AN ASSESSMENT OF THE POSSIBILITY OF IMPLEMENTING A TOTAL QUALITY MANAGEMENT SYSTEM AT GUILAN PROVINCE FOUNDATION OF MARTYRS AND VETERANS AFFAIRS (BONYAD SHAHID OF GUILAN PROVINCE)

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Abstract
There are various factors which can affect the organizational performance and ensure its failure or success, including the use of an appropriate model for internal management and market management. One of the management models that have widely been focused in recent years is Total Quality Management (TQM). The current study aims to explain the relationships between the TQM components and the possibility of implementing it in Guilan Province Foundation of Martyrs and Veterans Affairs. Therefore, the comments of 181 personnel working at this organization have been investigated using questionnaire, and the research hypotheses have also been tested utilizing a correlational method. Results show that there is a significant relationship between all the factors for TQM implementation in Guilan Province Foundation of Martyrs and Veterans Affairs and its performance, and implementing the sextuplet factors can lead to TQM implementation.

Keywords: Total Quality Management (TQM), Top Management Support, Customer Focus, Continuous Improvement, Employee Empowerment

1. Introduction
Total Quality Management (TQM) is one of the most perfect and efficient management philosophies which properly includes the topics for the quality and customer satisfaction. In today's world where the national, regional and international competitions are very intense and close to each other on the one hand and the changes and developments in technology have quickly been made on the other hand, an accurate identification and analysis and the proper use of topics such as TQM can be an effective strategy. The creation of TQM is one of the most important aspects of the management performance. TQM supposes that all people are active and want to express their best efforts when doing works. The principles of TQM have initially been founded by Deming in Japan in 1950, and sometimes it is thought that the principles of TQM proposed by Edward
Deming can be just applied in profit and large organizations. But TQM can indeed be applied in any organization such as universities, educational, service, administrative organizations, and so on (Alaghehband, 2010). The term "Quality Control" was firstly introduced by Feigenbaum (1983) in 1969. Today, this is a knowledge used for the management in which an organizational success can be determined. A modern-oriented management science provides the third millennium organizations with the strategies that include the two main characteristics: Evolution and Quality. Quality management with a continued organizational evolution ensures that they would be sustainable and dynamic against the rapid changes in the global social, economic and technological structures. It is worth mentioning that it is more difficult to define the service quality features as compared to the physical products' quality. The reason is that the poor quality of a product is usually caused by the raw materials and inappropriate components, or it may be due to a mistake in design or this fact that it is not manufactured according to the specified characteristics. But a poor quality of services is directly related to people behaviors. The lack of education and attention are mostly the major reasons for the customers’ dissatisfaction with services (Kazemi & Houshyar, 2009, 83). Therefore, after investigating the importance of TQM establishment in the current study, we have tried to assess the possibility of implementing it in Guilan Province Foundation of Martyrs and Veterans Affairs.

Totally, TQM is a process-oriented approach for doing organizational activities that can enhance the customers’ satisfaction through producing high-quality goods and services. It is obvious that the values such as quality and quality orientation have never been threatened in the literature of the organization and management, but TQM with an innovative approach has replaced the process-orientation (process-oriented management) with consequentialism. In fact, previously, the quality control was mostly based on the post-final performance control or output control, and it tried to keep the product quality in a desirable level by identifying the withdrawals and diversions, while TQM believes that the quality needs to continuously improve the processes and consequently the products, and the quality assurance is not limited to the individuals or certain units such as quality inspectors and quality control departments, but it is the responsibility of all organizational members (Faraji, 2003). The main objective of TQM is to achieve a healthy human relationship in organization. These relationships must be as open, effective and efficient ones. In fact, healthy human relationships in workplace can improve the sense of ownership, happiness and exhilaration, which in turn increase the responsibility and employee engagement in the organization. Generally, the organization can easily achieve to its other goals by creating healthy human relationships. Because a person can be effective in improving organizational efficiency, the literature indicate that it is necessary to improve the organizational cultural conditions and healthy human relationships so that each personnel can lonely participate in healthy competitive environment and in turn positively enhance the system (Bonits & et al. 2002).

