Identify and ranking the factors that influence establishment of total quality management system in Payame Noor University of Lordegan

Farhad Farhadi
MA Student, Department of Management, Najafabad Branch, Islamic Azad University, Esfahan, Iran
samane Karimi Ghartemani
MA Student, Department of Management, Najafabad Branch, Islamic Azad University, Esfahan, Iran
Roghieh RezaeeGigloo
MA Student, Department of Management, Bilesavar Branch, Islamic Azad University, Esfahan, Iran
Jafar Raisi Wastegany
MA Student, Department of Management, Najafabad Branch, Islamic Azad University, Esfahan, Iran

Abstract-Total quality management (TQM) is one of the most common business terms applied to promote quality improvement and quality is a crucial factor for moving with global changes, but no enough attention has been paid to improving quality methods such as TQM in Iran. The goal of this research is identify and ranking factors that influence the establishment of total quality management system in Payame Noor University of Lordegan. This research is a descriptive-measuring research. Statistical population involves 80 persons of Payame Noor University of Lordegans workforces and the sampling is conducted using Morgan table is equal 84 persons. For gathering data a researcher-made questionnaire was used that its validity confirmed by scholars and its reliability by Cronbach's alpha coefficient is 0.804. Five components was considered for establishment of total quality management (TQM) system in Payame Noor University of Lordegan and four of them was proved with T test that are committed management, participation, training and customer satisfaction but Continuous Improvement was not improved, the means of components was discovered by Friedman test and the best one with this test is customer satisfaction.

Key words: quality, quality management, Total Quality Management (TQM)

1. Introduction:

In today's world, quality considered as the most prominent features causing customer satisfaction and attracts customers. Quality improvement is an imperative and priority in lots of sectors such as education, industry, production, manufacturing and universities. One of the fundamental issues according to the quality of education in Iranian universities is improving relationship with students, with considering the importance of Total Quality Management in student satisfaction, reduce costs and enhance teaching quality, the importance of such researches is feeling in universities of Iran but in some situation this system has failed and it cause from lake of studies on feasibility of its implementation while before running any kind of system, especially if it was from a foreign culture, the feasibility of its establishment should be checked so in this study we identify and ranking the factors that influence establishment of total quality management system in Payame Noor University of Lordegan. This small step can make a foundation for the next stage of establish a total quality management system in this university.
For implementation of Total Quality Management in Payame Noor University of Lordegan, present status of management system in this university is assessing. Then with this result we identify and ranking the factors that influence establishment of TQM system in this university.

2. Total Quality Management (TQM):

Different definitions of TQM have been presented over years. Kumar (2009) states “TQM is defined as a holistic management approach that aims to achieve organizational objectives and fulfill customer needs by integrating every organizational function”. Arzeshmand (2012) argue that TQM combines the clarity of objectives and the revolutionary procedure together and contains all working aspects, including classification of the customer’s needs and evaluation of their satisfaction level. Karahan et al. (2012) argue that “TQM is a model in which rotating the axis of three main themes: customer, process and human”. TQM is a philosophy integrating humanistic principles as well as scientific methodologies for the purpose of continuous improvement as a management philosophy and is based on a set of theoretical principles that seek to mobilize organizational resources to better stakeholder requirements (Guillen & Gonzales, 2001). Seyed Saleki et al state TQM is a management policy, which becomes a tool for utilization and exploitation of all human, finance and technology resources in educational institutions. Roopchand (1997) with a citation analysis of higher education in American universities, introduced universities as one of the most important and vital activity units in America and with using interviews, improved that the center continuous improvement was from TQM implementation. From the attitude of faculty and staff, these factors can be barriers for implementing of TQM: no committees in some communities, lack of faculty support in implementing TQM, lack of holistic view of TQM, lack of long-term planning about the quality. In this article five components is considered for establishment of total quality management (TQM) system in universities that we introduce these dimensions in below.

3. Dimensions of TQM

3.1. Management Commitment:

Management’s role is a crucial factor in the implementation of a quality program, these factor is called “Commitment” and is reflected in the policies and culture of the organizations adopting the quality concepts (Monica & Ravinder, 1998). Leadership in an organization can be specified as the ability of a role player to influence a team of employees to follow his or her instructions or missions in order to achieve the goals or objectives that have been preset by the company (Ooi & Cheah, 2010). Leadership in TQM in organizations is capable of great accountability in management. Leaders of TQM are those, who by especial guidance and appropriate supervision of subordinates, make sure that, TQM guidelines, philosophies, values and goals are transferred and delivered correctly (Seyed Saleki and colleagues, 2012).
3.2. Employee involvement (Teamwork):

Every organization needs teamwork and it can achieve goals because every organization without teamwork will fail. There is so many benefits for working in a team. In implementation of TQM in higher education teamwork is one of the most important factor so responsibilities and also roles of team members should be well defined (Xyrichis A, Ream E, 2008). In a successful organization, teams must be made up of people who have an interest in these processes, if they understand their responsibilities and roles so they make recommendations on how to change the process and it can be useful because their suggestions lead to a great improvement.

