

COST OF TOTAL QUALITY MANAGEMENT(TQM), INNOVATION AND IMPROVEMENT OF FINANCIAL PERFORMANCE

(A case study of Tose`e Ta`avon Bank in Chahar Mahal Bakhtiari and Isfahan Provinces)

*GHasem Abdollahzadeh Soreshjany and **Hamidreza Jafari Dehkordi,

*Azad University of Shahrekord, Shahrekord, Iran.

*E-mail: gh.abdollahzadeh1238@gmail.com

**Faculty member of Accounting Department, Faculty of Human Sciences, Islamic Azad University, Shahrekord Branch, Shahrekord, Iran.

**E-mail- hamidreza.jafari55@gmail.com

ABSTRACT

In today's competitive market, increased customer expectations of quality and price of products and services, made researchers pay more attention to quality improvement and cost reduction. Total quality management (TQM) is a management expertise to improve the quality and reduce the costs. This study examined the effect of cost of TQM on financial performance improvement through innovation in providing banking services in Tose`e Ta`avon Bank¹ in Chahar Mahal Bakhtiari and Isfahan Provinces. For this purpose, the staff of Tose`e Ta`avon Bank were chosen as the population of the study and the data needed for research were collected through standard questionnaires, and then were analyzed by SMART PLS 2.0, Structural Equation Modeling (SEM) and Partial Least Squares method. Results of this study showed that costs of TQM affect innovation and innovation affects financial performance. Results of this study also demonstrated that the costs of TQM affect financial performance through innovation.

KEY WORDS: Costs of total quality management, innovation, human resources, financial performance, total quality management (TQM).

INTRODUCTION

The desire to survive and succeed in the global competition, has forced organizations to provide high quality products and services to their customers (Zaree, 2009). Today, banks as institutions affecting the success of the economic system of countries need to achieve a high quality in providing services, and innovation and increased financial performance in today's competitive environment. The importance of this issue is realized once we know that customers in the Service Sector (due to their direct and continuous relationship) are more sensitive to services they receive than customers in the productive sectors. However, due to the presence of young educated staff in Tose`e Ta`avon Bank, the financial performance of this bank compared to other banks is lower. This made us uncover and explain the reasons behind lower performance of the bank. Tose`e Ta`avon Bank as a specialized bank has always tried to use the latest and most successful tools and scientific methods to improve the quality of its services. Total quality management (TQM) is a systematized structure that puts emphasis on continuous improvement of all activities within an organization. The purpose of TQM is to improve the quality of products and services, human resources, processes and available equipment and at the same time reduce the costs of its operational area (Zaree, 2009). Innovation is one of the main achievements of the TQM implementation. Innovation occurs when the idea develops as a product, process or service. Innovation should be understood as a process which includes coming up with new ideas, getting the necessary knowledge from different ways, conversion of ideas, knowledge or technology to new products or services and offering them to the market (customer) and its admission by some customers (Shahin and Sadeq Beigy, 2010). To encourage innovation could be an important step towards increasing customer satisfaction and financial performance. The most well-known definition for performance provided by Neely *et al.* (2002) is: the process of explaining the quality of effectiveness and efficiency of the past measures. Based on this definition, performance has two components: 1) efficiency which describes how an organization makes use of resources in production of services or products, i.e. the relation between real and desired composition of inputs to produce certain outputs and 2) effectiveness which describes the level of organizational goal achievement. These goals are explained in the framework of events, availability and quality.

¹ also known as "Cooperative Development Bank"

The literature show that increased levels of quality cannot by itself meet the customers' need for quality. Nevertheless, the complementary factor to meet the needs of customers is to reduce the costs. A way to reduce the costs and increase quality is to apply TQM (Shams Thani, 2011). From an operational perspective, quality is an activity that enhances the operational and sometimes structural capabilities in the goods and services produced. This activity, defined as a set of measures in the form of certain duties, consumes organizational resource. Consumption of organizational resource may represent a cost. Therefore, quality entails costs (Cemal *et al.*, 2012). Thus, this study tries to analyze the impact of TQM costs on innovation and improved financial performance in providing banking services at Tose'e Ta'avon Bank in Chahar Mahal Bakhtiari and Isfahan Provinces in 2014. In one hand, the research confirms the impact of TQM on innovation (Scholl and Kazazy, 2013) and the impact of TQM on performance, on the other hand (Prajogo, 2004). However, this study examines the mediating role of innovation on the relationship between the costs of TQM and financial performance in the banking industry.

