of TQM, support the proposition that a continuous commitment to TQM implementation has a significant positive effect on superior firm performance, as evidenced in the case of service firms (Agus, 2004), small and medium enterprises (Ahmad et al., 2014; Wali & Boujelbene, 2010; Salaheldin, 2009) and European companies (Boulter et al., 2013). Based on the preceding discussion, we propose the following hypothesis:

H2: TQM will positively effect on firm's business performance in non-life insurance companies.

Organizational learning is valuable to firm's customers because it focuses on understanding and effectively satisfying their expressed and latent needs through new products, services and ways of running the business (Slater & Narver, 1995; Lukas et al., 1996). This shall directly lead to superior outcomes, such as greater success of new products, superior customer retention, higher customer-oriented quality, and ultimately superior growth and /or profitability (Lukas et al., 1996; Hurley & Hult, 1998; Bontis et al., 2002). Yang et al. (2007) also provide a more thorough assessment of the link between organizational learning and organizational performance, and demonstrate that organizational learning can influence firm's performance. In addition, Santo-Vijande et al. (2012) confirm the expected relationships and reveal organizational learning as an important instrument in modern markets to provide customer value and improve organizational performance by means of efficiently competitive strategy design and flexible adaptation to rapid market evolution. Noruzy et al.(2013) show that organizational learning and organizational innovation directly influenced organizational performance among manufacturing firms. Thus, based on the preceding discussion, the following hypothesis is suggested:

H3: Organizational learning will positively effect on firm's business performance in non-life insurance companies.

2.2 Organizational Learning and Business Performance: The Mediating Roles of TQM

TQM is easy to create organizational learning environment, on the other hand, organizational learning by

changing the environment, continuous improvement can absorb new ideas and innovation to create competitive advantage (Sohal & Morrison, 1995). Therefore, through the successful implementation of the TQM, the organization can develop the knowledge transfer to the promotion of a culture of knowledge sharing and cross-functional teams will contribute to organizational learning (O'Dell & Grayson, 1998). Enhancing competitiveness through TQM has become an increasingly important challenge for learning in the organizations. Consequently organizational learning must be mentioned as a key issue, especially for organizations seeking to make progress towards TQM (Martinez-Costa & Jimenez-Jimenez, 2009). Hung et al. (2011) show that **TQM** has a significant and positive effect on innovation performance and organizational learning, and partially mediates such effect. Lam et al. (2011) also suggested the managers of the service firms who intend to achieve organizational success through the implementation of TQM practices that support their firm's learning orientation and enhance their market performance. Another study conducted by Koçoğlu et al. (2011) focus on developing a platform form through which organizational learning shapes the strategic management of the organizations using the role of innovation and TQM for the aim of achieving improved firm performance. Moreover, Honarpour and Asadi (2012) indicate that the nature of relationship TQM and organizational learning is synergetic, thereby meaning that the reciprocal causation between TQM and organizational learning have a synergetic effects. Based on the preceding discussion, the following hypothesis is suggested:

H4: TQM mediates the relationship between organizational learning and firm's business performance in non-life insurance companies.

2.3 Research Model

Based on the literature review and theory development, a research model is developed in order to investigate the relationship among the promotion of organizational learning, TQM, and business performance in the non-life insurance industries. The concept of the proposed research framework is illustrated in Figure 1. By using structural equation modeling (SEM), this study conducts further empirical study and analysis of the proposed hypothesis. This study first explores the impact of promotion of organizational learning and TQM on business performance in the case of non-life industries. Second, we will investigate the mediation effects of TQM on organizational learning to business performance in non-life insurance industries.