3.3. Customer satisfaction:

Customer satisfaction is an underlying principle of the TQM concept. It can be found in most all the discussions that address quality in general such as the Malcolm, Baldrige and Award (Powell, 1995). Customer focus can be defined as the degree to which a company embarks to satisfy the customers’ needs and expectations in a continuous manner (Ooi & Cheah, 2010).

3.4. Continual improvement:

According to this principle organization management should be such a way that creates required incentives in the personnel so that organization moves toward continual improvement (Doherty, 1990).

3.5. Training:

Every organization needs training for improving knowledge and skills. Undoubtedly, Training is a vital element for any implementation of TQM in higher education institutions. The first level that has to define training is executive level in the organization. The level of training is not same. For instance team leaders and facilitators should have more training that the other people. (Seyed Saleki and colleagues, 2012)
4. Research Methodology

This survey is an applied survey and from the Research Methodology, is based on a descriptive-measuring method. Independent variables of this research are: management committed, customer satisfaction, continual improvement, training and employee involvement and dependent variable is establishment of TQM. Statistical population of this research involves 80 persons of managements, clerks and masters of this university. Sampling method of this research is a stochastic sampling, the sampling was conducted using Morgan table is equal 84 persons. The tool used for data collection is a researcher-made questionnaire that its validity confirmed by scholars and reliability by Cronbach's alpha coefficient of 0.804. The methods used are the confirmatory factor analysis: T test and Friedman test.

5. Hypothesis:

H1: management committed support TQM implementation in Payame Noor University of Lordegan.
H2: participation and cooperation of the staff and students of Lordegan Payame Noor University support TQM implementation.
H3: staff training of Lordegan Payame Noor University support TQM implementation.
H4: emphasize on customer satisfaction support TQM implementation in Payame Noor University of Lordegan.
H5: continuous improvement of service quality and training support TQM implementation in Payame Noor University of Lordegan.
6. Findings

H1: management committed support TQM implementation in Payame Noor University of Lordegan.
This hypothesis was testes by student's t-test and results are reflected in Table 1.

\[
\begin{align*}
H_0 & : \mu = 3 \\
H_1 & : \mu > 3
\end{align*}
\]

<table>
<thead>
<tr>
<th>Factor</th>
<th>Confidence interval</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t</th>
<th>Sig</th>
<th>Test result</th>
</tr>
</thead>
<tbody>
<tr>
<td>committed management</td>
<td>Lower limit</td>
<td>Upper limit</td>
<td>3.3</td>
<td>1.2</td>
<td>1.952</td>
<td>0.045</td>
</tr>
<tr>
<td></td>
<td>-0.007</td>
<td>0.62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This hypothesis is in the domain of H1 because 1.952 is larger than 1.645 so H0 is rejected and H1 is accepted. It means that the scientific and practical management commitment in Lordegan Payame Noor University is provided for TQM implementation. Similar methods were used to examine other hypotheses. The results of this work are listed below:

H2: participation and cooperation of the staff and students of Lordegan Payame Noor University support TQM implementation.

\[
\begin{align*}
H_0 & : \mu = 3 \\
H_1 & : \mu > 3
\end{align*}
\]

<table>
<thead>
<tr>
<th>Factor</th>
<th>Confidence interval</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t</th>
<th>Sig</th>
<th>Test result</th>
</tr>
</thead>
<tbody>
<tr>
<td>employee involvement</td>
<td>Lower limit</td>
<td>Upper limit</td>
<td>3.33</td>
<td>1.26</td>
<td>2.1</td>
<td>0.039</td>
</tr>
<tr>
<td></td>
<td>0.017</td>
<td>0.66</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This hypothesis is in the domain of H1 because 2.1 is larger than 1.645 so H0 is rejected. And H1 is accepted. It means that participation and cooperation of the staff and students in Lordegan Payame Noor University is provided for TQM implementation.