REVIEW OF LITERATURE

In today's highly competitive environment, banks' success depends on their (internal or external) customers. Rosenberg (1994), a well-known banker, believed that in the twenty-first century, companies would deal with three basic elements of success, i.e., an unconditional commitment to quality control, strategic investment in human resources and the innovative use of efficient technologies. He believed the quality control is the most important one and would guarantee their superiority (Nitham & Medhat, 1999). Implementation of TQM system improves the innovation process with regard to TQM elements such as continuous improvement and customer focus. (Baldwin, & Johnson, 1996; Flynn, Schroeder, & Sakakibara, 1994, 1995).

TQM and innovation both have similar goals and importance in performance of organizations, especially in service industry. They both seek to integrate the objectives and performance to satisfy customers and gain competitive advantage (Kaynak, 2003). They involved in work all employees in the organization who were separate from management and business process. In addition, they both offer a continuous improvement and sustainable development (Oke, 2007; Singh and Smith, 2004, Rahman, and Qureshi, 2012). Continuous improvement, customer satisfaction and open culture are main common objectives of TQM and innovation (Kim, Kumar and Kumar, 2012, D. Prajogo and Sohal, Kaynak, 2002, 2003). Therefore, the relationship between TQM and innovation can help determine the performance and development of the organization.

A study was done by Scholl and Kazazy (2013) for determining the mediating role of organizational learning on the relationship between TQM on innovative performance. The results showed that TQM included support of a senior management, employee involvement, continuous improvement and customer focus; the highest share (factor loading) of quality management belonged to customer focus and least share belonged to employee involvement. The indexes of innovative performance are divided into three groups: innovation in products, innovation in process and organizational innovation; of which innovation in process and organizational innovation respectively had the highest and lowest share in quality management. Organizational learning was taken as an intervening variable that included learning strategy and learning culture, of which learning strategy had higher load factor. In general, the results of structural equations show that innovative performance is 79 percent directly influenced by TQM and this effect is adjusted by organizational learning.

Abdul Talib and Mustafa (2013) in a study examined the impact of total quality management (TQM) on innovation of service organizations. This research was conducted in 2013 in Malaysia and proved the role and high importance of service firms in gross national product of countries through their use of innovation and quality management techniques. In this study, a conceptual framework was provided for innovation in service organizations through the implementation of TQM, including quality leadership, employee involvement, empowering the employees, information and analysis, training, customer focus, and continuous improvement. Cemal *et al.* (2012) conducted a study entitled "total quality management practices' effects on quality and innovative performance". The results show a positive relationship between TQM activities, quality and innovative performance. Cemal *et al.* argue that TQM and its relation with performance is a very important subject in management literature. With regard to gap in the research literature and in order to achieve the research objectives, three research hypotheses were proposed: Hypothesis H1: Costs of TQM have an impact on innovation.

Hypothesis H2: Innovation has an impact on financial performance.

Hypothesis H3: Innovation has a mediating role in the relationship between TQM costs and financial performance.

MATERIALS AND METHODS

This study is a descriptive and correlational one of fieldwork type conducted in a survey method. Survey research method was used to assess the opinions, views and beliefs in connection with various subjects. Structural equation modelling (SEM) and the Least Partial Squares (LPS) model were used to test research hypotheses. Costs of TQM as an independent variable consist of six components: costs of leadership quality, employee involvement costs, the costs of empowering the employees, the costs of training the employees, costs of customer focus, costs of continuous improvement. Innovation was taken as a mediating variable. The indexes of innovative performance are divided into three groups: innovation in products, innovation in process and organizational (administrative) innovation (Jimenez-Jimenez *et al*, 2008). Financial performance was the dependent variable which had six components: brand value, market share, profits, earnings, return on assets and return on equity. The statistical population of this study included 220 managers, employees of branch offices and branches of Tose'e Ta'avon Bank in Chahar Mahal Bakhtiari and Isfahan Provinces. The sample was comprised of 105 subjects who were familiar with TQM and had at least 2 years of practical work experience. Questionnaires were used for data collection. Their formal and content validity of were confirmed by 10 top educators in the fields of accounting and management. Using factor analysis, the factorial validity of the questionnaire was examined and confirmed and the results of which are also presented in Table 1.0. In Table 1.0, the internal reliability of the questionnaires (internal consistency of indicators) is approved according to the results obtained from PLS algorithm (Cronbach's alpha greater than 0.7). The composite reliability for all constructs in Table. 1 is also greater than 0.7 and as a result, each block is considered homogeneous and the reliability is confirmed (Hair *et al*, 1998). The average variance extracted (AVE) was used to examine convergent validity. As all constructs have an AVE greater than 0.5, the convergent validity of the model is confirmed (Fornell and Larcker, 1981).