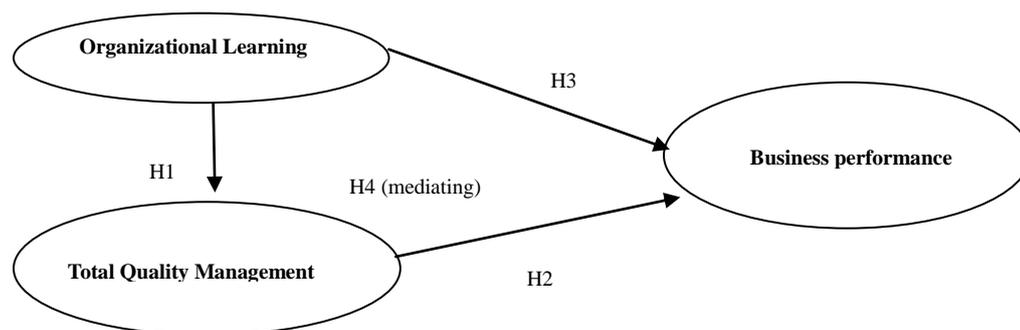


Figure 1. The research framework

3. Methodology

3.1 Sample and Data Collection

This study targets the non-life insurance industry in Taiwan. Judgment sampling is used to determine the sampling objects from The Non-life Insurance Association of the R.O.C. (2013). The data of this research is from the survey of 9 non-life insurance companies. Subjects are the employees in non-life insurance companies, including both staffs and managers, with more than one year of experience. The nine companies were Fubon, Cathay, ShinKong, Ming Tai, Tokio Marine Newa, Union, Taian, Chug Kuo and South China respectively, (ratio of employees to the entire Non-life Insurance Industry) account for 77.1% of all non-life insurance employment in 2013. Hence, the overall sample is representative and can relatively reflect the actual situation of the non-life insurance companies. A pilot study is conducted with a small size of 30, to clarify the overall structure of questionnaire. The respondents provide the comments on clarity of some items and confirm the validity of items in the questionnaire. Following the pilot test, the main survey is administered. A total 550 questionnaires are distributed in the main survey, and 434 questionnaires were collected. Among those, 20 participants did not respond to all questions, so a total of 414 questionnaires were used in the final sample, the valid questionnaires account for an effective response rate of

75.3%. A description of sample is shown in Table 1. It is conspicuous that women account for 51.21% of total sample. The highest educational attainment is primarily university graduate (49.03%). The seniority of the surveyed employees between 1 and 5 years accounts for 45.65%.

Table 1. Demographic information on respondents (N=414)

Variable	Category	Sample number	Percentage (%)
Gender	Male	202	48.79
	Female	212	51.21
Age	Less than 25 years	39	9.42
	25-35 years	197	47.58
	36-45 years	123	29.71
	46-55 years	47	11.35
	Over 56 years	8	1.94
Education	Senior high school	46	11.11
	College	108	26.09
	University	203	49.03
	Graduate school	57	13.77
Seniority	1-5	189	45.65
	6-15	170	41.06
	16 or more	55	13.29
Position	Management	90	21.74
	General staff	324	76.26

3.2 Questionnaire Design and Measures of Constructs

The questionnaires are designed with single choice items, and can be divided into four parts. The first part contains 15 items on the subject's views about the implementation of organizational learning activities. This study is according to the characteristics of non-life insurance and through a comprehensive review literature, then organizational learning will be divided into three constructs including learning orientation (Hult & Ferrel, 1997), information orientation (Huber, 1991; Tippins & Sohi, 2003) and team orientation (Hult et al., 2002). The second part contains 19 items on the subject's cognition of the implementation of TQM by the non-life insurance company. This study is based on the characteristics of the non-life insurance companies and through a comprehensive review of the TQM literature, with four constructs of TQM practices, named customer focus (Oakland, 2005; Fotopoulos & Psomas, 2010; Phan et al., 2011), continuous improvement (Tsang & Antony, 2001; Wang et al., 2012), process management (Brah et al., 2000; Sila & Ebrahimpour, 2005; Samat et al., 2006) and service culture (Sureshchander et al., 2001; Selvaraj, 2009) to represent the core of TQM practices which are found to be useful and relevant to the service industries (Brah et al., 2000; Tsang & Antony, 2001). The third part contains 10 items on the impact of the implementation of organizational learning and TQM on the firm's business performance, which according to Hao et al. (2012) divide into two constructs including financial performance (e.g., Premium revenues, profit after tax, cost improvement) and non-financial performance (e.g., market share, customer satisfaction, employee productivity). Instead of directly asking respondents to report objectives measures of their firm's financial and non-financial performance in terms of profit rates, market share, premium revenue, cost improvement, customer satisfaction and employee productivity in this study, a more indirect approach for collecting the data was utilized to avoid the omission of sensitive performance data. Similar indirect measures of firm performance have been used in prior strategy research when financial statement data was either unavailable or when they did not allow for accurate comparisons among the firms (Spanos & Lioukas, 2001; Tippins & Sohi, 2003). Likewise, the research has shown that perceived measures of performance could be a reasonable substitute for objective measures of performance (Dess & Robinson, 1984) and had a significant correlation with objective measures of financial performance (Delaney & Huselid, 1996). The fourth part contains 5 items on the basic personal information of the subject including the gender, age, educational level, seniority and position. Questionnaires are designed using a five-point Likert scale to facilitate measurement. Scores of 5, 4, 3, 2 and 1 are used to represent the answers to mean 'strongly agree', 'agree', 'no comment',

‘disagree’, ‘strongly disagree’, respectively. The operational definition of organizational learning, TQM, and business performance is shown in Table 2.

