ORIGINAL ARTICLE

A Study on the Effects of EFQM Excellence Model with Regard to Customer Results in Mazandaran Province Gas Company (MPGC)

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Organizations need to identify and outline their current positions through continually employing methods and models to assess the current organizational activities. Basically, performance evaluation and review of plans/strategies are required by any effective management. Similarly, Mazandaran Province Gas Company (MPGC) should carry out its dynamic tasks and improve quality by a suitable model for assessment and quality assurance of plans and processes particularly those concerning customer satisfaction. As a not-for-profit membership foundation in Brussels, the European Foundation for Quality Management (EFQM) Excellence Model has provided an ideal measure for performance evaluation selected for MPGC as case study. This thesis intended to evaluate the satisfaction of customers at MPGC with follow-up activities and services provided by the company based on customer results of EFQM model. All subscribers of MPGC were considered as the population. The methodology involved a descriptive survey, while the data collection tool involved a questionnaire based on criteria of customer results in EFQM model covering image, attitude, services and after delivery follow-up. Moreover, data were analyzed through statistical measures including descriptive and inferential statistics.

Introduction

The EFQM is one of the most important Iranian organizations in the energy development and supply sector, where services in the current situation are essential for sustainable development in Mazandaran province. Economic growth in recent years and changing customer attitudes toward organizations and promotion of their expectations compelled the provincial gas company executives to think anew. One of the most effective tools for realizing an effective change in organizations and upgrade their performance level is implementation of organizational excellence based on the EFQM Model. As a not-for-profit membership foundation in Brussels, the European Foundation for Quality Management (EFQM) Excellence Model has provided an ideal measure for performance evaluation selected for MPGC in this study.

Using these models, an organization can evaluate its status in carrying out improvement plans in different junctures, while comparing its performance against other organizations, especially the top-notch ones [5].

EFQM Excellence Model provides a framework based on the eight values categorized into nine areas of empowerers and results. Four areas of results represent the achievements of proper implementation of five empowerment areas, one of which involves customer results. Customer results examine what results have been achieved by an organization dealing with their customers and to what extent effort has been made to realize customer satisfaction. Excellent organizations pervasively measure and achieve important results concerning their customers [9].

One of the key objectives of any enterprise today is customer satisfaction because it influences all organizational processes. Nowadays, keeping customers along is the most important business activities of successful organizations. Although this activity used to entail more of a propagandist aspect, it has become one of the fundamental requirements of quality management systems and business excellence models such as EFQM, thus counted a major concern to any enterprise. Similarly by introducing quality models such as EFQM Excellence Model in Iran over the last decade, great focus has been shifted onto customer satisfaction and their requirements. In general, one of the main dimensions of the EFQM model involves customers. In fact, customer satisfaction in customer results accounts for 20% of score for evaluating how successful an organization is [4].

That is why MPGC as one of the successful companies in the Iranian energy sector pays great

attention to customer satisfaction, propelling the managers to investigate the customer results after implementation of the model. According to the indicators specified in this area, MPGC intended to assess the satisfaction of its subscribers and improve the services. In fact, effort was made to adopt the evaluation results to set out several appropriate strategies and policies for further corporate growth.

Importance of evaluation:

In the present era, evaluation system has become inevitable due to dramatic changes in the management sciences. In this regard, poor evaluation in various organizational aspects including the utilization of resources and facilities, employees, goals and strategies is considered as one of the symptoms of organizational illness. Any organization urgently requires an evaluation system so as to measure the desirability and quality of each activity especially in complex dynamic environments.

On the other hand, lack of an evaluation and control system implies inadequate communication with the outside environment, ultimately leading to organizational senility and death. The sudden incidence of organizational death might not be felt on the part of senior managers, even though studies suggest that a poor feedback system can hinder measures taken toward growth, development and improvement of organizational activities. This eventually gives rise to organizational death.

From another perspective, evaluation can be discovered deep in the heart of the entire universe. The very harmonious order in the universe reflects a perfectly calculated feedback loop. Evaluation system functions as one of the elements of that loop, although it may not be explained by humans whose knowledge and information are limited. The consistency and durability of any system, however, depends mainly on its integrated evaluation and control system [1].

Overview of research model:

European Foundation for Quality Management (EFQM) was established in 1988 by fourteen leading European organizations for business excellence of the European industry through improving of quality as a fundamental process for continuous improvement. This not-for-profit membership foundation began its mission to realize excellence of European organizations spearheaded toward sustained excellence around the world [8].

