Investigating the Affecting Factors on Total Quality Management Case Study: National Olympic Academy

Mohsen Loghmani,
The Ph.D candidate of Bu-Ali Sina University, Hamedan, Iran

Reza Dadashpour
M. A student in Shagagh University, Tonekabon, Mazandaran, Iran

Abstract
The purpose of writing the current paper is to identify the driving affecting factors on total quality management. In the research which is applicable from goal view and descriptive from data collection view, a questionnaire was considered for data gathering which was distributed among statistical sample (93 employees of National Olympic Academy) after proving its validity and reliability. The results of applying Chi Square and Friedman test illustrated the positive effect of Attending to customers, Continues improvement, Team work, Training and development, Top management commitment, Communications and Measurement and feedback on total quality management. Also the results of applying Binomial test show that all variables apart from team work were posed in favorable levels. Finally some suggestions were represented for managers to improve total quality management in their organization in terms of its defined dimensions.

Keywords: Total quality management, continuous improvement

Introduction
In today’s highly competitive market with escalating demands of consumers for getting better products and services (Thiagaragan et al., 2001), survival of companies in the ever-expanding marketplace (Zakuan et al., 2010), economic success of companies (Curkovic et al., 2000), improvement in productivity, customer satisfaction, profitability, and innovativeness (Sadikoglu and Zehir, 2010), changing organizational culture (Prajogo and McDermott, 2005), and globalization of world trade (Fotopoulos and Psomas, 2010), the emergence of quality plays a vital role and have become a top priority for many companies worldwide in order to achieve the above stated objectives and gain competitive edge. The importance of quality for company’s performance in several terms and success in marketplace is widely accepted in business literature and practice (Kumar et al., 2009). In an attempt to improve quality, numerous approaches to management of quality and continuous improvement have been pursued, most notably and a recommended approach is the concept of total quality management (TQM). Many companies claimed substantial benefits of implementing TQM in terms of financial results, operating performance, customer satisfaction, and employee satisfaction (Brah et al., 2002; Yang, 2006; Kumar et al., 2009; Fuentes et al., 2006; Sila, 2007). It is a holistic management approach (Hafeez et al., 2006) that seeks managing quality, it requires development of quality strategy (Kanji and Wallace, 2000) and a framework for its implementation (Chin and Pun, 2002). It focuses on meeting customer needs and company’s objectives (Kumar et al., 2009). TQM principles and practices have been embraced by many quality managers and practitioners from different sectors and have earned the attention of many researchers from diverse areas. They come out with many success stories related to TQM practices (Sila, 2007; Karia and Asaari, 2006; Lagrosen, 2003; Prajogo and McDermott, 2005; Yoo et al., 2006). While many studies have shown that almost two-third of the TQM implementation program failed to achieve any result (David and Strang, 2006; Miller et al., 2009; Rich, 2008), and others find mixed results of TQM success (Kaynak, 2003; York and Miree, 2004; Prajogo and Sohal, 2001; Nair, 2006). These findings poses the question as to what factors contributes to TQM success? In particular, the importance of identification of key TQM practices and their successful implementation is frequently referred to in the literature (Brah et al., 2002; Karia and Asaari, 2006; Prajogo and Sohal, 2006), however, many authors strongly argue that performance measurement is one of the most important dimensions of TQM’s success (Brah et al., 2002; Chang, 2006; Kaynak, 2003; Taylor and Wright, 2006). An improper performance measurement can lead to TQM fad and may act as barrier to TQM implementation (Chang, 2006).

Literature review
Commonly quoted core values for TQM are “customer focus”, “continuous improvement”, “focus on processes”, “focus on facts”, “participation of everybody”, and “committed leadership” (Dale, 1999; Dahlgaard et al., 1998; Bergman and Klefsjo’, 2003). If the core values in business excellence models (BEM) are taken as examples of TQM-values, then a considerable number of values such as “valuing employees and partners”, “systems perspective”, “social responsibility”, and “focus on results and creating value” could also be added (EFQM, 2003). The term methodology is commonly used to describe activities that are performed in a certain order. Some methodologies applied to TQM include...
benchmarking, self-assessment, business process management and six sigma. An important methodology within TQM is the self-assessment process based on criteria in BEM. The American Malcolm Baldrige National Quality Award (MBNQA), the European Foundation for Quality Management (EFQM) Excellence Model and the SIQ Model for Performance Excellence specify criteria based on TQM core values (MBNQA, 2004; EFQM, 2003; SIQ, 2003). Applying these criteria successfully is proven to improve economic performance (Hendricks and Singhal, 1997, 1999; Wrolstad and Krueger, 2001; Hansson and Eriksson, 2002). Typical tools used in TQM initiatives include control charts, cause and effect diagrams, and process maps. In research covering 76 survey-based studies of TQM in the period 1989-2000 it was found that process management was characterised as a critical factor in one third of the studies (Sila and Ebrahimipour, 2003). The value of “focus on processes”, the methodology of business process management and the tools of process mapping are chosen as the main components for the study. For a review of values, methodologies and tools, see, for example, Bergman and Klefsjö (2003). There does not seem to be any generally accepted definition of what a process is (Armistead et al., 1999; Garvare, 2002; Lindsay et al., 2003). There are a number of process definitions with common ingredients such as conversion from input to output, repetitive and interlinked activities, adding value for a customer, see, for example, Melan (1992), Hammer (1996) and Harrington et al. (1997). However, the differences between existing definitions are not extreme, and this makes it possible to present a synthesis reflecting a change from customer focus to stakeholder focus. In this paper the word stakeholder is defined as: “Any identifiable group or individual who can affect the achievement of an organization’s objectives or who is affected by the achievement of an organization’s objectives” (Freeman and Reed, 1983). This definition is used here with the clarification that customers, future generations and nature, amongst others, are seen as stakeholders. Combining these concepts extends the process definition into: “A process is a network of activities that, by the use of resources, repeatedly converts an input to an output for stakeholders.”