Table 2. Operational definitions and measurement items for the research variables

Dimensions of organizational learning	Operational definition	Sources
Learning orientation	Organization-wide activity of creating and using knowledge to enhance competitive advantage.	Calantone et al. (2002)
Information orientation	Integration of information including information acquisition and information dissemination	Huber,(1991); Tippins and Sohi,(2003)
Team orientation	Organizational members focused on sharing, thinking together to solve problem and charting the future operations of organization	Senge (1990)
Customer focus	Quality goals started the understanding of customer needs and ended when those needs were satisfied.	Phan et al.(2011); Oakland(2005)
Continuous improvement	Employees working in teams, having open access to management and corrective action program striving for continuous improvement.	Wiengarten et al. (2013); Slija and Ebrahimpour (2005)
Process management	Reduce process variation by building quality into operational process	Flynn et al.(1995)
Service culture	An organizational strategy that motivates the employees to have a service orientation in whatever they do.	Sureshchander et al. (2001)
Financial performance	Premium revenues, profit after tax, cost improvement	Venkatraman and Ramanujam (1986); Hao et al.(2012).
Non-financial performance	Market share, customer satisfaction, employee productivity	Venkatraman and Ramanujam (1986); Hao et al.(2012).

3.3 Reliability and Validity

This study can apply Cronbach's α to verify the consistency of items. According to Nunnally's (1978) point of view, a score more than 0.7 is considered reliable. Since the Cronbach's α of this study's organizational learning, TQM, and business performance dimensions are all more than 0.7, these are consistently reliable. Regarding the validity, the contents of this study's questionnaire are based on the relevant theories and referred to related literatures' questionnaire contents and include the opinions of scholars. Thus, this study has a considerable degree of content validity. To test the construct validity of the questionnaire, factor analysis is performed on each construct. The Kaiser-Mayer-Olkin (KMO) measure of sampling adequacy test (Kaiser, 1974) and Bartlett's (1950) Sphericity test are carried out to evaluate the adequacy of each item. Hair et al. (1998) suggest that, when the KMO value is larger than 0.6 and the p-value of the Bartlett's Sphericity test is closer to 0, it means that the item is adequate for factor analysis. The results show that all the items have a measure above 0.9, indicating the partial correlation among items is low and a high degree of collinearity is absent. Baerlett's test also shows that all the measures reach the level of significance ($p < 0.000$), indicating that a common factor is present. Therefore, the designed scale is appropriate for factor analysis.

The method of principle component and Varimax are used to extract 3 constructs of organizational learning, 4 of TQM, and 2 of business performance. In addition, according to Chang (2008), whether the questionnaire has validity, it can be judged by the factor loading of the factor analysis. In order to obtain both good reliability and validity, the questions with factor loading less than 0.5 are deleted through exploratory factor analysis. Hence, this study modifies the original questionnaire and reviews the validity of the modified questionnaire. According to the above standard, in TQM dimension, five items should be removed. The modified TQM dimension contains 14 items, and no item is removed from the other two dimensions. The reliability and validity test are shown in Table 3.

Table 3. Reliability and validity test (N=414)

Construct	Variables	Cumulative % of Explained variance	Number of items	Cronbach's α
Organizational learning	Learning orientation	58.06%	4	0.835
	Information orientation	62.00%	6	0.922
	Team orientation	65.08%	5	0.906
Total quality management	Continuous improvement	49.16%	4	0.835
	Customer focus	57.42%	3	0.877
	Service culture	61.65%	4	0.882
	Process management	64.28%	3	0.816
Business performance	Financial performance	59.12%	5	0.918
	Non-financial Performance	64.12%	5	0.841

KMO Value=0.935, Bartlett's test=2753.367, Sig=0.000, Factor loading 0.53-0.77

3.4 Common Method Various (CMV) test

As this study utilized one self-report survey to collect data on all of variables, common method bias may be present. Following Podsakoff et al. (2003), the Harman's one-factor test is used. A factor analysis of the dependent and independent variables did not yield a single-factor structure that would account for majority of the variance, thus it is not a problem in the samples.

