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Evaluation of Effectiveness of Implementing Quality Management System (ISO9001:2000) Using BSC Approach in NIGC

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Abstract

The purpose of this research is to evaluate the effectiveness of implementation Quality Management System (ISO 9001:2000) in gas processing plants of National Iranian Gas Company using balanced scorecard approach. More specifically, we chose the balanced scorecard framework to examine five well-known gas processing plants in National Iranian Gas Company from four different perspectives in order to provide a more comprehensive view of organizational performance after the registration of ISO 9001. The methodology used in this research comprised administering a questionnaire to 360 respondents in the company in order to find out the results of using ISO 9001:2000 on the firms under study based on four BSC aspects and. The results indicated that: First, the BSC could be used successfully to measure the performance of quality systems in the gas processing plants of NIGC. Second, the findings indicated ranking of five plants based on the BSC perspective. However, the customer and learning perspectives are neglected in the target companies.

Keywords: Organization performance management; Quality management (ISO 9001:2000); Balanced Scorecard; Gas Treating Plants (companies) of NIGC.

1. Introduction

ISO was an outgrowth of the unification of two organizations, the International Federation of National Standardizing Associations and the United Nations Standards Coordinating Committee in 1947. It was primarily a metric organization focused on standardization and made up of representatives from 25 countries. ISO found its home in Geneva, Switzerland. In the early 1950s, the Technical Committee had developed "recommendations." ISO was becoming the standard for production, trade, and an element in national and industrial policies on quality, safety, environment, and consumer protection. However, rapid expansion of ISO did not occur until the 1960s. Not wanting to reinvent the wheel, the committee looked to countries with standards to promulgate them internationally. Ultimately, they were inundated with documents and a mechanism (ISONET) was put in place to provide a system to catalogue them and integrate such information. The road was not always smooth. International consumer organizations protested That they didn't want a ready-made system imposed on them and were capable of measuring their own quality. Raymond Frontard, former director general of the French standards body, noted the "curious alliance between the big companies and the consumer groups, preaching for the liberty of the wolf to eat the sheep and the sheep to be eaten again."

The 1970s saw the ISO recommendations change into standards. No longer were they just recommended. In 1971, a technical committee was established to deal with standardization with implants for surgery. Also, in the late 1970s, quality management and assurance introduced the ISO 9000 series of standards, termed one of ISO's most spectacular. Today, ISO has over 10,000 standards. They cover a broad array of fields: common names for pesticides, nuclear energy, cinematography, rubber, containers, computers, and, now, quality and environmental management.

ISO 9001:2000 specifies the national, regional and international accepted procedures and criteria that are required to ensure that products and services meet

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customers' requirements. It identifies the basic disciplines of a Quality Management System and can be used by manufacturers, suppliers, service industries and end users – large or small – with equal effects. These processes, procedures, disciplines and criteria can be applied to any firm, no matter its size – whether they employ just a few people or many thousands. It can also be used by companies to set up their own Quality Management System and can form the basis for assessing a manufacturer's Quality Management System (i.e. to ensure that a supplier or service industry has the ability to provide satisfactory goods and/or services).

ISO 9001:2000 is an effective method for establishing and implementing quality in organizations, this standard emphasize on the replying to the customers' requirements But achieving to the standard of ISO 9001:2000 does not mean that the organizations' products and services are completely based on the customers' requirements. It only means that this organization's rules and processes are organized based on replying to the customers' requirements and managers must always check these rules and process to make sure that all of them are based on their needs.

Quality systems such as ISO 9001:2000 are gradually being implemented in the gas industry, but their purpose is not fully understood at any level of many companies in this sector. Other novel management systems such as the balanced scorecard are also not well understood. In this paper, we used Balanced Scorecard (BSC) for considering the five treating gas companies that are sub-companies of NIGC in order to find out the strength and weakness of implementing ISI 9001:2000. The main question stimulating this research is finding the impact of using ISO 9001: 2000 in NIGC companies and probing whether they can reach their goals after implementing ISO 9001:2000. A questionnaire was used to collect the required data.