2. Problem Statement

There are various factors, including the use of an appropriate inter organizational management model and market management, which can affect the organizational performance and ensure its success or failure. One of the models that have widely been focused in the field of performance in recent years is Total Quality Management (TQM). TQM is a managerial philosophy that develops an organizational culture committed to the customer satisfaction through continuous improvement (Farajpour, 2013). Therefore, it is one of the proper tools for creating a dynamic and purposive
organization in order to keep its sustainable and competitive nature in a high-stakes environment (Nazemi et al. 2010). In today's business environment, the basis of the competitive advantage has been transformed from the quality into the innovation. The innovation provides the company with the possibility of rapidly adapting to changes and helps it find new products and markets, so that it can protect itself from environmental instabilities (Sadikoglu & Zehir, 2010). The companies that involve innovation have more increased profits and market share. But it is worth mentioning that if a company can't generate products with accepted standards, it can't be successful just with innovation. For this reason, TQM is a proper way to improve the quality and facilitate innovational process (Samiei Neyestani, 2010).

Guilan Province Foundation of Martyrs and Veterans Affairs is not an exception, and for achieving its goal, it must provide the required substrates for the continuous improvement of the services and finally meeting the society's satisfaction more and more. Thus, it is essential to assess the establishment of a TQM system in the aforementioned organization.

3. Theoretical Framework

Theoretical framework acts as a basis that supports whole the research body. There is a logical, developed, defined and perfect network among the variables which have been identified through the process including interview, observation and studying the previous literature. These variables are related to the problem statement. A proper theoretical framework recognizes and indicates the important variables affecting the conditions and logically explains the relationships between variables (Khaki, 2010).

The dependent variable in this study is TQM. Total Quality Management (TQM) is a comprehensive systematic approach that has a horizontal performance in the organization and includes all employees from the suppliers to the customers (Shahbazipour¹, 2007). The variables which are correlated with dependent variables, called as independent variables, are as follows: Top management support and leadership, employee training, employee empowerment and team work, customer focus, customer focus, measurement and analysis of data quality.

Theoretical framework represents the relationships between dependent and independents variables according to the literature. According to the problem statement, the analytical model of the current study has been illustrated in Diagram. (1) as follows:
- Top management support and leadership- employee training- employee empowerment and team work- customer focus-continues improvement- data quality measurement and analysis

- Total Quality Management (TQM) Establishment

**Diagram. 1. The Research Conceptual Model (Ref. Sadikoglu and Zehir, 2010)**

**Research Questions**

**Key Question (Main Question):**
Is it possible to implement a Total Quality Management (TQM) system in Guilan Province Foundation of Martyrs and Veterans Affairs?

**Secondary Question (Sub Question):**
According to the research conceptual model, the following questions can be expressed:
- Is there any significant relationship between the component of top management support and leadership and the establishment of TQM at Guilan Province Foundation of Martyrs and Veterans Affairs?
- Is there any significant relationship between the variable of employee empowerment and team work and the possibility of implementing TQM at Guilan Province Foundation of Martyrs and Veterans Affairs?
- Is there any significant relationship between the variable of customer focus and the possibility of TQM establishment at Guilan Province Foundation of Martyrs and Veterans Affairs?
- Is there any significant relationship between the variable of continues improvement and TQM establishment at Guilan Province Foundation of Martyrs and Veterans Affairs?
- Is there any significant relationship between the variable of data quality analysis and measurement and the possibility of TQM establishment at Guilan Province Foundation of Martyrs and Veterans Affairs?
4. Research Hypotheses

Main Hypothesis
Guilan Province Foundation of Martyrs and Veterans Affairs is ready to implement a TQM system.

Secondary Hypotheses
- There is a significant relationship between the variable of top management support and leadership and the possibility of TQM establishment at Guilan Province Foundation of Martyrs and Veterans Affairs.
- There is a significant relationship between the variable of employee training and the possibility of TQM establishment at Guilan Province Foundation of Martyrs and Veterans Affairs.
- There is a significant relationship between the variable of employee empowerment and team work and the possibility of TQM establishment at Guilan Province Foundation of Martyrs and Veterans Affairs.
- There is a significant relationship between the variable of customer focus and the possibility of TQM establishment at Guilan Province Foundation of Martyrs and Veterans Affairs.
- There is a significant relationship between the variable of continues improvement and the possibility of TQM establishment at Guilan Province Foundation of Martyrs and Veterans Affairs.
- There is a significant relationship between the variable of data quality analysis and measurement and the possibility of TQM establishment at Guilan Province Foundation of Martyrs and Veterans Affairs.

5. Research Methodology

With respect to the issues mentioned above, the current study is an applied research in terms of objective. In terms of path, it is also a survey study that has investigated to the relationships among the variables through the processes including decision-making processes for the research hypothesis, research population and sample selection, gathering, organizing and analyzing data. In terms of time, it is a cross-sectional study in which the observation can be made during a short-term process for data gathering. Also, this research is a field study in terms of data gathering.