It served to outline, encourage and assist selection management and application of concepts proposed in Total Quality Management and improvement of competitiveness within European organizations [6]. EFQM Excellence Model has been introduced as a systematic framework for performance evaluation in terms of processes and their results as well as organizational improvement. It provides a model entailing sustainable advantages to be achieved by any leading excellent organization [5,10]. The EFQM Excellence Model is a tool to assist organizations, while enabling managers to assess the extent of their success in implementing plans at different junctures. Moreover, it provides an opportunity to identify strengths and weaknesses through comparison of status quo and the ideal conditions, according to which certain projects will be devised and executed so as to progress toward excellence [7]. As a result, EFQM has firstly outlined the concepts of quality and business excellence in an eloquent language, providing a systematic well-structured paradigm for planning and deploying total quality management systems. Secondly, it functions as a systematic self-assessment tool assisting organizations to assess their management and performance systems based on specific criteria. [11, 12]

The EFQM Excellence Model comprises eight fundamental principles or concepts which substantially require management and recognition. In fact, EFQM is a non-prescriptive model composed of 9 criteria, which constitute the core of this model and function as an evaluation measure for any organization classified into empowerers and results. Empowerer criteria (leadership, policy and strategy, employees, partnerships and resources, processes) cover what an organization does as factors contributing to empowerment of an organization to achieve excellent results (Customer Results, Employee Results, Society Results and Key Performance Results) attained by an organization representing the achievements of proper implementation of empowerers [9].
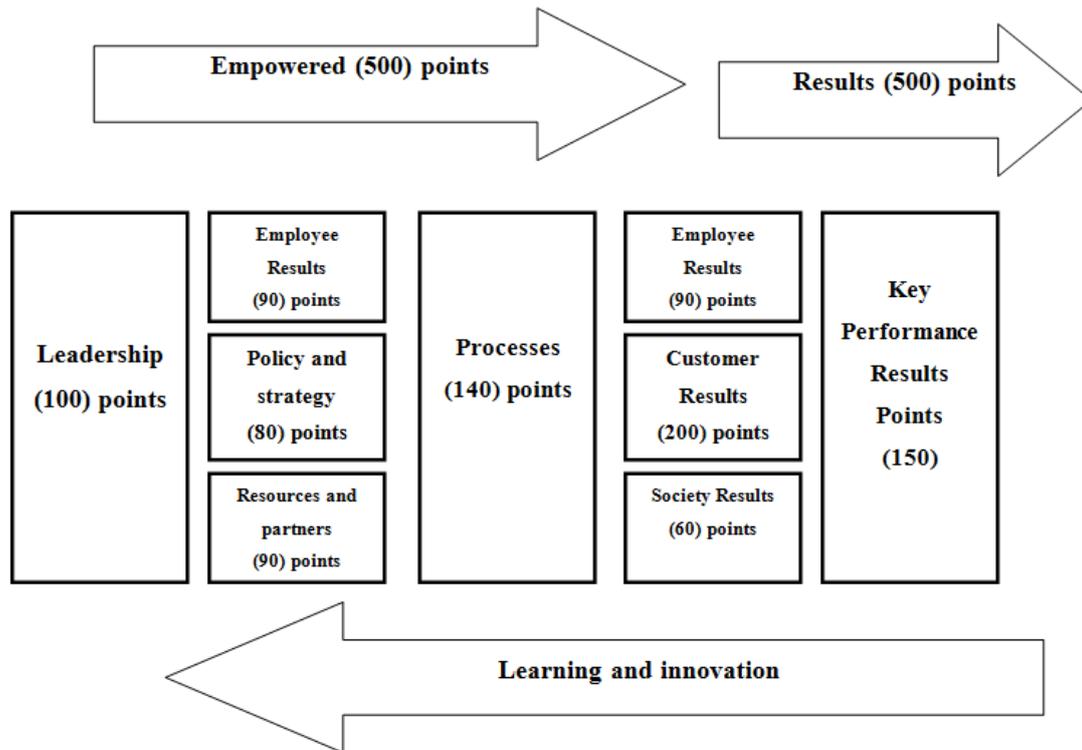
Figure (1). Overview of EFQM model

Excellent organizations pervasively obtain and assess the major results concerning their customers, which reveals what results an organization achieves in relation to outbound customers. The scales in EFQM represent customer perception of the organization, covering the following items:

A. General perceptions: Accessibility, communication, flexibility, accountability, transparency

B. Products and services: Quality, value, reliability, innovation in design

C. After-sale support: Staff behavior and capabilities, complaints handling, product-related training, technical documentation provided to customers, response time

D. Loyalty: Willingness to repurchase, tendency to buy other products of the organization, desire to refer others to the organization [3].