The paper is outlined as follows: In section 2, the related literature is reviewed. Section 3 briefly introduces ISO 9001:2000. In section 4, we explain the four Balanced Scorecard perspectives. In section 5, our research methodology based on the Balanced Scorecard is explained and section 6 presents results and conclusions.

2. Literature Review

The literature reveals a relationship between the managers' motives for adopting certification and the ensuing experience as identified by the Science And Engineering Policy Studies Unit In the UK [23]. Those organizations that pursue ISO9000 certification willingly and positively across a broad spread of objectives are more likely to report improved organizational performance. Customer pressure, however, was the most commonly cited motivating factor for pursuing ISO9000 certification. These companies were less likely to report improved organizational performance [1, 2, 4].

A large study funded by the Australian Government and conducted by the Australian Manufacturing Council (AMC), AMC [2] cautioned firms that ISO9000 certification is not a substitute for delivering high quality products and services as defined by customer needs. The AMC study gathered quantitative data from a large random sample through a mail survey of manufacturing site managers in Australia and New Zealand. The purpose of the study was to investigate the extent of best practice adoption by Australian and New Zealand manufacturing firms and its impact on organizational performance. Furthermore, the study claimed that ISO9000 certification could cause managers to become complacent about quality. There is the risk of locking in or systematizing some poor practices through the certification process. Ideally, organizations should set themselves quality standards well above the minimum prescribed by ISO9000 standards, and constantly seek ways to improve all facets of the operation. The AMC study concludes that certification is likely to lead to both actual and perceived quality improvements, as well as over all improvements in organizational performance.

The other extreme of the main stream literature is mainly anecdotal. Several large ISO9000 consulting firms have produced large in-house studies for their clients, but most have released only their results, and not their methodologies. These studies found that the primary business value of ISO9000 certification was to open doors to markets which were previously closed [4, 10, 19, 22].

Considering the idea of reviewing the business performance of the companies after their motivation to ISO9000 is considered by Terziovski *et al.* [28] and this paper have the similar idea, although we have choose the BSC for evaluating the business performance of the firms.

3. ISO 9001:2000

Since ISO 9000 series of standards first emerged in 1987, many authors found that ISO offered a reasonable first step toward implementing quality [3,7,8,9,17, 24,26,27,29,30,31]. This initial version of ISO addressed quality issues in categories such as quality policy, quality documentation and quality planning [18].

The old ISO 9000/1994 included 20 points that described categories ranging from management responsibility to statistical techniques. Contract reviews, design control, document and data control and purchasing were other categories. Under each of these 20 categories, there were more detailed descriptions of issues to be addressed. For instance, within the category of management responsibility, the issues of quality policy, organization, and management review were addressed.

By comparison, the new ISO 9001/2000 version has four major sections that replace 20 points of the 1994 version. Each of these four sections is represented by four constructs and they are organized into one coherent framework. The constructs represented in the framework

are (1) management responsibility, (2) resource management, (3) product and service realization, and (4) measurement, analysis and improvement. Further, they are organized in a way that one leads to another, as in a wheel, which ultimately improve customer satisfaction.

ISO 9001:2000 is a necessary requirement for a quality management system. It is a part of the ISO 9000 family that consists of ISO 9000 (Fundamentals and Vocabulary) [17, 11], ISO 9001 (Requirements) [12], ISO 9004 (Guidelines for Performance Improvements) [13], and ISO 19011 (Guidelines for Quality and Environmental Management Systems Auditing). ISO 9001:2000 is an abstract and a sparse document that can be applied to any category of business. When it is to be applied to organizations in the software industry, ISO 9001 can be further interpreted by using either ISO 9000-3[14] or TickIT [5]. To achieve an ISO certification, organizations must be compliant with every clause of ISO 9001:2000 [3]. Compared with ISO 9001:2000, ISO 9004:2000 is not a requirements document.

Rather, it is a document that provides guidance for further process improvement. ISO 9001:2000 and ISO 9004:2000 are similar in terms of both structure and terminology they use in order to facilitate their application as a consistent pair [12, 13] of standards [6].