**Conceptual framework and hypotheses**

The figure below shows the total quality management dimensions. In the model, attending to customers, Continues improvement, Team work, Training and development, Top management commitment, Communications and Measurement and feedback are independent variables and total quality management in dependent one.

![Conceptual framework of research](image)

**Research methodology**

The study was done in a society includes 107 employees of National Olympic Academy which decreased into 93 ones applying sampling formula.

Current study can be considered as a descriptive survey if to view from data collection aspect and as an applied research if to investigate the goals of the study. To collect the data library method (to refer to books, articles, libraries, etc...) and fieldworks (questionnaire) was being applied.

For assessing questionnaire validity we asked for experts’ opinions and to confirm its reliability Cronbach’s alpha method has been applied. The reliability results calculated which was above the reasonable threshold (0.7).

**Data analyzing**

**Kolmogorov-Smirnov test**

First of by applying Kolmogorov-Smirnov normality of statistical society was surveyed:
As Table 1 shows, data distribution in statistical society is abnormal. So some non-parametric tests were used to data analysis.

**Chi-Square test**
To identify the relationship between attending to customers, Continues improvement, Team work, Training and development, Top management commitment, Communications and Measurement and feedback with total quality management. The results are shown in Table below:

<table>
<thead>
<tr>
<th>Variables</th>
<th>P_Value</th>
<th>Sig</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attending to customers</td>
<td>6.412</td>
<td>0.032</td>
<td>Positive relationship</td>
</tr>
<tr>
<td>Continues improvement</td>
<td>9.812</td>
<td>0.22</td>
<td>Positive relationship</td>
</tr>
<tr>
<td>Team work</td>
<td>11.746</td>
<td>0.000</td>
<td>Positive relationship</td>
</tr>
<tr>
<td>Training and development</td>
<td>9.591</td>
<td>0.035</td>
<td>Positive relationship</td>
</tr>
<tr>
<td>Top management commitment</td>
<td>7.625</td>
<td>0.042</td>
<td>Positive relationship</td>
</tr>
<tr>
<td>Communications</td>
<td>7.826</td>
<td>0.007</td>
<td>Positive relationship</td>
</tr>
<tr>
<td>Measurement and feedback</td>
<td>10.259</td>
<td>0.000</td>
<td>Positive relationship</td>
</tr>
</tbody>
</table>

Table 2 shows that there are positive and meaningful relationship between attending to customers, Continues improvement, Team work, Training and development, Top management commitment, Communications and Measurement and feedback with total quality management in production industries of Mazandaran province.

**Friedman test**
To survey the influence of individual creativity, management support, output orientation, reward system, direction and team orientation on organizational culture, Friedman test was utilized. The results are presented in Table 3:

<table>
<thead>
<tr>
<th>Variables</th>
<th>Standard error</th>
<th>Sig</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attending to customers</td>
<td>0.05</td>
<td>0.000</td>
<td>Positive influence</td>
</tr>
<tr>
<td>Continues improvement</td>
<td>0.05</td>
<td>0.014</td>
<td>Positive influence</td>
</tr>
<tr>
<td>Team work</td>
<td>0.05</td>
<td>0.000</td>
<td>Positive influence</td>
</tr>
<tr>
<td>Training and development</td>
<td>0.05</td>
<td>0.000</td>
<td>Positive influence</td>
</tr>
<tr>
<td>Top management commitment</td>
<td>0.05</td>
<td>0.000</td>
<td>Positive influence</td>
</tr>
<tr>
<td>Communications</td>
<td>0.05</td>
<td>0.000</td>
<td>Positive influence</td>
</tr>
<tr>
<td>Measurement and feedback</td>
<td>0.05</td>
<td>0.000</td>
<td>Positive influence</td>
</tr>
</tbody>
</table>

Also Table 3 illustrates positive influence of attending to customers, Continues improvement, Team work, Training and development, Top management commitment, Communications and Measurement and feedback on total quality management.

**Binomial test**
To survey the levels of research variables Binomial test was applied as:
As table 4 shows all variables apart from Team work are placed in favorable places.

**Conclusion and suggestion**

The current paper with the purpose of identifying the driving affecting factors on total quality management was done in a sample includes 93 employees of National Olympic Academy. To survey total quality management 7 main dimensions were considered: Attending to customers, Continues improvement, Team work, Training and development, Top management commitment, Communications and Measurement and feedback.

The results of applying Chi Square and Friedman tests illustrated Attending to customers, Continues improvement, Team work, Training and development, Top management commitment, Communications and Measurement and feedback affect significantly and meaningfully on total quality management in which all of them apart from Team work were placed in high levels.

Attending to the results, the managers are advised to:

- Formulating comprehensive vision and mission for the organization
- Managers' ethical adherence
- Marketing research and gathering different information about the market and analyzing them
- Identifying competitive advantages ahead organization
- Managing human capitals (employees' knowledge, skill, expertise, competencies and . . .) accurately
- Making supportive culture in the organization
- Defining job description and employees' responsibilities

**References**

Investigating the Affecting Factors on Total Quality Management

31. SIQ (2003), Swedish Institute for Quality, The Swedish Quality Award, Gothenburg.