



Studying the Impact of Total Quality Management on Entrepreneurial Organizations' Performance (Case Study: Insurance Companies in Iran)

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Author's contribution

The sole author designed, analysed, interpreted and prepared the manuscript.

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ABSTRACT

Purpose: Iran's situation in its competitive market and developing economy has encouraged entrepreneurial industrial organizations to improve the quality of their products and services so that they can enter the world's competitive market. To do so, they need to incorporate some effective means, one of which is total quality management. Total quality management is both a culture and a series of strategic principles to ensure consistent progress in entrepreneurial organizations.

Methods: This is a descriptive correlational study. The statistical population is 321 insurance employees in Tehran, Iran; 140 of these employees were randomly selected as a sample group by the use of the Morgan table. The Research tool is the Total Quality Management questionnaire that consists of the Organizational Performance Questionnaire by Kaplan and Norton (2001) and the Total Quality Management questionnaire by Wang et al (2012). Cranach's alpha method was applied to measure reliability, and the results were confirmed. To analyze the research data, inferential statistics were used including Kolmogorov–Smirnov test (K-S) for the normality of the data and the Regression method to test hypotheses. SPSS software was also used to analyze and process the research data.

Conclusion: results indicate that Total Quality Management has a significant influence on organizations' performance including the performance of financial sections, organizations' customers, the internal process, and organizations' learning and progress.

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1. INTRODUCTION

One of the most crucial factors that support an organization's survival is customer satisfaction and providing quality products and services to them. Therefore, organizations have turned to quality management systems to achieve excellent quality. Total quality management is a new management approach that enables organizations to control, organize, and observe the production procedures, products' presentation and marketing, and services (Mohaghar, 1390). Total quality management is a management method that assists organizations to improve their performance by Strengthening quality-based problem-solving (Ahmadi et al, 1391). Organizations that have incorporated total quality management and intend to improve the quality of their products and services eventually develop their competitive position, business success, and distinction of their products and services [1]. Total quality management refers to the integration of business operations to generate the best quality products and services (8). In other words, total quality management is the total management theory that tries to fulfill the customers' expectations and needs by attempts to maintain the continual improvement of each operation and process inside an organization [2]. To achieve the continual improvement process, the trilogy method of quality control, quality improvement, and quality assurance, also known as Juran's triangle, is used. Generally, continual improvements are improvements that can be slight and gradual or great and fast [3,4]. Improvement may include an increase in customer value, reduction of error, waste, and costs, production improvement, effective implementation of all resources, and responsiveness improvement. Therefore, continual improvement, as a basic principle of total quality management, concentrates on people and aims at constantly improving performance with an emphasis on learning and acceptance, which are the success keys of an organization (Rahmani et al, 1393). Considering the importance of quality in organizations and the wide attention it attracted from modern organizations, various methods and tools have been suggested to achieve quality. Today, total quality management can control services, products, or even the marketing process due to its comprehensive view of the organizational issues. Also, total quality management has been

frequently tested and confirmed by the organization performance researchers [5,6]. Organizations' ability to compete in the ever-changing global economy profoundly depends on the quality of their products and services. In the modern world, maintaining excellent quality has turned into a powerful business strategy (Kazemi et al, 1392).

1.1 Significance of the Study

Today, organizations' ability to compete in the ever-changing global economy profoundly depends on the quality of their products and services. In the modern world, maintaining excellent quality has turned into a powerful business strategy, because the quality of the products is defined by customers. Therefore, customers are the only factor that launches a competition among organizations. Therefore, some strategies are suggested to emphasize more quality. Today, winning the competition means acquiring a good knowledge of customers' needs and wants. In fact, customers have changed from the endpoint to the starting-point in a successful business. To survive, organizations need to create management based on total quality management (Wang and Chen, 2010, 274). Besides, several competitive companies are likely to improve their quality standards constantly. If a company neglects quality, it will result in customer dissatisfaction. This leads to the loss of customers and providing the opportunity for rivals to reap the benefits accrued from market needs. Consequently, allocating importance to customer needs will prioritize quality (Shakerian, 1397).

1.2 Research Literature

1.2.1 The definition of quality

According to Raves and Bender (1994), there is no single, complete, and comprehensive definition of quality. The concept of quality evolved throughout time. According to different viewpoints defining quality, various aspects of quality can be identified such as definition issues (philosophical aspect), profit and competition (economic aspect), customer satisfaction (marketing aspect), and production procedures (operations management aspect) (Kazazi, 1392).