The aims of ISO 9001:2000 are as follows:

- be flexible enough to fit any sort of organization (the manufacturing emphasis is gone);
- no longer consists of 20 isolated elements;
- has a new quality process management model;
- defines responsibilities and authorities within the process areas;
- has a new emphasis on the identification of stakeholders and how the organization plans to meet their needs;
- includes quality planning
- sets a requirement for the regular review of quality objectives;
- provides a flexible approach to quality documentation;
- provides useful rules for presenting the Quality Manual;
- enables an organization to assure that its infrastructure is sufficient to meet its quality objectives;
- provides a method for continually reviewing the work environment and its effect on quality;
- emphasizes the identification and review of customer needs and expectations;
- needs a formal review of an organization's ability to meet customer needs;
- emphasizes close communications with customers;
- includes process capability studies;
- includes design control based on project management;
- includes expanded validation of design requirements;
- requires configuration management;
- gives a better definition of the function of purchasing and procurement;
- verifies purchased products;
- validates the output of processes within an organization;
- replaces service requirements with delivery and post delivery service requirements;
- needs process measurements and process audits;
- documents how a product is measured and evaluated using a Quality (Control) Plan;
- includes the requirement for regular revalidation of products or services to ensure that they continue to meet customer expectations;
- requires a formal system of measuring customer satisfaction;
- gives a more aggressive definition of corrective and preventive action;
- requires a formal policy on continuous improvement;
- is in line with other management systems.

4. The Balance Scorecard

Realizing the need of an integrated management system that would incorporate both traditional quantitative and more abstract qualitative performance measures, Kaplan and Norton [16] developed the concept of the Balanced Scorecard (BSC), Its aim is to present management with a concise summary of the key success factors of a business, and to facilitate the alignment of business operations with the overall strategy. It '…provides a medium to translate the vision into a clear set of objectives. These objectives are then further translated into a system of performance measurements that effectively communicate a powerful, forward-looking, strategic focus to the entire organization'([32]). The primary purpose of in introducing Balanced Scorecard is to overcome the time-consuming activity of analyzing data by top managers instead of making decisions and also to overcome the bias of existing management information towards financial measures.

The balanced scorecard (BSC) is a strategic performance management tool for measuring whether the smaller-scale operational activities of a company are aligned with its larger-scale objectives in terms of vision and strategy.

By focusing not only on financial outcomes but also on the operational, marketing and developmental inputs to these, the Balanced Scorecard helps managers to provide a larger view of a business, which in turn helps organizations act in their best long-term interests.

The original Balanced Scorecard design identified four perspectives; namely, the financial perspective, the customer perspective, the internal-business-process perspective, and the learning and growth perspective. The perspectives represent three of the major stakeholders of the business (shareholders, customers and employees), thereby ensuring that a holistic view of the organization is used for strategic reflection and implementation [11].

The financial perspective represents the long-term objectives of the company. This is the main reason for establishing companies and most replies to other perspectives by the measurable amounts. The measures chosen will represent the relevant stage in the product or service life-cycle and are summarized by Kaplan and Norton (1996) as rapid growth, sustain and harvest. The

financial objectives for the growth stage will be largely based on sales volumes, existing and new customer relationships and process development. The sustain stage, on the other hand, will be represented by measures analyzing return on investment such as return on capital employed, discounted cash flow and perhaps economic value added. Finally, the harvest stage will be based on cash flow analysis with measures such as payback periods and revenue volume [11].

The customer perspective consists of measures relating to the most desired (i.e. the most profitable) customer groups. We should find our customers that we are responsible to respond to them and find out their requirements. It will include several standard measures such as customer satisfaction and customer retention, market share, customer value and customer profitability.

The internal-business process perspective focuses on the internal processes required in order for the company to excel at providing the value expected by the customers both productively and efficiently and includes both short-term and long-term objectives. This process must be designed in response to financial and customer perspectives.

The learning and growth perspective focuses on internal skills and capabilities in order to align them to the strategic goals of the organization. The Balanced Scorecard process will often identify gaps between the required and existing skills and capabilities. Using it to identify strategic initiatives and related measures, these gaps can then be addressed and closed by initiatives such as staff training and development [11].

5. Research Methodology

This case study was carried out on the indicators used by five gas treating company in the National Iranian Gas Company with the specification listed in Table 1, in order to monitor the performance of their quality systems with the aim of determining how far these could be constituted as a balanced scorecard.