Statistical Population
The research statistical population consists of all employees working at Guilan Province Foundation of Martyrs and Veterans Affairs (i.e. totally, 343 persons).

Statistical Sample
The sample is a set of the subjects that include all a society's characteristics (Khalili Shourini, 2011). Since it has been used a limited society in this study and the qualitative scales are considered here, the sample size has been determined at a 95% confidence level and a 5% estimation accuracy through the following equation. Therefore, the sample size is 181 persons.
Data Collection Tools
In this research, a library study of the literature has been used to determine the research structure, and then we used questionnaire for collecting the required data. A standard questionnaire has been used to measure the research variables. The numbers of the questions for each variable have been indicated in the following table.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Number of Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top Management Support &amp; leadership</td>
<td>10</td>
</tr>
<tr>
<td>Employee Training</td>
<td>4</td>
</tr>
<tr>
<td>Employee Empowerment &amp; Team Work</td>
<td>8</td>
</tr>
<tr>
<td>Data Quality Analysis &amp; Measurement</td>
<td>5</td>
</tr>
<tr>
<td>Customer Focus</td>
<td>7</td>
</tr>
<tr>
<td>Continues Improvement</td>
<td>2</td>
</tr>
<tr>
<td>TQM Establishment</td>
<td>8</td>
</tr>
</tbody>
</table>

Measurement Scale
Since the relative scales were used for the questions, we applied the Likert Scale in the current study. The coefficients 1, 2, 3, 4 and 5 were used for the items "Totally Agree", "Agree", "neither Agree nor Disagree", "Disagree" and "Totally Disagree", respectively. Accordingly, the qualitative data were interpreted with quantities and numerical values and used as a criterion for computations. The questionnaire for collecting the comments about the research topic has been designed as follows:
- Designing the demographic section
- Designing the questions section according to the dependent and independent variables

The Validity of the Questionnaire
It has been more emphasized on a content validity in determining the questionnaire validity. The content validity indicates that how much the questions used in a test can represent all the possible questions that may be provided in terms of the proposed content or issue. In this regard, the judgments and comments of the study experts have been considered. Being certified the questionnaire by the supervisor and using it in similar valid questionnaires can help the author approve its content validity.

Reliability
It has been used Cronbach’s Coefficient Alpha in order to analyze the questionnaires reliability. In Cronbach’s Alpha method, it has been taken tool or correlation test between each item with total scores, and it is supposed and expected that persons who get the score in determined items will operate in same way in other items, because all items of the designed tool are in line with testing
something or a determined characteristic. The more an Alpha is closer to one, the higher the internal consistency is. If the alpha at least be equal to 70%, it is acceptable (Mirzaei, 2009). At first, in order to analyze Cronbach’s Alpha, 30 questionnaires were distributed and Cronbach’s Alpha of each variable and finally Cronbach’s Coefficient Alpha of the whole questionnaire was calculated. You can see the results of these calculations in the following table.

**Table 2 – Questionnaire Validity**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Amount of Cronbach’s Coefficient Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top management support &amp; Leadership</td>
<td>0.959</td>
</tr>
<tr>
<td>Employees training</td>
<td>0.944</td>
</tr>
<tr>
<td>Employee empowerment and teamwork</td>
<td>0.925</td>
</tr>
<tr>
<td>Data quality analysis &amp; measurement</td>
<td>0.916</td>
</tr>
<tr>
<td>Customer focus</td>
<td>0.910</td>
</tr>
<tr>
<td>Continuous improvement</td>
<td>0.816</td>
</tr>
<tr>
<td>Establishment of total quality management</td>
<td>0.917</td>
</tr>
<tr>
<td>Whole questionnaire</td>
<td>0.980</td>
</tr>
</tbody>
</table>

Due to this issue that the amount of Cronbach’s Alpha for each variable is higher than 0.9 and also the amount of it for whole questionnaire is 0.980, the validity of the questionnaire is accepted.

6. Findings

**Results of Research Hypothesizes Analysis**

**Hypothesis 1:** There is a significant relationship between the component of top management support and leadership and the possibility of TQM establishment at Guilan Province Foundation of Martyrs and Veterans Affairs.

**Hypothesis 2:** There is a significant relationship between the component of employee training and the possibility of TQM establishment at Guilan Foundation of Martyrs and Veterans Affairs (Bonyad Shahid of Guilan Province).

**Hypothesis 3:** There is a significant relationship between the component of employee empowerment and teamwork and the possibility of TQM establishment at Guilan Foundation of Martyrs and Veterans Affairs.

