



An empirical study of the motives and benefits of ISO 9000 certification: the UAE experience

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Abstract

Purpose – The aim of the paper is to analyze the different aspects of the motives and benefits of certified ISO 9001: 2000 companies in the United Arab Emirates (UAE).

Design/methodology/approach – A total of 900 certified UAE companies were surveyed in April 2004 in UAE. The response rate was equal to 23.2 percent.

Findings – The paper finds that certified companies were more concerned by internal reasons like improving processes or products than by external reasons like pressure from customers or imitation of competitors. In addition, the certification process had generated more internal benefits than external ones.

Research limitations/implications – These findings may indicate that the surveyed firms will sustain their quality efforts as continuous improvement is one of the cornerstones of ISO 9001: 2000 standard. In April 2004, when this survey was conducted, the number of certified companies listed in Dubai or in Abu Dhabi Stock Exchanges was still small. This limited the analysis of the certification's financial benefits.

Originality/value – This is one of the first papers trying to analyze the motives and benefits of ISO 9001: 2000 certified companies in the UAE. The selection of the motives and benefits were validated through statistical analysis and the relationship between expected and perceived benefits was discussed.

Keywords ISO 9000 series, Companies, United Arab Emirates

Paper type Research paper

Introduction

The ISO 9000 series of quality standards have been available in the marketplace for nearly two decades. They serve as guidelines for any organization willing to establish or improve its quality management system (QMS). Usually, when a company obtains the ISO 9001: 2000 certificate, its business partners will be more confident in its QMS (Stevenson and Barnes, 2001). Actually, the ISO 9000 standards are adopted in 154 countries and more than 670 000 ISO 9001: 2000 certificates have been issued worldwide (ISO, 2004).

Some researchers investigated the “pros” and “cons” of the certification process (Stevenson and Barnes, 2001) or how the ISO 9000 helped companies in their total quality management (TQM) journey (Magd and Curry, 2003; Sun, 1999). Other authors

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studied the financial performances of the certified firms (Chow-Chua *et al.*, 2003; Häversjö, 2000; Tsekouras *et al.*, 2002; Wayhan *et al.*, 2002).

van der Wiele *et al.* (2005) provided an interesting classification of the research on ISO 9000. They identified six major issues, namely:

- (1) the relationship between ISO 9000 and TQM;
- (2) perceptions about the benefits of ISO 9000;
- (3) the relationship between ISO 9000 and organizational improvement;
- (4) the usefulness of ISO 9000 for different sizes and types of organizations;
- (5) the long-term effects of ISO 9000; and
- (6) the motivation to implement ISO 9000.

Certain researchers investigated the state of ISO 9001: 2000 certification in the Arab world. For example, Mezher (2000) studied the transition of 30 Lebanese firms from ISO 9000 certification to TQM. A total of 32 Saudi manufacturing firms were surveyed by Mezher and Ramadan (1999). They analyzed the costs and benefits linked with the certification process. The main benefits perceived by Saudi firms were associated with the improvement of customer service and firm's efficiency. Similar results were found by Magd *et al.* (2003). Egyptian companies were studied by Magd and Curry (2003). The surveyed firms showed more interest towards internal operational benefits like improvement in documentation or in the efficiency of the quality system. However, some of these studies are just descriptive and do not include an in depth statistical analysis.

We have noticed that among the Arab countries, the United Arab Emirates (UAE) has the highest number of certified companies (about 900 certificates according to "The ISO survey – 2004" (ISO, 2004)). The remaining top four positions are held by Egypt (810 certificates), Saudi Arabia (394 certificates), and Morocco (296 certificates). The UAE economy is heavily dependent on oil and natural gas export (it has about 10 percent of world oil reserves) and recently diversified its economy into the manufacturing and services sectors. Dubai has become a Middle East hub for tourism and trade businesses. However, the UAE has not been the subject of important research regarding the ISO 9000 standards. This gave impetus to the following research questions:

- (1) What are the motivational and beneficial aspects of ISO 9001: 2000 certification in UAE?
- (2) What are the relationships between these two aspects?

Thus, it would be interesting to conduct an empirical study on the motives and benefits of ISO 9000 certified companies in UAE. The contributions of this study to the body of knowledge related to ISO 9000 research are as follows:

- An extensive review of the different motives and benefits that are linked with ISO 9001: 2000 certification.
- An empirical study of the motives and benefits of the certified UAE organizations, where statistical analyses were performed (reliability and validity tests, *t*-test of the means, principal components analysis and correlation analysis).

- Certain motives can be considered as “expected benefits”. Then, the gaps between these expected benefits and their associated “perceived” benefits were analyzed.

The remaining part of the paper will be as follows: first, we review the previous literature on motives and benefits of ISO 9001: 2000 certification. Next, we present the research methodology followed by the survey results. After discussing the main findings of the empirical research, we finally conclude by providing useful recommendations for practitioners.