The companies were selected to encompass various quality systems used within their internal process, and were judged to be at the forefront of quality assurance with considerable experience of the gas industry. The criteria for the selection of the companies were:

- They must have had ISO9001:2000 certification in the company for at least three years.
- They should have a genuine interest in quality issues, as evidenced by, e.g. active participation in conferences or debates
- They should be able to show a quality plan for their processes

The project was limited to companies in gas treating plants within the gas production sector, and among the companies, five companies out of eight gas treating plants were represented. These categories were judged to represent the construction process.

Table 1
The Profile of Gas Treating Companies under Study

Gas Treating Plant	Number of Employees	Gas Production (MMSCM/y)	Condensate Production (MMCM/y)	Sulfur Production (Tones/y)	LPG Production (Tones/y)
1	770	12206	11265	508418	0
2	655	2322	0	0	0
3	1105	17100	4472220	99138	0
4	908	32732	2087154	0	17001
5	327	5464	583265	0	31899

In this research, we use correlation study based on statistical survey for achieving our results. Initially, we introduced our ISO 9001:2000 hypothesis (our research assumptions) based on the Balanced Scorecard approach and then we used statistical methods for explaining the companies' situation after implementing ISO 9001:2000 based on the questionnaire completed by the expert respondents.

5.1. Research Hypothesis

5.1.1 Financial Perspective

a. If the ISO 9001:2000 standards implement correctly, then the final profit must be improved.
b. If the ISO 9001:2000 standards implement correctly, then the material wastes must decrease.
c. If the ISO 9001:2000 standards implement correctly, then the products' prices must decrease.
d. If the ISO 9001:2000 standards implement correctly, then all the unconformities were registered and all the attempts was done to eliminate it.
e. If the ISO 9001:2000 standards implement correctly, then the planning method for improving the processes must be improved.
f. If the ISO 9001:2000 standards implement correctly, then the evaluation of the internal and external processes must show the good performance.

5.1.2 Internal-Business Process Perspective

a. If the ISO 9001:2000 standards implement correctly, then the organization's current jobs must become easier.

b. If the ISO 9001:2000 standards implement correctly, then all the organization's activities must be based on the procedures.
c. If the ISO 9001:2000 standards implement correctly, then the CEO's satisfactions about their employees must be increased.

5.1.3 Customer Perspective

a. If the ISO 9001:2000 standards implement correctly, then the customers' complaints from product's failure must be decreased.
b. If the ISO 9001:2000 standards implement correctly, then the customers' satisfaction about the product's quantity will be increased.
c. If the ISO 9001:2000 standards implement correctly, then the customers' dissatisfaction and problems about the company products must be considered.

5.1.4 Learning and growth perspective

a. If the ISO 9001:2000 standards implement correctly, then the average learning per person hour will be increased.
b. If the ISO 9001:2000 standards implement correctly, then the employees' satisfaction rate will be increased.
c. If the ISO 9001:2000 standards implement correctly, then the employees' knowledge about the organizations' missions, vision and strategies will be increased.

5.2. Statistical Populations and Samples

Since the population size is too large, we used sampling techniques. The sample size based on the Cochran's formula will be as follows:

$$n = \frac{\frac{t^2 pq}{d^2}}{1 + \frac{1}{N}\left(\frac{t^2 pq}{d^2} - 1\right)} \quad (1)$$

N is population statistic, d is Confidence Interval, t is confidence coefficient, p is contingency and $q = 1 - p$.

Based on the aforementioned formula, our sample must be 356.21 samples and we considered 360 samples, and as far as the organizations' employee charts are similar we divided these samples equally and we administered 72 questionnaires to the employers of each company. The methodology of this research is summarized in Figure 2.

5.3 Statistical Tests

Inferential statistical tests including confidence interval for population mean using z, confidence interval for population mean using t and Analysis of Variance (ANOVA) were used for probing the hypothesis based on the Balanced Scorecard of ISO 9001:2000.

