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An investigation on how TQM influences employee performance: A case study of banking industry

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A B S T R A C T

This paper presents an empirical investigation to study the relationship between employee performance and TQM. The proposed study of this paper designs two questionnaires for TQM and performance measurement and distributes them among some employees who worked for one of Iranian banks in city of Semnan, Iran. The result of Kolmogorov–Smirnov test confirms that all data are normally distributed and the study uses Pearson correlation to investigate the relationship between various components of the survey. The result of the implementation of Pearson correlation ratio indicates that there was a positive and meaningful relationship between employee performance and TQM components (r=4.6223, P-value=0.000). In addition, there are some positive and meaningful relationships between TQM components and employee performance. The highest correlation belongs to relationship between employee performance and feedback (r=4.6223, P-value=0.000) followed by training and development (r = 0.441, P-value = 0.000) and communication (r = 4.2861, P-value = 0.000).

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1. Introduction

Measuring the relative performance of organization plays essential role on making continuous improvement. Employee performance is one of the most important components of measuring the status of organizations. Total quality management is one of the well-established methods for making continuous improvement on firms' performance. There are different studies associated with employee performance and TQM. According to Ugboro and Obeng (2000), top management leadership and employee empowerment are two TQM principles since they are associated with customer satisfaction. They surveyed organizations adopted TQM to determine the relationship between top management leadership, employees' empowerment, job satisfaction, and customers' satisfaction. The results disclosed positive correlation between top management leadership, employee empowerment, job satisfaction, and customer satisfaction. Top management leadership and commitment to the TQM

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objective of customer satisfaction by creating an organizational climate that emphasizes TQM and customer satisfaction also facilitated employee empowerment and improved levels of job satisfaction. They also detected effective strategies for reaching employee empowerment and job satisfaction, together with top management leadership roles in a TQM environment.

Ahmad et al. (2012) considered the relationship between TQM practices and business performance with mediators of Statistical Process Control (SPC), Lean Production (LP) and Total Productive Maintenance (TPM). They identified the relationships among TQM, TPM, SPC and Lean Production practices as a conceptual model. They developed a conceptual model, which would help the academicians and industry players reach better understanding on the relationship between the practices. In addition, business performance improvement and the relationships have been validated using structural equation modeling (SEM) techniques. Soltani et al. (2003) tried to highlight the key generic criteria of a quality-driven HR performance evaluation system through a questionnaire survey of Scottish-based quality-driven organizations. They mapped the most important issues in HR performance evaluation in a quality management context. In addition, the investigation analyzed the degree of effectiveness of the currently conducted HR performance evaluation in detecting training requirements, employee motivation, improvement in future performance and overall performance of the firm.

Sadikoglu and Zehir (2010) investigated the effects of innovation and employee performance on the relationship between TQM practices and firm performance through an empirical investigation among Turkish firms. Prajogo and Sohal (2004) performed an empirical investigation on the multidimensionality of TQM practices in determining quality and innovation performance. The primary proposition investigated in this study was that TQM embodied two various models of practices, mechanistic and organic, with each indicating a different impact in the association with two different kinds of performance, quality and innovation. They used some empirical data gathered from Australian firms and reported some evidences on the proposition in pairing the mechanistic elements of TQM with quality performance and the organic elements with innovation performance. However, the study failed to support the proposition that firms require to configure TQM practices in various ways for reaching various type of performance. Mar Fuentes-Fuentes et al. (2004) investigated the impact of environmental characteristics on TQM principles and organizational performance.

Coyle-Shapiro and Morrow (2003) investigated the role of individual differences in employee adoption of TQM orientation. They reported that increased consideration of individual differences in order to apply TQM and other forms of organizational change more effectively. Prajogo and Sohal (2006) investigated the integration of TQM and technology/R&D management in determining quality and innovation performance. They contributed to the understanding of the co-alignment between TQM and technology management along with R&D management by bridging the gap between the two areas addressed in a separate fashion. They also examined the effect of the integration between TQM and technology/R&D on quality and innovation performance considered as the primary sources of a competitive advantage. Rahman and Bullock (2005) argued that it could be more appropriate to study the direct effect of soft TQM on the diffusion of hard TQM, and then evaluated the direct effect of hard TQM on performance. Analysis of 261 Australian manufacturing firms disclosed substantial positive relationships between soft TQM and hard TQM elements. They also reported that soft TQM had an indirect impact on performance through its effect on hard TQM.