H3: staff training of Lordegan Payame Noor University support TQM implementation.
H₀ : µ=3
H₁ : µ> 3

**Table 3. The results of testing hypothesis 3**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Confidence interval</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t</th>
<th>Sig</th>
<th>Test result</th>
</tr>
</thead>
<tbody>
<tr>
<td>committed management</td>
<td>Lower limit</td>
<td>Upper limit</td>
<td>3.66</td>
<td>1.2</td>
<td>4.33</td>
<td>0.000</td>
</tr>
<tr>
<td></td>
<td>0.356</td>
<td>0.966</td>
<td></td>
<td></td>
<td></td>
<td>H₁ is accepted</td>
</tr>
</tbody>
</table>

This hypothesis is in the domain of H₁ because 4.33 is larger than 1.645 so H₀ is rejected. And H₁ is accepted. It means that staff training of Lordegan Payame Noor University provides TQM implementation.

H₄: emphasize on customer satisfaction support TQM implementation in Payame Noor University of Lordegan.

H₀ : µ=3
H₁ : µ> 3

**Table 4. The results of testing hypothesis 4**

<table>
<thead>
<tr>
<th>Factor</th>
<th>Confidence interval</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t</th>
<th>Sig</th>
<th>Test result</th>
</tr>
</thead>
<tbody>
<tr>
<td>committed management</td>
<td>Lower limit</td>
<td>Upper limit</td>
<td>3.51</td>
<td>1.20</td>
<td>3.18</td>
<td>0.002</td>
</tr>
<tr>
<td></td>
<td>0.198</td>
<td>0.86</td>
<td></td>
<td></td>
<td></td>
<td>H₁ is accepted</td>
</tr>
</tbody>
</table>

This hypothesis is in the domain of H₁ because 3.18 is larger than 1.645 so H₀ is rejected and H₁ is accepted. It means that customer satisfaction of Lordegan Payame Noor University provides TQM implementation.

H₅: continuous improvement of service quality and training support TQM implementation in Payame Noor University of Lordegan.

H₀ : µ=3
H₁ : µ> 3
### Table 5. The results of testing hypothesis 5

<table>
<thead>
<tr>
<th>Factor</th>
<th>Confidence interval</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>t</th>
<th>Sig</th>
<th>Test result</th>
</tr>
</thead>
<tbody>
<tr>
<td>committed management</td>
<td>Lower limit</td>
<td>Upper limit</td>
<td>2.83</td>
<td>1.41</td>
<td>-8.97</td>
<td>0.373</td>
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<tr>
<td></td>
<td>-0.52</td>
<td>0.198</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

This hypothesis is in the domain of H1 because -0.897 is larger than 1.645 so H0 is rejected and H1 is accepted. It means that service quality and training of Lordegan Payame Noor University provides TQM implementation.

### 7. Ranking factors that influence the implementation of Total Quality Management

Table 6 is presenting the ranks of every one of the factors that we analyze in this paper, for ranking them we use mean of each factor based on Friedman test.

<table>
<thead>
<tr>
<th>Factors</th>
<th>Ranking Mean</th>
<th>Factor ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>committed management</td>
<td>2.27</td>
<td>4</td>
</tr>
<tr>
<td>employee involvement</td>
<td>2.32</td>
<td>3</td>
</tr>
<tr>
<td>Training</td>
<td>2.69</td>
<td>2</td>
</tr>
<tr>
<td>customer satisfaction</td>
<td>2.71</td>
<td>1</td>
</tr>
</tbody>
</table>

This ranking show that the highest score is dedicated to customer satisfaction by 2.71 ranking mean, other factors ranking include the training component 2.69, the participation component 2.32 and management commitment get 2.27 ranking mean. Figure 2 show factors ranking on TQM implementation process.
8. Conclusions

The main concern of this research is how to apply TQM in Lordegan Payame Noor University to improve the quality of relationship with students and get a better relationship with them. Five factors are considered for implementation of TQM in this university and according to the data analysis based on T test, committed management, customer satisfaction, training and employee involvement are supporting establishment of TQM, but the continual improvement component was not accepted for the establishment of TQM. according to the Friedman test the highest grad is dedicated to customer satisfaction by 2.71 score and other ranking factors include the training component 2.69 score, the participation component 2.32 score and management commitment get 2.27 scores. In overall by using these results, we can say that the establishment of TQM in Payame Noor University of Lordegan is possible in order to eliminate weaknesses such as continuous quality improvement in services and education and management commitment and employee participation.

9. Resources


Doherty GD, (1990), Developing Quality System in Education Alaska: Routledge, 231-231