It is noteworthy that since there is no competition for MPGC, loyalty factors were insignificant.

EFQM customer results at MPGC
A. General perceptions of the company:

Accessibility: Convenient access and contact of subscribers to the organization and its employees.

Communications: Proper notification to subscribers as core customers and audience of the organization, and carefully listening to their voice and opinions.

Flexibility: It implies the reaction and response rate of the company to changes and new conditions.

Accountability: It implies that staff are willing to help the customers, respond to their request, and notify them on provision of services and instant delivery.

(B) Products and Services:

Quality: It involves to what extent services offered by the company match the individual characteristics and needs.

Value: It is equivalent to received level of quality per price paid in cash and time.

Reliability: This means that the employees' behavior assures the subscribers. Moreover, employees have the necessary knowledge to answer the question of subscribers.

Innovation and design: This means the company exercises innovation and creativity in the design of programs and minor activities.

C. After-delivery follow-up services:

Abilities and behavior of employees: It refers to skills and knowledge needed to provide services.

Technical documentation provided to subscribers: extent of written notification concerning how to make the most of its programs and services.

Educational services on how to use products: Advice and tips on how to use the services offered by the company.

Response time: Speed and reaction to subscribers' demands.

Research objective:

This study mainly attempted to investigate to what extent Mazandaran Province Gas Company (MPGC) has made efforts for implementation of EFQM model and has managed to successfully assess customer satisfaction through image and attitude, service and providing after-delivery follow-up. In fact, this study sought to demonstrate how MPGC deals with customer-orientation or satisfaction.

Main question:

With regard to implementation of the EFQM Excellence Model in MPGC, what is the current status of customer satisfaction in the company?

The main question was divided into the following sub-questions:

1. Do services provided by MPGC bring about customer satisfaction?

2. Do image and attitude adopted by MPGC customers provide satisfaction?

3. Do after-delivery follow-up services by MPGC affect customer satisfaction?

4. Which of the seven MPGC provincial areas have been more customer oriented than the rest?

Methodology:

Basically, any scientific research can be categorized based on objective and nature. This was a descriptive-survey study in nature and applied in terms of objective. The population comprises the entire MPGC subscribers in 2009. Moreover, the sample covered seven provincial areas selected through a simple random procedure displayed in Table 1.

Table (1). Distribution of samples in separate provincial areas

Characteristic / Provincial areas	Statistical population	Sample	Sample percentage
Amol	54054	226	14.8
Babol	61056	255	16.6
Behshahr	29392	122	8
Tonekabon	17730	74	4.8
Sari	95605	400	26.1
Ghaemshahr	69273	290	19
Noshahr	39291	164	10.7
Total	366401	1531	100

As indicated in the table above, the highest number of samples belonged to Sari (26.1%) while the lowest number belonged to Tonekabon (4.8%).

The instrument used for data collection was a questionnaire assessing the subscriber satisfaction and quality of services provided by MPGC with an emphasis on the EFQM model. This questionnaire was constructed firstly by precisely reviewing the EFQM model in the dimension of customer results and its relevant components. Customers in the localized version of the model were called subscribers of MPGC. At the next stage, each component in the customer results, indicators of satisfaction were specified along with the corresponding items. The indicators were then formulated as an 18-item questionnaire within three main components of customer results including general perception, service and after-delivery follow-up. The items covered a five-point Likert scale ranging from very low (1), low (2), average (3), high (4) and very high (5), among which the respondents had to choose one. The respondents would quickly understand and easily answer these questions. On the other hand, the extracted data can be easily categorized and analyzed.

The content validity of the questionnaire was verified by several university supervisors and subject matter experts. Moreover, Cronbach's alpha was used to determine the reliability of the instrument. Cronbach's alpha is adopted for calculating the internal consistency of questionnaires or tests assessing a variety of characteristics [2].

The collected data in this study were analyzed and classified in SPSS as well as descriptive and inferential statistics. The descriptive statistics processed the data derived from questionnaires through tables, frequencies, percentages and diagrams while the inferential statistics was employed to either prove or reject the first three research questions. Moreover, the chi-square test and one-way ANOVA were employed to answer Question 4.

Findings:

First question: 1. Do services provided by MPGC bring about customer satisfaction?

The MPGC was examined from various perspectives such as quality of service, time value, monetary value, environment and upgraded facilities.

Table (2) Chi-square test for the first research question

First question	Chi-square test	Degree of freedom	Significance level
	2786.012	4	0.000

According to Table (2) displaying the results of this test, the calculated significance level was less than 5%. Hence, the calculated Chi-square test at 4 degrees of freedom and a confidence interval of 99% was statistically significant, indicating the approval of hypothesis. In other words, it can be argued that services provided by MPGC brought about customer satisfaction.