4. Empirical Analysis and Results

4.1 Structural Equation Model (SEM)

The proposed four hypotheses are tested simultaneously using SEM. If the model does not fit data well, the initial proposed deleting insignificant paths will modify model and is then tested again. This process ends when the model fits well after the evaluation by a two-step procedure. The first step is to examine the significance path and measurement coefficients. The second step is to examine the whole model fit by using multiple criteria, as recommended by previous scholars (Hu & Bentler, 1999; Schumacker & Lomax, 2004; Hair et al., 2006). Since χ^2 is sensitive to sample size, due to our large sample size, an alternative of normed chi-square (χ^2/df) is used to assess the model fit (Bagozzi & Yi, 1988). Bollen (1989) noted that values of the (χ^2/df) <5 have been recommended as indicating reasonable fit. Using this approach, the value of (χ^2/df) is 4.503, <5 and therefore within recommended tolerance. After confirming the total measurement model, the structural model is estimated, producing the following statistics: GFI=0.942, AGFI=0.882, NFI=0.959, CFI=0.942, IFI=0.967, PGFI=0.461, PNFI=0.586, RMR=0.023, RMSEA=0.103. We conclude that the overall fit of structural model is acceptable. The index fit of the model is shown in Table 4.

Table 4. Results of the overall structure model fit

Indices	Recommended value	Indices value
χ^2/df	< 5	4.503
Good-of-fit index (GFI)	≥ 0.9	0.942
Adjusted good-of-fit index(AGFI)	≥ 0.9	0.882
Normed fit index(NFI)	≥ 0.9	0.959
Comparative fit index (CFI)	≥ 0.9	0.942
Incremental fit index(IFI)	≥ 0.9	0.967
Parsimonious goodness of fit index(PGFI)	≥ 0.5	0.461
Parsimonious normed fit index (PNFI)	≥ 0.5	0.586
Root mean residual (RMR)	≤ 0.08	0.023
Root mean square error of approximation(RMSEA)	≤ 0.1	0.103

4.2 Test of the Hypotheses

An examination of the present study is shown in Table 5. The estimated results using the maximum likelihood estimation as well as the model path diagram are shown in Figure 2. A further evaluation in the structural model indicates that organizational learning directly affects TQM ($\hat{\alpha}=0.882$; $p<0.001$) and TQM directly affects business performance ($\hat{\alpha}=0.223$, $p<0.05$). The organizational learning also directly affects business performance ($\hat{\alpha}=0.509$, $p<0.001$). These analytical results indicate that the introducing organizational learning promotes TQM and business performance. In addition, the promotion of TQM can enhance business performance. These analytical results of the path show the Hypotheses 1-3 are supported. Furthermore, the indirect effect of the business performance of an organization from organizational learning through TQM is 0.197 (0.882×0.223). Therefore, the total effect on business performance by the mediating effect of organizational learning through TQM is 0.706 ($0.509+0.197$). Furthermore, according to Ullman (2007) direct and indirect effects analysis, the indirect effect is only 27.9% of the total effect, and therefore TQM has a statistically significant partial mediating effect on the model. The result shows that Hypotheses 4 is supported. Finally, the relationship between the various aspects in the hypothesis model of this study is statistically significant with good fitness.

Table 5. Standardized path coefficient

Hypothesis	Paths	Coefficient	Results
H1	Organizational learning→TQM	0.882***	Accept
H2	TQM→business performance	0.223*	Accept
H3	Organizational learning→ business performance	0.509***	Accept
H4	Organizational learning→ TQM →business performance	0.179*	Accept

Note. *Significant at $P<0.05$, ** Significant at $P<0.01$, *** Significant at $P<0.001$.