Garvin, in 1984, introduces five views in defining quality that includes: 1-Superphilosophical

approach, 2-Approach based on the economic product, 3-Approach based on economic user, marketing, and operations management, 4-Approach based on production, and 5-Approach based on the operations management value. In 1994, Raves and Bender presented four basic definitions of quality. They defined quality in four parts: 1-Excellence, 2-Value, 3-Conformance to requirements, 4-Fulfilling customer needs with more than they need. The definition of quality that was welcomed in the 1980s was the definition "Quality is conformance to requirements" by Philip Crosby. This definition, however, had a flaw, and it was about the fact that these requirements may not be what customers need or are willing to accept. A better definition was presented by Joseph Juran under the title "Suitable quality for consumption"; in this definition, suitability is defined by customers (Ahmadi, 1391).

1.2.2 Total quality management

The concept of total quality management carries the same obscurity in the definition of quality. According to Raid et al in 1996, there is no public unanimity in the definition of total quality management. total quality management definitions vary based on the quality award approach. According to Feline et al, in 1994, total quality management is defined as:

"An integrated approach to achieve and maintain high-quality outputs, concentrating on sustaining and constantly improving the procedures and preventing faults at every level and every responsibility in an organization in order to fulfill and overfulfil customers' needs [7]."

Besides, in one of the definitions of total quality management in one of the pamphlets of the UK Department of Commerce and Industry by John Aukland, total quality management is generally defined as a means to manage the improvement of efficacy, flexibility, and competition in service and manufacturing organizations that encompasses all units, activities, and organization staff at all levels [8].

1.3 Basic Components of Total Quality

Total quality includes various components. Generally, we can name them as follows:

1. Reading the customers' minds: includes all the activities to keep customers happy and fulfilled and to excite them.

2. Planning: Planning for the future is the best strategy to improve quality and to present and perform management commitment to customers and staff. Undoubtedly, planning is one of the most significant procedures in every organization.
3. Management of reforms and problem-solving: This element guarantees efficient and organized growth towards reforming the processes and managing new services and products. By implementing this element, there will be a mindset for providing flawless services and products.
4. Process management: Process management provides a precise daily administration of fundamental processes that leads to proficiency and prognostication of intra-organizational processes as well as of business partners. This is the achievement of an expert and cost-efficient organization.
5. Developing leadership and staff's cooperation: Organization's management needs to educate all the employees so that they cooperate to in the path of achieving total quality. An organization must have a powerful leadership and prepare itself for the future by leading the organization to the common goal.

1.3.1 Total quality management and performance measurement

One of the most basic components of total quality management is performance measurement. Performance measurement has been identified as a crucial factor by the researchers over the past years. This factor includes financial and non-financial indicators [9]. According to researches, total quality management has confirmed its ability to promote a company's products. Based on experience, there is a valid correlation between performing total quality management and the quality of an organization's products. A great number of studies prove the influence of developing quality and service on a better organizational performance. Photopoulos et al in 2009 confirmed that total quality management is a critical factor for improving performance. According to Photopoulos et al in 2009, leadership, teamwork, customer centration, educating and managing the quality suppliers are all key success factors in employing total quality management. Photopoulos et al (2009) stated that these CFSs are influential in quality improvement, profitability, customer satisfaction,

market share, decreasing faults and errors, and price reduction (Tehrani, 1391).

1.4 Research Background

Kamath et al. [10], in a study with the subject "Simulating total quality management and the effect of total maintenance management on production performance: case study in offset printing machines, tried to examine and simulate the relation between total quality management and total maintenance management in offset printing machines in India. The results have shown that the better an organization can employ total quality management, the more the role of total maintenance management is highlighted and there is a more meaningful connection between these two in a way that this connection led to optimal production performance in offset printing machines.

Emad and Wayft (2015), in their study with the subject "Employing total quality management in a hospital", examined the connection between total quality management and the performance of a hospital's staff in the United Arab Emirates. The results of this study show that 70 percent of total quality management plans worked out well in the hospital and there is a significant connection between aspects of total quality management and performance improvement of the hospital.