Second question: Do image and attitude adopted by MPGC customers provide satisfaction?

Image and attitude of MPGC were assessed through components such as accessibility, transparency, accountability, communication and proactive behavior.

Table (3) Chi-square test for the second research question

Second question	Chi-square test	degree of freedom	Significance level
	1473.386	4	0.000

According to Table (3) displaying the results of this test, the calculated significance level was less than 5%. Hence, the calculated Chi-square test at 4 degrees of freedom and a confidence interval of 99% was statistically significant, indicating the approval of hypothesis. In other words, it can be argued that image and attitude adopted by MPGC customers adequately provided satisfaction.

Third question: Do after-delivery follow-up services by MPGC affect customer satisfaction?

After-delivery follow-up services by MPGC were assessed through several indicators such as ability and behavior of employees, performance, complaints handling, brochures and technical materials.

Table (4) Chi-square test for the third research question

Third question	Chi-square test	degree of freedom	Significance level
	1431.835	3	0.000

According to Table (4) displaying the results of this test, the calculated significance level was less than 5%. Hence, the calculated Chi-square test at 3 degrees of freedom and a confidence interval of 99% was statistically significant, indicating the approval of hypothesis. In other words, it can be argued that after-delivery follow-up services by MPGC brought about customer satisfaction.

Fourth question: Which of the seven MPGC provincial areas have been more customer oriented than the rest?

The entire components mentioned in the three previous questions were examined through comparison of seven provincial areas of MPGC in terms of customer-orientation. Table (5) display the results, according to which it can be stated that the highest mean in terms of customer-orientation was found in Noshahr (66.91) while the lowest mean was found in Sari (58.26).

Table (5). Comparison of means between seven provincial areas of MPGC

Seven provincial areas of MPGC	Mean	Sample	Standard deviation
Sari	58.26	400	3.85
Ghaemshahr	60.13	290	11.21
Babol	60.75	255	11.09
Behshahr	59.00	122	11.38
Amol	63.94	226	2.87
Noshahr	66.91	164	5.98
Tonekabon	64.77	74	3.85
Total	61.17	1531	8.49

The fourth question was analyzed through one-way ANOVA ANOVA as follows.

Table (6). Analysis of variance for the difference between educational groups

	Sum of squares	Degree of freedom	Mean of squares	F	Significance level
Inter-group	12428.83	6	2071.47	32.20	0.000
Intra-group	98015.67	1524	64.31		
Total	110444.50	1530			

Having completed the one-way analysis of variance, the mean value of respondent satisfaction were compared. The significance level was calculated to be less than 5% according to Table (6). Therefore, the obtained test was adequately significant,

indicating there is a difference between the provincial areas of MPGC.

Conclusions:

The results for the analysis of findings were examined through approval or rejection of hypothetical questions.

The first question concerned the services provided by MPGC and its impact on customer satisfaction. Therefore, it can be argued that respondents checked very low by 0.1%, low by 1%, average by 11.6%, high by 72.8% and very high by 14.5%. In the inferential analysis of the first question, the chi-square test indicated that the calculated significance level was less than 5%. This statistically represented the significance of the test, thus proving the first hypothesis.

The second question concerned the image and attitude of MPGC received by customers and its impact on realizing satisfaction. Therefore, it can be argued that respondents checked very low by 0.3%, low by 2.7%, average by 39.4%, high by 47.6% and very high by 9.9%. In the inferential analysis of the first question, the chi-square test indicated that the calculated significance level was less than 5%. This statistically represented the significance of the test, thus proving the second hypothesis.

The third question concerned the after-delivery follow-up services provided by MPGC and its impact on customer satisfaction. Therefore, it can be argued that respondents checked low by 0.1.5%, average by 36.2%, high by 59.3% and very high by 3%. In the inferential analysis of the first question, the chi-square test indicated that the calculated significance level was less than 5%. This statistically represented the significance of the test, thus proving the third hypothesis.

The fourth question concerned customer-orientation of seven provincial areas of MPGC compared with each other. The data and components obtained from the three previous questions were described in separate tables. Since the questionnaire items were measured on a Likert scale, the score given to each respondent ranged from 18 to 90. Accordingly, it can be stated that the highest mean of customer-orientation was found in Noshahr (66.91) while Tonekabon, Amol, Babol, Ghaemshahr and Sari ranked next by means of 64.77, 63.94, 60.75, 60.13, 59 and 58.26, respectively.

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