Table .1. Composite reliability, internal reliability and convergent validity of the research models

Constructs	Number of items	The factor load (FL)	Cronbach's alpha coefficients	Composite reliability(CR)	Average variance extracted (AVE)
Brand value	2	0.676 to 0.870	0.821	0.752	0.607
Market share	1	0.869	0.981	0.755	0.755
profits	1	0.909	0.932	0.827	0.821
earnings	1	0.737	0.918	.743	0.534
Return on investment	2	0.621 to 0.772	0.727	0.856	0.501
Return on equity	1	0.889	0.815	0.790	0.790
Costs of Quality Leadership	5	0.651 to 0.731	0.888	0.860	0.518
costs of employee involvement	5	0.639 to 0.817	0.852	0.899	0.553
costs of empowering the employees	4	0.710 to 0.936	0.851	0.844	.693
The costs of training	4	0.701 to 0.800	0.817	0.958	0.576
The cost of customer focus	3	0.821 to 0.987	.873	0.812	0.886
The cost of continuous improvement	4	0.534 to 0.809	0.750	0.701	0.526
Innovation in products	5	0.559 to 0.805	0.825	0.884	0.547
Innovation in process	6	0.763 to 0.896	0.812	0.866	0.702
Administrative Innovation	4	0.623 to 0.890	0.864	0.831	0.622

RESULTS

According to the results obtained from Least Partial Squares (LPS) model in Table. 2, the costs of TQM have a positive significant effect on innovation. As a result, the first hypothesis is accepted with values of ($\beta = 0.571$) and ($t = 16.226$) at α level of $P < 0.001$. The second hypothesis, the results show that innovation has a positive and significant effect on performance with the values of ($\beta = 0.143$) and ($t = 2.246$) and at α level of $P < 0.05$. Finally, the third hypothesis with

values of ($\beta=0.188$) and ($t = 2.839$) in the significance level of $P < 0.01$ is approved. Therefore, the costs of TQM through innovation have a positive and significant effect on performance. In this research, the results of structural model are shown in Figure 1.0 in terms of β . As can be seen, of six components of TQM which comprise the costs of TQM, the costs of employee involvement had the greatest impact on costs of TQM which amounted to 0.243. Cost of Quality Leadership with the value of 0.168 had the minimum impact on costs of TQM.

Table 2. The path coefficients and t-statistic for the research model

Hypotheses	Path	Path coefficients (β)	T-Statistic	Rejected / confirmed
H1	The costs of TQM on innovation	0.571 *	16.226	Confirmed
H2	Innovation impacts on performance	0.143 **	2.246	Confirmed
H3	The costs of TQM on performance through Innovation	0.188 ***	2.839	Confirmed