5.4. Validity and Reliability

To estimate validity of our questionnaire, we used Delphi method and brainstorming for designing the questions. The reliability of the questionnaire was estimated using Cronbach's Alpha and the following index was observed:

Table 2
Reliability Statistics

Cronbach's Alpha	N of Questions
0.854	37

5.5. Analysis

5.5.1 T-Test for four Balanced Scorecard Perspectives

At the first phase, we considered four perspectives of Balanced Scorecard based on the T-Test as indicated in Tables 3 and 4 below.

Table 3
One sample Statistic

	Number of Samples	Mean	Standard Deviation	Deviation from Mean
Customer perspective	360	1.92	0.52	0.03
Internal-business process perspective	360	2.01	0.34	0.02
financial perspective	360	2.03	0.58	0.03
Learning and growth perspective	360	2.15	0.38	0.02

Table 4
One Sample Signed-rank Test

	Test Value = 0					
	T	Degree of freedom	Sig (2-tailed)	Deviation from Mean	95% Mean Confidence Interval	
					Low	High
Customer perspective	70.34	359	0.000	1.92	1.87	1.98
Internal-business process perspective	111.59	359	0.000	2.01	1.98	2.05
financial perspective	66.76	359	0.000	2.03	1.97	2.09
Learning and growth perspective	108.35	359	0.000	2.15	2.11	2.19

Then we considered four Balanced Scorecard perspectives one by one based on the Analysis of Variance (ANOVA) after implementing ISO 9001:2000

5.5.2. Analysis of Variance of Customer Perspective

An ANOVA test was run to explore the impact of ISO 9001:2000 on companies under study.

Table 5
Customer Perspective Descriptive Test

	Sample	Mean	Std.	St. Error	95% Mean Confidence Interval		Min	Max
					Low	High		
1	72	2.082	0.46	0.05	1.98	2.189	1.13	3.00
2	72	1.667	0.31	0.04	1.59	1.741	1.25	2.25
3	72	2.040	0.52	0.06	1.92	2.161	1.13	3.38
4	72	1.793	0.53	0.06	1.67	1.918	1.13	3.13
5	72	2.024	0.61	0.07	1.88	2.168	1.13	3.63
Total	360	1.921	0.52	0.03	1.87	1.975	1.13	3.63