Ketin Dareh et al (2015), in a study with the subject "Effects of total quality management on business: an application software company in Kütahya, Turkey", tried to examine separately each aspect of total quality management on the business performance of an application software company in Kütahya, Turkey [11-13]. In this study, the aspects of total quality management include strategic planning, teamwork concentration, using the experiences of successful organizations, leadership, and education. The study results show that there are a significant connection and correlation between aspects related to education and leadership and business performance [14-16].

Global competition has increased significantly in the past decades. According to Ankchi Youjina (2010) quoted by Arumugam, V. Ch., Mojtahedzadeh [17], product quality is defined by customers, and that is the reason why customers are the only factor raising competition among organizations. Therefore, this subject has given rise to some strategies focused on quality. Today, winning the competition means acquiring

a good knowledge of customers' needs and wants. In fact, customers have changed from the endpoint to the starting-point in a successful business. Ankchi Youjina (2010) stated that organizations need to create new management based on total quality management in order to survive.

Demirbag, M., Tatoglu, E., Tekinkus, M., and Zaim [18] in a quote by Arumugam, V.Ch., Mojtahedzadeh stated that quality management is one of the most crucial factors in every organization. Successful companies have experienced the fact that quality identified by customers can have a profound impact on business [19,17]. Besides, most competitive companies may improve their quality standards on a regular basis. If a company neglects quality, the customer is left dissatisfied. This leads to the loss of customers and providing the opportunity for rivals to reap the benefits accrued from market needs. Consequently, allocating importance to customer needs will prioritize quality. Reid, R.D., and Sanders stated in [19], quality means fulfilling and overfulfilling customers' needs by any person in an organization by an integrated effort. This integrated effort is called total quality management.

2. RESEARCH METHODS

This study examines the impact of total quality management on entrepreneurial organizations (Dey and Karafarin insurance companies), and operating questionnaires and polls from the staff of these companies the study presents the results without censorship. This study is practical in terms of purpose and descriptive-survey in terms of method. For collecting the necessary information to compose the research background and its theoretical principles, the library method has been used.

Table 1. Research method

Category type	Current research's position
In terms of purpose	Practical
In terms of data type	Survey
In terms of time	sectional

2.1 Research Population

The research population of this study is 321 employees of Karafarin and Dey insurance companies. According to the population size and Morgan table, the sample size is 140 employees.

The samples were taken randomly and simply of the employees.

2.2 Spatial Territory

The spatial territory of this study is the employees of Karafarin and Dey insurance companies.

2.3 Time Territory

The space territory of this research is in 1399.

2.4 Total Quality Management Questionnaire

This questionnaire was designed and written by Kaplan and Norton (2001). It consists of four aspects: finance, customer, internal processes, educational processes, and growth. It includes 17 answer items, and each item is arranged in the form of a 5-point Likert scale. The following table explains the item distribution of the questionnaire.

2.5 Organization Performance Questionnaire

The total quality management questionnaire was designed and recognized by Wang et al (2012). This questionnaire includes 25 answer items based on a 5-point Likert scale. It examines seven aspects: customer satisfaction, internal cooperation, constant improvement, leadership, staff's performance, education, and process management. This questionnaire was credited by Liaghatvarz (1393).

In this study, both descriptive statistical methods and inferential statistical methods were used to analyze the data obtained from the samples.

Descriptive statistics and its indicators such as centrality measures (mean, mode, mid-range) and dispersion indicators (standard deviation and variance) were applied to examine the characteristics of respondents. For describing the data, descriptive statistical methods and indicators such were used such as frequency, mean, and standard variation. For analyzing the data, the Step-by-step linear regression method, the coefficient of determination, and Pearson correlation coefficient were used. Spss statistics software was used to conduct these analyses.

3. RESULTS AND DISCUSSION

3.1 Descriptive Statistic

Out of 238 participants in this study, 157 people were male and the rest were female.

According to the Table 3, the age group of most of the sample population is (42/9 percent) between 25 to 30, and after that, the age groups of 30 to 40, younger than 25, and over 40 are respectively 28/6, 19/3, 9/2 percent.

According to the Table 4, the educational degree of most of the sample population (39/5) was a bachelor's degree and after that masters, doctoral, associate, high school and pre-high school diploma were respectively 28/3, 18/3, 13/9.

3.2 Inferential Statistics

3.2.1 The main hypothesis

Total quality management has an impact on the performance of entrepreneurial organizations.

In the table below, the significance of the regression is calculated by F-test.