* $P < 0.001$, ** $P < 0.05$, *** $P < 0.01$,

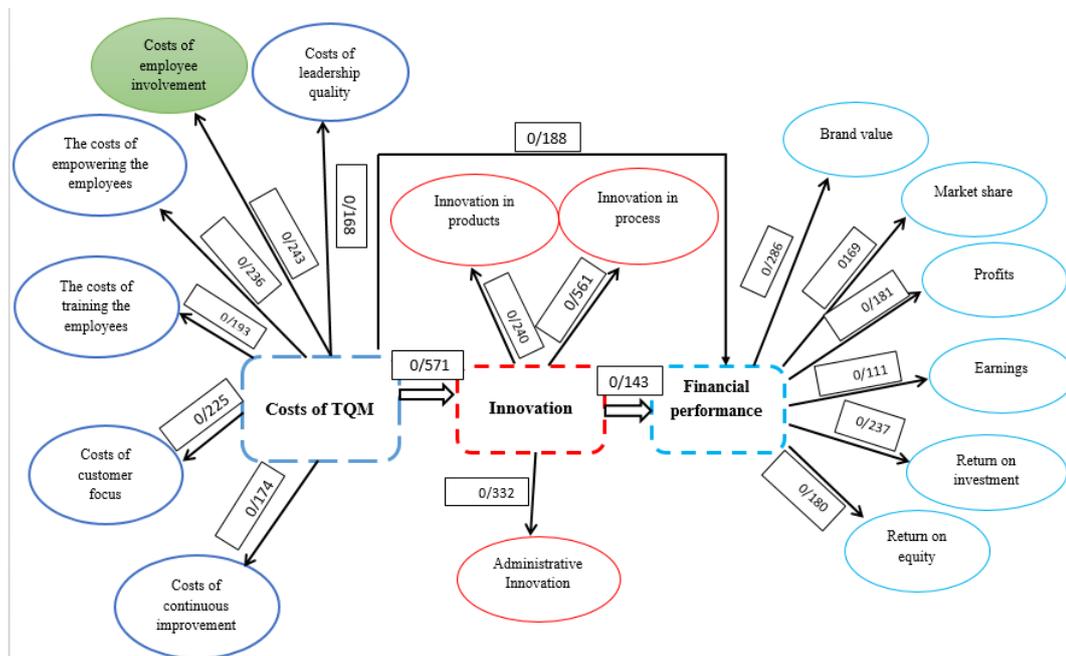


Figure 1. The structural model of the research in terms of (β)

According to Table 3., the effect of TQM costs through innovation on performance will be equal to 0.082; this is the amount of indirect effects of TQM costs on performance.

Table 3.0 Direct and indirect effects for the research model

Path	Direct effect	Indirect effect	Total effect
Costs of TQM → innovation	0.565	-----	0.565
Innovation → performance	0.101	-----	0.101
Costs of TQM → (innovation) on performance	0.188	0.023	0.211

To estimate the fitness model, Tenenhaus *et al.*, (2005) introduced Goodness-of-fit (GOF) index for Partial Least Squares (PLS). In order to test the structural model (which shows the relationship between latent variables), we used the coefficient of determination (R²) and Communality index. Table 4.0 shows Goodness-of-fit index for the research model:

Table 4. GOF index for the research model

Constructs	Coefficient of determination (R ²)	Communality index
The costs of TQM	0	0.983
Performance	0.025	0.926
Innovation	0.326	0.987

Goodness-of-fit index for model 1, is calculated through the geometric mean of the average communality index and coefficient of determination. According to the table above, the GOF index for the Model 1 is equal to 0.411. It is a number between 0 and 1. The closer to 1, the higher is the fitness of the model.

DISCUSSION AND CONCLUSION

The results showed that the costs of total quality management (TQM) have a positive effect on innovation and the first research hypothesis is confirmed. This finding is similar to the results of a survey conducted by Abdul Talib and Mustafa (2013) which confirms the positive relationship between TQM activities, quality and innovative performance. TQM through innovation both provide a continuous improvement and sustainable development (Oke, 2007; Singh, & Smith, 2004; Talib, Rahman, & Qureshi, 2012). Continuous improvement, customer satisfaction and open culture are main common goals of TQM and innovation (Kim, Kumar, & Kumar, 2012; D. Prajogo & Sohal, 2003; Kaynak, 2003). Sadigo and Zahir showed that all elements of TQM are positively associated with innovative performance. An experimental study carried out by Huang *et al.*, also confirmed the positive relationship between TQM and innovative performance. Therefore, the relation between TQM and innovation can determine the performance and development of an organization. If the bank staff are provided with training at the beginning, and their participation in the decision making process is taken seriously, and if this process continues on an ongoing basis, it will encourage innovation and new ideas of individual staff members.

The results also showed that innovation has a positive and significant effect on financial performance. Thus, the second research hypothesis is confirmed. This finding is similar to the results of a research conducted by Cemal *et al.*, (2012). If innovative ideas and initiatives, for instance to attract deposits, pay loans, etc., are presented by bank staff, it will keep customers and increase new ones, it will also increase the profitability and performance of the bank, and ultimately benefits employees, customers and investors.

In line with the third research hypothesis, the results showed that the costs of TQM have a positive and significant effect on financial performance through innovation. In other words, innovation has a mediating role in the relationship between the costs of TQM and financial performance. This finding is similar to the results of the research conducted by Arawati and Za'faran (2011). When TQM system is appropriately implemented in the Bank, it leads to improvement of innovative process and will also increase the Bank's financial performance. Mengo *et al.*, believe that the leader of the organic elements of TQM encourages employees to provide innovative ideas to solve problems or develop new products. In TQM processes, customer focus has a significant positive correlation with innovative performance. Customer focus encourages organizations to constantly explore the needs and expectations of new customers. This way companies can remain in the globally competitive environment. In addition, continuous improvement is very important for innovation to succeed by encouraging changes, critical and creative thinking in the organization.