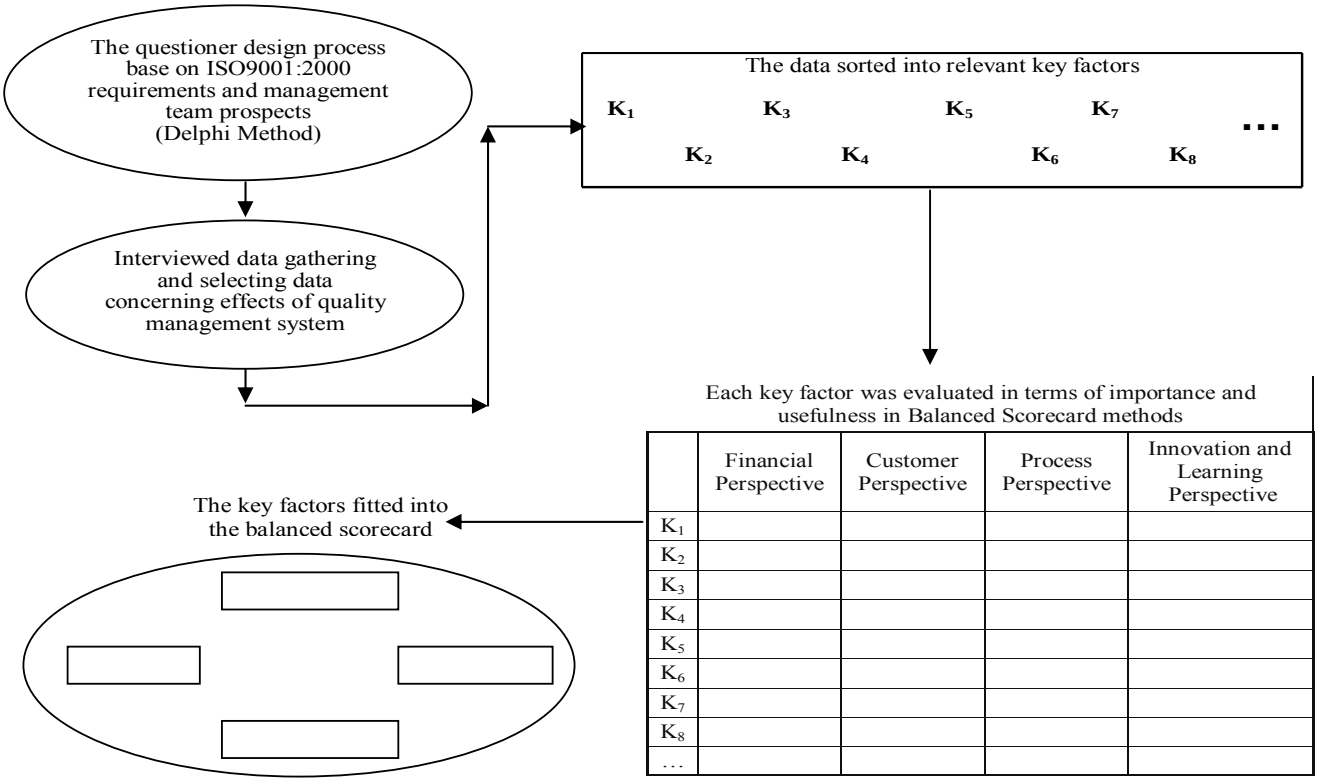

Figure 2: The BSC Performance Evaluation Methodology of ISO9001:2000 Quality Management System in Brief

Table 6
Customer Perspective Homogeneity Test

Levene Statistic	Df1	Df2	Sig(.P)
5.077	4	355	0.001

Table 7
Customer Perspective ANOVA

	Sum of Squares	df	Mean Square	F	Sig(.P)
Treatment	9.437	4	2.368	2.967	0.000
Errors	86.931	355	0.245		
Total	96.404	359			

As Table 7 depicts, error percent is equal to 0.000 and as far as this amount is less than 0.05, the amount of *F* is meaningful that is equal to 9.672. Based on the *P* amount, it can be concluded that there is a statistically meaningful difference between the Means.

5.5.3. Analysis of Variance of Internal-business process Perspective

An ANOVA test was used to find out the impact of ISO 9001:2000 on companies under study.

Table 8
Internal-business Process Perspective Descriptive Test

	Sample	Mean	Std.	St. Error	95% Mean Confidence Interval		Min	Max
					Low	High		
1	72	1.98	0.28	0.033	1.92	1.05	1.44	2.56
2	72	1.92	0.34	0.040	1.84	2.00	1.22	2.33
3	72	2.13	0.34	0.040	2.05	2.21	1.67	3.00
4	72	2.06	0.33	0.039	1.98	2.13	1.44	2.56
5	72	1.97	0.38	0.044	1.88	2.06	1.22	2.56
Total	360	2.01	0.34	0.018	1.98	2.05	1.22	3.00

Table 9
Internal-business process Perspective Homogeneity Test

Levene Statistic	Df1	Df2	Sig(.P)
1.672	4	355	0.156

Table 10
Internal-business process Perspective ANOVA

	Sum of Squares	Df	Mean Square	F	Sig(.P)
Treatment	2.006	4	0.501		
Errors	39.974	355	0.113	4.454	0.002
Total	41.980	359			

As Table 10 indicates, error percent is equal to 0.000 and as far as this amount is less than 0.05, the amount of *F* is meaningful that is equal to 4.454. Based on the *P* amount it can be concluded that there is a meaningful difference between the Means.

5.5.4. Analysis of Variance of financial Perspective

An ANOVA test was used to find out the impact of ISO 9001:2000 on companies under study.
As presented in Table 13, error percent is equal to 0.000 and as far as this amount is less than 0.05, the amount of *F* is meaningful that is equal to 8.714. Based on the *P*

amount, it can be concluded that there is a meaningful difference between the Means

Table 11
Financial Perspective Descriptive Test

	Sample	Mean	Std.	St. Error	95% Mean Confidence Interval		Min	Max
					Low	High		
1	72	2.04	0.44	0.052	1.94	2.15	1.00	2.67
2	72	1.78	0.42	0.055	1.68	1.88	1.17	2.83
3	72	2.28	0.47	0.055	2.17	2.40	1.50	3.00
4	72	1.93	0.66	0.078	1.77	2.08	1.17	3.17
5	72	2.13	0.72	0.084	1.96	2.30	1.17	4.00
Total	360	2.03	0.58	0.030	1.97	2.09	1.00	4.00