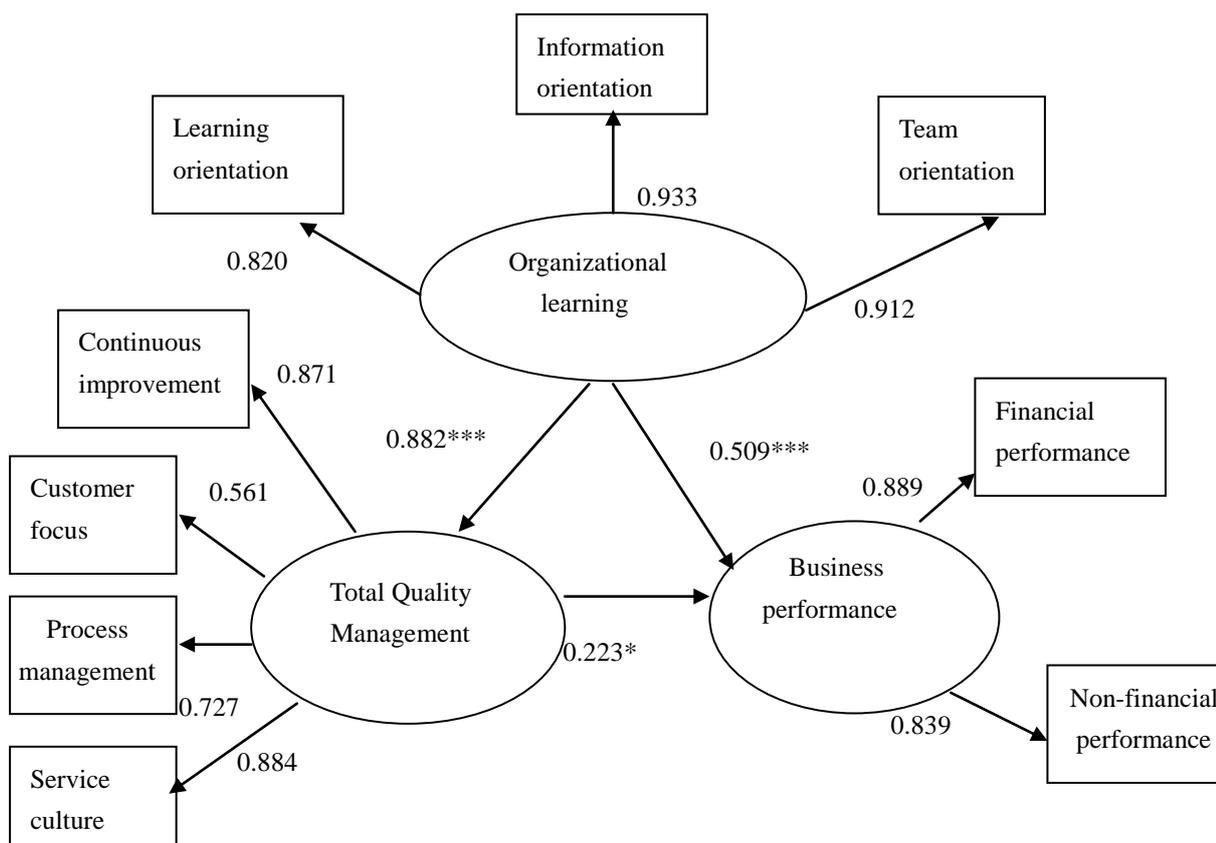


Figure 2. Path diagram for structural model

Note. *Significant at $P<0.05$, ** Significant at $P<0.01$, *** Significant at $P<0.001$.

5. Conclusion and Managerial Implications

Overall, the result of this study provides a more comprehensively theoretical and empirical foundation for understanding the integrated relationship among organizational learning, TQM and business performance. The findings also suggest that the effect of organizational learning on business performance is indirect through the success of TQM. This research is crucial if the researchers and business practitioners are to learn how the organization can effectively learn, adapt, and implement TQM in order to enhance insurer's performance and further apply to service industry and improve business development.

In practice, this research provides some practical insights into integrated relationship among organizational learning, TQM practices and business performance and extends the framework of business excellence in non-life insurance industry. First, organizational learning has a positive impact on TQM as proposed by Chiles and Choi (2000) and Koçoğlu et al. (2011), therefore, the managers can implement functional approach of learning project in practice to enhance the manager's duties and develop the concept of service quality to influence the implementation of the TQM in order to achieve the process improvement, deeply rooted in the service culture to meet the needs of the customer, and strengthen the company's competitive advantage. Second, the industries should encourage managers to design their organizations with shared open-minded approaches to problem solving, organizational culture and strategy that foster the learning, teamwork and other human resource management practices which encourage the creation of new knowledge (Fiol & Lyles, 1985; Senge, 1990) in order to enhance firm's business performance. Third, the executives should look for the synergies between organizational learning and service quality assessment process in order to establish business excellence model and continuously assess customer satisfaction of existing and potential customers and enhance total quality service for effective improvement in overall business performance (Boulter et al., 2013). Finally, it will throw some light on several issues or at least pave the way to new research projects that consolidates the study of financial service industry's organizational learning, TQM and firm's business performance at an evidential level.

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