REFERENCES

- Abdul Talib Bon and Esam M.A. Mustafa (2013).** Impact of Total Quality Management on Innovation in Service Organizations: Literature review and New Conceptual Framework. *Proc. Engineering*. 53. 516-529.
- Arawati Agusa and Za'faran Hassan (2011).** Enhancing Production Performance and Customer Performance Through Total Quality Management (TQM): Strategies For Competitive Advantage The 7th International Strategic Management Conference Proc. *Social Behavioral Sci.* 24 (2011):1650-1662.
- Baldwin J.R. and Johnson J. (1996).** Business strategies in more- and less-innovative firms in Canada . *Research Policy*, 25 (5): 785-804.
- Cemal Zehir, Öznur Gülen Ertosun, Songül Zehir and Büşra Müceldilli (2012).** Total Quality Management Practices' Effects on Quality Performance and Innovative Performance *Procedia - Social Behavioral Sci.* 41: 273-280.
- Flynn B.B., Schroeder R.G. and Sakakibara S. (1994).** A framework for quality management research and an associated measurement instrument. *J. Operations Management*. 11 (4): 339-366.
- Flynn B.B., Schroeder R.G., and Sakakibara S. (1995).** The Impact of Quality Management Practices on Performance and Competitive Advantage. *Decision Sci.* 26 (5): 659-691.
- Fornell C. and Larcker D. (1981).** Evaluating structural equation models with unobservable variables and measurement error. *J. Marketing Res.* 18 (3): 39-50.
- Hair J.F., Anderson R.E., Tatham R.L. and Black W.C. (1998).** *Multivariate Analysis*. 5th ed., Prentice Hall International, Englewood Cliffs, NJ.
- Hoang D.T., Igel B. and Laosirihongthong T. (2006).** The impact of total quality management on innovation: Findings from a developing country. *Int. J. Quality Reliability Management*. 23 (9): 1092 – 1117.
- Jimenez-Jimenez D., Vall R.S. and Espallardo M.H. (2008).** Fostering innovation - The role of market orientation and organizational learning. *European J. Innovation Management*. 11 (3): 389-412.
- Kaynak H. (2003).** The relationship between total quality management practices and their effects on firm performance. *J. Operations Management*. 21 (4): 405-435.
- Kim D.Y., Kumar V. and Kumar U. (2012).** Relationship between quality management practices and innovation. *J. Operations Management*. 30 (4): 295-315.
- Mielgo N.P., Poen-Monters J.M. and Ordas-Vazquez C.J. (2009).** Are quality and innovation management conflicting activities *Technovation* .
- Nitham M.H. and Medhat A.H. (1999).** Quality Programs in Banking: A Critical View. *J. Bank Cost Management Accounting*.
- Neely AD., Adams C. and Kennerley M. (2002).** *The Performance Prism: The Scorecard for Measuring and Managing Stakeholder Relationships*, Financial Times / Prentice Hall, London.
- Oke A. (2007).** Innovation types and innovation management practices in service companies. *Int. J. Operations Production Management*. 27 (6): 564 - 587.
- Prajogo D. and Sohal A. (2003).** The relationship between TQM practices, quality performance, and innovation performance: An empirical examination. *Int. J. Quality Reliability Management*. 20 (8): 901 - 918.
- Prajogo D. and Sohal A. (2004).** The multidimensionality of TQM practices in determining quality and innovation performance an empirical examination. *Total Quality Management Business Excellence*. 15 (2): 205-220.
- Rosenberg R. (1994).** Success Components for the 21st Century. *Bank Management J. January/ February*. P.36.
- Sadikoglu E. and Zehir C. (2010).** Investigating the effects of innovation and employee performance on the relationship between total quality management practices and firm performance: An empirical study of Turkish firms. *Int. J. Production Economics*. 127 (1): 13-26.
- Singh P. J. and Smith A.J.R. (2004).** Relationship between TQM and innovation: an empirical study. *J. Manufacturing Technol. Management*. 15 (5): 394 - 401.
- Shams Thani M.S. (2011).** Quality Costing, MA Student of Business Management. *J. Int. Market*. 3(11).
- Scholl A. and Kazazy A. (2013).** The Effects of Total Quality Management on Innovative Performance, the Intermediary Role of Organizational Learning. *Scientific Res. J. Management Studies (Improvement and Change)*. 23(71): 1-17.
- Tenenhaus M., Esposito Vinzi V., Chatelin Y.M. and Lauro C. (2005).** PLS path modeling. *Computational Statistics Data Analysis*. 48: 159-205.
- Zaire H. (2009).** Total Quality Management (TQM), Faculty of Economics, the University of Mazandaran.