**Hypothesis 4:** There is a significant relationship between the component of customer focus and the possibility of TQM establishment at Guilan Foundation of Martyrs and Veterans Affairs.

**Subsidiary hypothesis 5:** There is a significant relationship between continuous improvement and the possibility of TQM establishment at Guilan Foundation of Martyrs and Veterans Affairs.

**Subsidiary hypothesis 6:** There is a significant relationship between the component of data quality analysis and measurement and the possibility of TQM establishment at Guilan Foundation of Martyrs and Veterans Affairs.

**Table 3 – description of research variables**

<table>
<thead>
<tr>
<th>Variables</th>
<th>Number</th>
<th>minimum</th>
<th>maximum</th>
<th>average</th>
<th>Standard deviation</th>
<th>variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership and top management support</td>
<td>181</td>
<td>1.20</td>
<td>5.00</td>
<td>2.982</td>
<td>1.044</td>
<td>1.091</td>
</tr>
</tbody>
</table>
Analysis of the Normality of Variables Distribution

In order to clarify the type of used test (parametric and nonparametric tests), we should test this issue that if variables do follow normal distribution or not. If they do follow normal distribution, it should be used parametric test and if they don’t follow normal distribution, we should use nonparametric tests. So it is used Kolomogrov-Smirnov (K-S) test and the results are shown in table 4 as follows:

<table>
<thead>
<tr>
<th>Variable</th>
<th>statistics</th>
<th>Significance level</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership and top management support</td>
<td>1.84</td>
<td>0.02</td>
<td>Abnormal</td>
</tr>
<tr>
<td>Employees training</td>
<td>2.44</td>
<td>0.00</td>
<td>Abnormal</td>
</tr>
<tr>
<td>Employee empowerment and teamwork</td>
<td>1.26</td>
<td>0.08</td>
<td>Abnormal</td>
</tr>
<tr>
<td>Data quality analysis and measurement</td>
<td>1.41</td>
<td>0.03</td>
<td>Abnormal</td>
</tr>
<tr>
<td>Customer focus</td>
<td>1.73</td>
<td>0.00</td>
<td>Abnormal</td>
</tr>
<tr>
<td>Continuous improvement</td>
<td>1.80</td>
<td>0.00</td>
<td>Abnormal</td>
</tr>
<tr>
<td>Establishment of total quality management</td>
<td>1.07</td>
<td>0.19</td>
<td>normal</td>
</tr>
</tbody>
</table>

Error level is 0.05.

It is used Pearson Correlation Coefficient in each item in which both of variables are normal, otherwise (in analysis of relations in which at least one of the variables of abnormal distribution has a significant level lower than 0.05), it has been used nonparametric test of Spearman Correlation Coefficient. As you see, all variables except the variable of employee empowerment and teamwork and establishment of total quality management do follow an abnormal distribution.
Research Hypothesis Test

Table 5 – correlation coefficient between each variable with possibility of establishment of total quality management

<table>
<thead>
<tr>
<th>Variables</th>
<th>number</th>
<th>Amount of correlation coefficient</th>
<th>Level of significance</th>
<th>result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership and top management support and possibility of establishment of total quality management</td>
<td>181</td>
<td>69.8 %</td>
<td>000/0</td>
<td>Hypothesis confirmation</td>
</tr>
<tr>
<td>Employee training and possibility of establishment of total quality management</td>
<td>181</td>
<td>65.3 %</td>
<td>00/0</td>
<td>Hypothesis confirmation</td>
</tr>
<tr>
<td>Employee empowerment and possibility of establishment of total quality management</td>
<td>181</td>
<td>77.1 %</td>
<td>00/0</td>
<td>Hypothesis confirmation</td>
</tr>
<tr>
<td>Customer focus and possibility of establishment of total quality management</td>
<td>181</td>
<td>74.4 %</td>
<td>00/0</td>
<td>Hypothesis confirmation</td>
</tr>
<tr>
<td>Continuous improvement and possibility of establishment of total quality management</td>
<td>181</td>
<td>5/62 %</td>
<td>00/0</td>
<td>Hypothesis confirmation</td>
</tr>
<tr>
<td>Measurement and analysis of information quality and possibility of establishment of total quality management</td>
<td>181</td>
<td>0/74 %</td>
<td>00/0</td>
<td>Hypothesis confirmation</td>
</tr>
</tbody>
</table>

Figure 2 – Summary of results
Results of descriptive statistics

Of 181 selected items, there were 23.8% women and 69.6% men. Likewise 0.6% of them were between 18 and 25 years old, 16.6% between 26 and 35, 33.1% between 36 and 45, 38.1% between 46 and 55, 2.2% above 55 years old. Also there were 16.6% at culture unit, 22.1% at development unit, 5.5% at housing unit, 5.5% at healthcare unit, 4.4% at research unit and 3.9% at presidential field who work. Due to years of service, 2.8% between one and five years, 24.9% between 6 to 10 years, 37.6% between 11 and 20 years and 24.9% above 21 years had experience. Likewise, due to document, 0.6% were under diploma, 12.2% were diploma, 19.9% had associate degree, 53.6% had bachelor degree, 8.8% had masters and 1.1% had PHD degree.