Motives for seeking certification

A high number of reasons motivated different organizations for obtaining the ISO 9001: 2000 certificate or its predecessors (ISO 9001/9002/9003: 1994) (see Table I).

Jones *et al.* (1997) studied the reasons of certified Australian companies. They divided them into three categories: “developmental”, “non-developmental” and “mixed”. Companies, which belonged to the first category, were motivated by the internal benefits obtained from the certification process like the improvement of the “company’s internal processes” or “business performances”, whereas companies belonging to the “non-developmental” category were pushed towards certification by the market forces (explicit demand of important customers or necessary condition to bid for government tenders). The “mixed” category regrouped companies having both types of reasons. In fact, the developmental reasons are synonymous with the internal reasons, and the non-developmental reasons are synonymous with the external ones. Out of the 272 companies that replied to their mail questionnaire, only one company in every seven pursued the certification for developmental reasons. When examining the reasons of certified Malaysian companies, Yahya and Goh (2001) adopted the same approach of Jones *et al.* (1997). However, they found no dominant category between the companies studied. Escanciano *et al.* (2001) adopted the internal-external classification of Vloeberghs and Bellens (1996) and found that Spanish companies were more motivated to pursue the certification for internal reasons rather than for external ones.

In this research, and after an extensive review of previous literature, we selected 19 common reasons that could motivate UAE companies in seeking ISO 9001: 2000 certification. We note that the redundant and open to interpretation type of motivational statements were eliminated from the selection. Furthermore, the selected motives were classified into two groups: internal group and external group. The internal motives are synonymous with the internal forces that are pushing the organization in seeking ISO 9000. These forces could be either associated with operational performances (like improving the quality system of the organization) or with managerial performances (like improving communication between the organization’ employees), whereas the external motives refer to the motives that are associated with the company’s external environment. We mean by external environment all those elements outside an organization that have potential to affect all or part of it (like customers, competitors, government and suppliers).

Benefits of certification

Different authors studied the benefits of ISO 9001: 2000 certification from the viewpoint of quantitative financial performance (Chow-Chua *et al.*, 2003; Häversjö,

Number	Reasons	Type ^a	Sources
1	Top management decision	I	Brown <i>et al.</i> (1998), Carlsson and Carlsson (1996), Escanciano <i>et al.</i> (2001)
2	Improving product and/or service quality	I	Buttle (1997), Carlsson and Carlsson (1996), Ebrahimpour <i>et al.</i> (1997), Escanciano <i>et al.</i> (2001), Llopis and Tari (2003), Poksinska <i>et al.</i> (2002), Singels <i>et al.</i> (2001)
3	Improving processes and procedures	I	Bryde and Slocock (1998), Carlsson and Carlsson (1996), Ebrahimpour <i>et al.</i> (1997), Escanciano <i>et al.</i> (2001), Jones <i>et al.</i> (1997), Krasachol <i>et al.</i> (1998), Lee (1998)
4	Improving productivity and/or efficiency	I	Brown <i>et al.</i> (1998), Bryde and Slocock (1998), Carlsson and Carlsson (1996), Llopis and Tari (2003)
5	Reducing incidents, rejections and complaints	I	Carlsson and Carlsson (1996), Llopis and Tari (2003)
6	A step towards total quality management	I	Brown <i>et al.</i> (1998), Bryde and Slocock (1998), Carlsson and Carlsson (1996), Escanciano <i>et al.</i> (2001), Krasachol <i>et al.</i> (1998), Llopis and Tari (2003)
7	Use it as a basis for internal costs reduction	I	Buttle (1997), Carlsson and Carlsson (1996), Escanciano <i>et al.</i> (2001)
8	Improving communication within the organization	I	Ebrahimpour <i>et al.</i> (1997)
9	Improving relationships between employees and management	I	Ebrahimpour <i>et al.</i> (1997)
10	Use it as a promotional and/or marketing tool	E	Brown <i>et al.</i> (1998), Escanciano <i>et al.</i> (2001), Jones <i>et al.</i> (1997), Singels <i>et al.</i> (2001)
11	Maintaining and/or increasing market share	E	Bryde and Slocock (1998), Carlsson and Carlsson (1996), Escanciano <i>et al.</i> (2001), Krasachol <i>et al.</i> (1998), Singels <i>et al.</i> (2001)
12	Demand and/or pressure from customers	E	Bryde and Slocock (1998), Carlsson and Carlsson (1996), Ebrahimpour <i>et al.</i> (1997), Escanciano <i>et al.</i> (2001), Jones <i>et al.</i> (1997), Krasachol <i>et al.</i> (1998), Lee (1998), Singels <i>et al.</i> (2001)
13	Competitive advantage	E	Brown <i>et al.</i> (1998), Bryde and Slocock (1998), Carlsson and Carlsson (1996), Ebrahimpour <i>et al.</i> (1997), Escanciano <i>et al.</i> (2001), Jones <i>et al.</i> (1997), Krasachol <i>et al.</i> (1998), Lee (1998), Singels <i>et al.</i> (2001)
14	Requisite to compete in the sector	E	Brown <i>et al.</i> (1998), Escanciano <i>et al.</i> (2001), Jones <i>et al.</i> (1997), Lee (1998), Singels <i>et al.</i> (2001)
15	Our competitors are ISO 9001 certified	E	Ebrahimpour <i>et al.</i> (1997), Escanciano <i>et al.</i> (2001)
16	Direct entry to new market	E	Carlsson and Carlsson (1996), Escanciano <i>et al.</i> (2001), Singels <i>et al.</i> (2001)
17	Be role model to suppliers	E	Brown <i>et al.</i> (1998), Bryde and Slocock (1998)
18	Improving the organization's public image	E	Ebrahimpour <i>et al.</i> (1997), Escanciano <i>et al.</i> (2001), Jones <i>et al.</i> (1997)
19	Requested by the government	E	Carlsson and Carlsson (1996), Huarng <i>et al.</i> (1999), Singels <i>et al.</i> (2001)