Table 2. Distribution of population by gender

Gender	Distribution	Percent
Male	78	66/0
Female	62	34/0
All	140	100/0

Table 3. Distribution of population by age

Age group	Distribution	Percent
Less than 25	26	19/3
25 to 30	73	42/9
30 to 40	31	28/6
Over 40	10	9/2
Total	140	100/0

Table 4. Distribution of population by educational degree

Educational degree	Distribution	Percent
High school and pre-high school diploma	0	0/0
Associate Degree	13	13/9
Bachelor's degree	70	39/5
Master's degree	34	28/3
Doctoral degree	23	18/3
Total	140	100/0

Table 5. Analyzing variance for the significance of the performance model of organization in total quality management

Model	sum of squares	Degree of freedom	The average sum of squares	F statistic	P amount
Regression	5/266	1	5/266	32/940	0/000
Residual	40/923	138	0/160		
Total	46/189	139			

Considering that in Table 5, the P-amount is less than a significant level 0/05, therefore it indicates the significance of the regression model of the organization's performance in total quality management.

In Table 6, regression coefficients (standard and non-standard) and the P amount indicate that total quality management can predict the performance of entrepreneurial organizations. In other words, total quality management has an effect on the performance of entrepreneurial organizations ($p < 0/05$). Therefore, the main hypothesis of the study is proved.

3.2.2 The first hypothesis

Total quality management has an impact on the financial performance of entrepreneurial organizations.

In the below table, the significance of the regression is calculated by F-test.

Considering that in Table 7, the P-amount is less than a significant level 0/05, therefore it indicates the significance of the regression model of the organization's financial performance in total quality management.

In Table 8, regression coefficients (standard and non-standard) and the P amount indicate that

total quality management can predict the financial performance of entrepreneurial organizations. . In other words, total quality management has an effect on the financial performance of entrepreneurial organizations ($p < 0/05$). Therefore, the first hypothesis of the study is proved.

3.2.3 The second hypothesis

Total quality management has an impact on the customers of entrepreneurial organizations.

In the table below, the significance of the regression is calculated by F-test.

Considering that in Table 9, the P-amount is less than a significant level 0/05, therefore it indicates the significance of the regression model of the organization's customers in total quality management.

In Table 10, regression coefficients (standard and non-standard) and the P amount indicate that total quality management can predict customers of entrepreneurial organizations. In other words, total quality management has an effect on customers of entrepreneurial organizations ($p < 0/05$). Therefore, the second hypothesis of the study is proved.

Table 6. Simple regression to predict an organization's performance by total quality management

Predictor variable	Criterion variable	B	SE	Beta	t	P amount
total quality management	organization's performance	0/289	0/050	0/338	5/739	0/000

Table 7. Analyzing variance for the significance of financial performance model of organization in total quality management

Model	sum of squares	Degree of freedom	The average sum of squares	F statistic	P amount
Regression	18/399	1	18/399	169/487	0/000
Residual	27/790	138	0/109		
Total	46/189	139			

Table 8. The results of simple regression to predict an organization's financial performance by total quality management

Predictor variable	Criterion variable	B	SE	Beta	t	P amount
total quality management	Financial performance	0/866	0/067	0/631	13/019	0/000

*B: Non-standard regression coefficient
Beta: standard regression coefficient*

3.2.4 The third hypothesis

Total quality management has an impact on the internal processes of entrepreneurial organizations.

In the table below, the significance of the regression is calculated by F-test.

Considering that in Table 10, the P-amount is less than a significant level 0/05, therefore it indicates the significance of the regression model of the organization's internal process in total quality management.

In Table 12, regression coefficients (standard and non-standard) and the P amount indicate that total quality management can internal processes of entrepreneurial organizations. In other words, total quality management has an effect on internal processes of entrepreneurial organizations ($p < 0/05$). Therefore, the third hypothesis of the study is proved.

3.2.5 The fourth hypothesis

Total quality management has an impact on the education and growth of entrepreneurial organizations.

In the table below, the significance of the regression is calculated by F-test.

Considering that in Table 13, the P-amount is less than a significant level 0/05, therefore it indicates the significance of the regression model of the organization's education and growth in total quality management.

In Table 14, regression coefficients (standard and non-standard) and the P amount indicate that total quality management can predict the education and growth of entrepreneurial organizations. In other words, total quality management has an effect on the education and growth of entrepreneurial organizations ($p < 0/05$). Therefore, the fourth hypothesis of the study is proved.