2. The proposed study

This paper presents an empirical investigation to study the impact of applying total quality management (TQM) in banking industry to improve employee performance. The proposed study of this paper considers the effects of seven factors including paying attention to customer, continuous improvement, team work, top management commitment, education and development, communication and measurement and feedback. Fig. 1 demonstrates the structure of the proposed study of this paper,

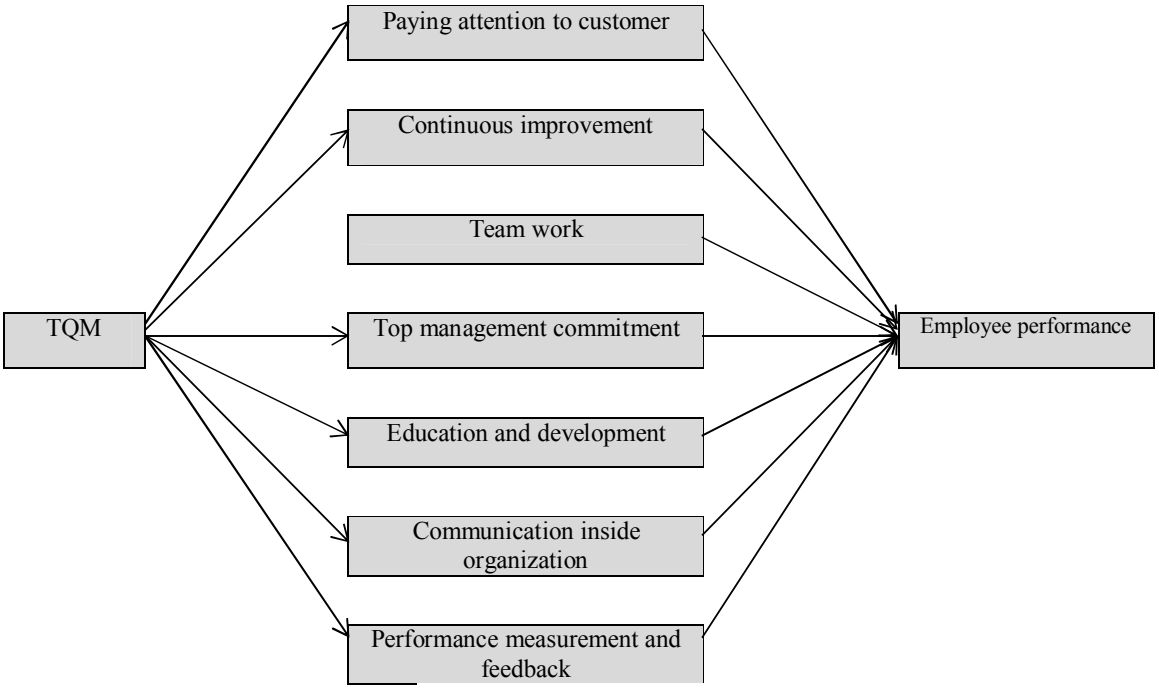

Fig. 1. The proposed study

Based on the information of Fig. 1, the following hypothesis is considered.

Main hypothesis: There is a meaningful relationship between applying TQM and employee performance.

The main hypothesis of this survey consists of the following seven sub-hypotheses,

1. There is a meaningful relationship between paying more attention to customer and employee performance.
2. There is a meaningful relationship between continuous improvement and employee performance.
3. There is a meaningful relationship between team work and employee performance.
4. There is a meaningful relationship between top management commitment and employee performance.
5. There is a meaningful relationship between education and development and employee performance.
6. There is a meaningful relationship between commitment inside organization and employee performance.
7. There is a meaningful relationship between performance measurement and feedback and employee performance.