- The least amount of the variable of leadership and top management support is 1.20 and the highest amount of it is 5.00, with the average of 2.98 and standard deviation of 1.04 and variance of 1.09. Due to resulted average, it can be said that from the perspective of employees, the mentioned variable at Guilan Foundation of Martyrs and Veterans Affairs is not at an appropriate level.

- The least amount of variable of employees' education is 1 and the highest amount of it is 5, with the average of 2.92 and standard deviation of 1.11 and variance of 1.24. Due to resulted average, it can be said that from perspective of employees, mentioned variable at Guilan Foundation of Martyrs and Veterans Affairs is not at an appropriate level.

- The least amount of variable of employee empowerment and teamwork is 1.00 and the highest amount of it is 5.00, with the average of 3.04 and standard deviation of 0.86 and variance of 0.75. Due to resulted average, it can be said that from perspective of employees, mentioned variable at Guilan Foundation of Martyrs and Veterans Affairs is at an appropriate level.

- The least amount of variable of measurement and analysis of information quality is 1 and the highest amount of it is 5.00, with the average of 2.89 and standard deviation of 0.88 and variance of 0.78. Due to resulted average, it can be said that from perspective of employees, mentioned variable at Guilan Foundation of Martyrs and Veterans Affairs is not at an appropriate level.

- The least amount of variable of customer focus is 1.00 and the highest amount of it is 5.00, with the average of 2.53 and standard deviation of 0.83 and variance of 0.70. Due to resulted average, it can be said that from perspective of employees, mentioned variable at Guilan Foundation of Martyrs and Veterans Affairs is not at an appropriate level.

- The least amount of variable of continuous improvement is 1.00 and the highest amount of it is 5.00, with the average of 2.80 and standard deviation of 1.00 and variance of 1.00. Due to resulted average, it can be said that from perspective of employees, mentioned variable at Guilan Foundation of Martyrs and Veterans Affairs is not at an appropriate level.

- The least amount of variable of establishment of total quality management is 1.38 and the highest amount of it is 5.00, with the average of 2.89 and standard deviation of 0.76 and variance of 0.58.
Due to resulted average, it can be said that from perspective of employees, mentioned variable at Guilan Foundation of Martyrs and Veterans Affairs is not at an appropriate level.

7. Discussion and Conclusion
Due to results of hypothesis testing, we found that there is a significant relation between all related factors to establishment of total quality management system and Guilan Foundation of Martyrs and Veterans Affairs with implementation of mentioned system, and the implementation of factors of six make possible the implementation of total quality management system. Likewise, the results of current research has shown that from perspective of employees of this organization, it is just employee empowerment and teamwork components which are relatively at ideal level and other examined components have not the proper situation, i.e. leadership and top management support, employees training, measurement and analysis of information quality, customer focus and continuous improvement.

Executive Suggestions Based on Research Results
Since all examined components have significant relation with possibility of establishment of total management system and also from perspective of employees of this organization, mentioned components are not implemented properly except empowering component, so these items are suggested as follow:
- Organization management should encourage employees to innovate and consider reward for that. Likewise, he should involve in projects of quality improvement individually.
- Education based on total quality and also some specific skills in periodic and continuous form should be considered for employees of organization.
- Forms of ideas of employees should be used regularly and their attitude and comments should be considered in conferences.
- The method of services delivery should be considered in addition to definition of duties and employees services.
- Senior managers should behave in a way in order to highlight the importance of customers’ satisfaction for employees.
- Different innovative and effective methods should be designed in order to get feedback from customers for all organizational operations.
- Specific indices should be designed and as operation of total quality management system and reported periodically.

Suggestions for Future Researches
- In order to reach more reliable results due to limitations of questionnaire tools, it’s better to use from interview tools.
- It is suggested that in order to identify more precisely, the related factors with implementation of total quality management system based on mathematic models and research techniques in operations such as multi-attribute decision making and multi-goal decision making with logical or fuzzy approach be analyzed and prioritized.

References