Table 9. Analyzing variance for the significance of customers' model of organization in total quality management

Model	sum of squares	Degree of freedom	The average sum of squares	F statistic	P amount
Regression	6/342	1	6/342	40/748	0/000
Residual	39/846	138	0/156		
Total	46/189	139			

Table 10. The results of simple regression to predict an organization's customers by total quality management

Predictor variable	Criterion variable	B	SE	Beta	t	P amount
total quality management	Customers	0/278	0/044	0/371	6/383	0/000

Table 11. Analyzing variance for the significance of the internal process model of organization in total quality management

Model	sum of squares	Degree of freedom	The average sum of squares	F statistic	P amount
Regression	7/961	1	7/961	53/313	0/000
Residual	38/228	138	0/149		
Total	46/189	139			

Table 12. The results of simple regression to predict an organization's internal process by total quality management

Predictor variable	Criterion variable	B	SE	Beta	t	P amount
Total quality management	Customers	0/313	0/043	0/415	7/302	0/000

Table 13. Analyzing variance for the significance of education and growth model of organization in total quality management

Model	sum of squares	Degree of freedom	The average sum of squares	F statistic	P amount
Regression	3/941	1	3/941	23/880	0/000
Residual	42/248	138	0/165		
Total	46/189	139			

Table 14. Simple regression to predict an organization's education and growth by total quality management

Predictor variable	Criterion variable	B	SE	Beta	t	P amount
total quality management	Customers	0/214	0/044	0/292	4/887	0/000

4. CONCLUSION

By employing total quality management, organizations' performance is certain to improve. A great number of studies indicate the positive connection between employing total quality management and performance. There are various examples of companies acquiring the benefits of employing total quality management such as 23 percent of inventory reduction in 3 years, changing orders to two sections, reducing delivery time from 20 to 4 or 5 days, saving 56 million in 4 years by quality teams, decreasing the recurrence of customer claim to 40 percent, reducing customer service response time to 44 percent, reducing lost Time Injury rate to 46 percent, reducing quality cost from 12 to 9 percent, increasing punctual delivery from 75 to 99 percent, reducing customer complaints to 78 percent, saving 12 million in suggestion system in a year, 91 percent of employees stating their pride about working in the company, and an increase in the positive response for checking on the staff from 76 to 83 percent. Performance evaluation is a key factor for efficient

management. The reason can lie in the fact that it is impossible to develop something without evaluating it. Therefore, promoting organizational performance requires identifying and evaluating the impacts of total quality management techniques on it. According to the researches conducted like the one conducted by Goudarzvand and Chegini in 1386 and other studies, it can be concluded that by employing total quality management in entrepreneurial organizations and pragmatic management some goals such as customer satisfaction and profitability can be accomplished, which are in line with the results of Ahmad Rabee [8], Youhang Hang et al (2011), Waldman (1994), Kar and Pousami and Gan Jintan (2006) and Koomar, Choison, Groubibus and Koomar [20], Malik et al (2010), Doubi and Sing (2013), and Kourdour and Gouni (2010). The result achieved from each hypothesis reveals that the first hypothesis, total quality management has an impact on the financial performance of entrepreneurial organizations, is in line with the results of studies by Nasrollahi (1396), Ahmadpour (1394), Sharifi (1395), Meshki

(1395), Deylami (1393), Koomar, Choison, Groubibus and Koomar [20], Koomar et al. [20], and Fullerton et al (2003). The second hypothesis, total quality management has an impact on the customers of entrepreneurial organizations, is in line with the research results by Rahmani (1393), Heidarnia (1385), Sarafrazi (1387), Khanifar (1385), Ankchi Youjina (2010), Reid, R.D., and Sanders [19], Saizarbitouria [21], Fotoplus et al (2009), and Dass et al (2000). The results of the third hypothesis, total quality management has an impact on internal processes of entrepreneurial organizations, are in line with the results of studies by Hamidi Zadeh (1389), Adam and Banister (2001), Wand Wide and Bousili (2002), and Karter and Narasimahan (1994). The fourth hypothesis, total quality management has an impact on the education and growth of entrepreneurial organizations, is in line with the results of the research by Salamat (1399).

COMPETING INTERESTS

Author has declared that no competing interests exist.

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