The proposed study is performed in one of the biggest Iranian banks named Bank Mellat in city of Semnan, Iran. The sample size is calculated as follows,

$$n = \frac{N \times z_{\alpha/2}^2 \times p \times q}{\varepsilon^2 \times (N-1) + z_{\alpha/2}^2 \times p \times q}, \quad (1)$$

where N is the population size, $p = 1 - q$ represents the yes/no categories, $z_{\alpha/2}$ is CDF of normal distribution and finally ε is the error term. Since we have $p = 0.5, z_{\alpha/2} = 1.96$ and N=1300, the number of sample size is calculated as n=110. There are two questionnaires used for measuring TQM and measuing employee performance with 35 and 20 questions, respectively. All questions are designed in Likert scale. Table 1 demonstrates the summary of some basic statistics associated with the proposed study of this paper.

Table 1
The summary of some basic statistics

Variable	Number	Min	Max	Mean	Std. Dev.
Paying more attention to customer	110	8	45	18.20	4.5871
Continuous improvement	110	8	25	18.836	4.0172
Team work and job involvement	110	6	25	18.60	4.2861
Top management performance	110	5	25	18.80	4.3679
Education and development	110	5	25	18.33	4.4149
Communication within organization	110	5	25	18.77	4.4384
Performance measurement and feedback	110	4	30	17.97	4.6223
Employee performance	110	26	100	69.38	18.3413

Next, we present details of our findings on testing various hypotheses of the survey.

3. The results

In this section, we present details of our findings on testing the main hypothesis as well as 7 sub-hypotheses of the survey. We have implemented Kolmogorov–Smirnov test to make sure that all data were normally distributed and the results have confirmed that all components of the survey are normally distributed. Therefore, we use Pearson correlation test to verify various hypotheses.

3.1. Main hypothesis

The main hypothesis of this survey investigates the relationship between TQM implementation and employee performance measurement. Table 2 demonstrates the results of Pearson on testing the main hypothesis of the survey.

Table 2
The summary of Pearson correlation on testing the main hypothesis

Variable	Number	Median	Standard	P-value	R	Result
TQM	110	129.5	25.75			
Employee performance	110	69.38	18.34	0.418	0.000	Confirmed

According to the results of Table 2, there is a positive and meaningful relationship between executing TQM and employee performance. Therefore, we confirm the main hypothesis of the survey.

3.2. Testing sub-hypotheses

There are seven sub-hypotheses associated with the proposed study of this paper and Table 3 shows details of Pearson correlation ratio on testing each item.

Table 3
The summary of testing sub-hypotheses on relationship between employee performance and TQM

Variable	Number	Median	Standard deviation	P-value	R	Result
Paying attention to customers	110	18.20	4.5871			
Employee performance	110	69.38	18.3413	0.220	0.02	Confirmed
Continuous improvement	110	18.8364	4.01723			
Employee performance	110	69.38	18.3413	0.328	0.02	Confirmed
Team work	110	18.60	4.2861			
Employee performance	110	69.38	18.3413	0.287	0.002	Confirmed
Top management performance	110	18.80	4.3679			
Employee performance	110	69.38	18.3413	0.346	0.000	Confirmed
Training and development	110	18.33	4.4149			
Employee performance	110	69.38	18.3413	0.441	0.000	Confirmed
Communication	110	18.77	4.2861			
Employee performance	110	69.38	18.3413	0.403	0.000	Confirmed
Feedback	110	17.97	4.6223			
Employee performance	110	69.38	18.3413	0.422	0.000	Confirmed

As we can observe from the results of Table 3, there are some positive and meaningful relationships between TQM components and employee performance. The highest correlation belongs to relationship between employee performance and feedback (r=4.6223, P-value=0.000) followed by training and development (r = 0.441, P-value = 0.000) and communication (r = 4.2861, P-value = 0.000).

4. Conclusion

In this paper, we have presented an empirical investigation to study the relationship between employee performance and TQM. The proposed study of this paper has designed two questionnaires for TQM and performance measurement and distributed them among some employees who worked for banking system in city of Semnan, Iran. The results of the implementation of Pearson correlation ratio have indicated that there were some positive and meaningful relationship between employee performance and TQM components. The highest correlation belongs to relationship between employee performance and feedback (r=4.6223, P-value=0.000) followed by training and development (r = 0.441, P-value = 0.000) and communication (r = 4.2861, P-value = 0.000).

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