Table 12
Financial Perspective Homogeneity Test

Levene Statistic	Df1	Df2	Sig(.P)
12.911	4	355	0.000

Table 13
Financial Perspective ANOVA

	Sum of Squares	df	Mean Square	F	Sig(.P)
Treatment	10.704	4	2.676		
Errors	109.012	355	0.307	8.714	0.000
Total	119.716	359			

5.5.5. Analysis of Variance of Learning and Growth Perspective

An ANOVA test was used to probe the impact of ISO 9001:2000 on companies under study.

Table 14
Descriptive Statistics for Learning and Growth Perspective

	Sample	Mean	Std.	St. Error	95% Mean Confidence Interval		Min	Max
					Low	High		
1	72	2.29	0.29	0.034	2.22	2.36	1.63	2.75
2	72	2.00	0.36	0.042	1.92	2.08	1.38	2.50
3	72	2.22	0.31	0.036	2.15	2.29	1.63	2.88
4	72	2.25	0.29	0.034	2.18	2.32	1.63	2.88
5	72	2.00	0.50	0.059	1.88	2.11	1.25	2.88
Total	360	2.15	0.38	0.020	2.11	2.19	1.25	2.88

Table 15
Learning and Growth Perspective Homogeneity Test

Levene Statistic	Df1	Df2	Sig(.P)
15.241	4	355	0.000

Table16
Learning and Growth Perspective ANOVA

	Sum of quares	df	Mean quare	F	Sig(.P)
Treatment	5.755	4	1.439		
Errors	45.154	355	0.127	11.311	0.000
Total	50.909	359			

As it can be seen in Table 16, error percent is equal to 0.000 and as far as this amount is less than 0.05, the amount of *F* is meaningful that is equal to 11.311. Based on the *P* amount it can be concluded that there is a meaningful difference between the Means.

6. Results and Conclusions

The statistical results in brief confirm that:
- The Balanced Scorecard successfully measured the performance of quality systems in studied companies.
- The efficiency of the internal process was increased as well;
- The innovation and learning perspective is somehow neglected in these companies and the personnel did not have enough motivation in their jobs.
- Most of the companies believe that that productivity increases after establishing quality management system. This implies that investment in quality systems increase organizational performance.
- In most of the companies under study the personnel were interested in knowing their company strategy; so establishing Balanced Scorecard totally was highlighted.
- The companies did not consider any feedback system to elicit suggestions from the customers.

The evaluation of all the five companies under study based on the Balanced Scorecard attested to the generalization that the ISO 9001:2000 improved all of the companies in four perspectives. Ranking of this five companies based on the BSC criteria will be as follows:
- Ranking the companies based on the Learning and Growth Perspective will be as 3,5,2,1 and 4.
- Ranking the companies based on the Financial Perspective will be as 2,4,3,5 and 1.
- Ranking the companies based on the Internal-business process Perspective will be as 2,5,3,4 and 1.
- Ranking the companies based on the Customer Perspective will be as 3,2,4,1 and 5.

In addition, after presenting the results for management team of these companies, we concluded from management review meetings (which were common between these companies):
- Lack of information about products nonconformity and customers in these companies (customer's feedback system) was identified. This system must be launched in near future and also it was suggested that the information system must mirror the customer's quality requests for better products quality as the main ISO 9000 requisition.
- It was suggested that the balanced scorecard method and its structure fully implemented to the studied companies in order to achieve the better results and real performance of different quality management systems which was implemented before.
- The financial factors evaluation of the companies and personnel performance (which are common between governmental sector) were not evaluated as satisfactory by the management team of these companies. Also, they commented that non financial factors must be taken into account as BSC method emphasizes,
- Due to lack of training standards for the jobs of gas treating sectors, the current training schedules did not meet the needs of the personnel. Hence, these standards must be prepared and implemented as soon as possible.

Finally, we propose that this standard will be useful for other organizations that are active in the same market. To head for fostering their prospects, they should reconsider the implications derived from this research.

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