Note: ^a E for external and I for internal

Table I.
Motives of ISO 9000
certification

2000; Tsekouras *et al.*, 2002; Wayhan *et al.*, 2002) or qualitative performances (Arauz and Suzuki, 2004; Brown *et al.*, 1998; Bryde and Slocock, 1998; Buttle, 1997; Chow-Chua *et al.*, 2003; Escanciano *et al.*, 2001; Huarng *et al.*, 1999; Jones *et al.*, 1997; Singels *et al.*, 2001). For example (Buttle, 1997) found that “improving efficiency”, “improving awareness of procedural problems” and “better management control” were the top three benefits perceived by the firms studied, followed by “using standard as a promotional tool” and “increasing customer satisfaction”. (Escanciano *et al.*, 2001) found similar results where “better understanding of processes/responsibilities” and “company image in the market improved” were considered as the most important benefits.

Similarly to the motives items list, each benefit item was classified according to its internal or external most likely effect. Table II lists all the 20 benefits items collected from different articles.

Research methodology

The collection of data was done through a questionnaire survey. The latter was mailed to 900 UAE certified companies nationwide, in the beginning of April 2004, accompanied with a return postage envelope. The companies' addresses were collected from different sources namely: Abu Dhabi Chamber of Commerce and Industry, *Gulf Oilfield Directory 2003* published by Arabian Publications (a publisher of professional directories in UAE) and *ISO Master Guide 2004-2005* published by Spear Publishing (a marketing consulting company in Dubai). The list included companies operating in different fields such as oil and gas, telecommunications, construction, information technology, manufacturing and government agencies. Apart from the general demographic questions that were asked (like size, field of operation, ownership, etc.), the questionnaire survey included two sets of questions. One set is related to the motivational aspects of the ISO 9001: 2000 certification and the second is related to the benefits aspects. These questions were adapted from previous literature on the subject as detailed in the preceding section.

A study group composed by three quality managers and two quality consultants, who have an extensive experience in quality management within UAE firms, helped us review the survey. In the light of their comments, the questionnaire was refined to better adapt with the local culture. Evidently, the internal-external classification of the question statements was not made apparent to the respondent. The questionnaire was directly sent to the quality managers of the companies surveyed because it was an important recommendation from the study group. Besides, many authors in similar studies selected the quality manager as the most suitable person to answer their questionnaires as he/she is usually the key person in coordinating the certification process and is supposed to have had an extensive training in quality management (Carlsson and Carlsson, 1996; Escanciano *et al.*, 2001; Llopis and Tari, 2003). The Likert scale of five points was used for evaluating every question statement. The scale was assigned values from one to five to indicate agreement or disagreement with the statement.

Out of 900 sent questionnaires, 220 were received. Among the 220 received questionnaires, eleven were eliminated from subsequent analysis as they had incomplete responses. Thus, the research is based on the data provided by 209 respondents, which leads to 23.2 percent response rate.

Number	Benefits	Type ^a	Sources
1	Improved product and/or service quality	I	Arauz and Suzuki (2004), Brown <i>et al.</i> (1998), Escanciano <i>et al.</i> (2001), Singels <i>et al.</i> (2001)
2	Reduction in incidents, rejections and complaints	I	Arauz and Suzuki (2004), and Escanciano <i>et al.</i> (2001)
3	Increased productivity and/or efficiency	I	Buttle (1997), Dick (2000), Gotzamani and Tsiotras (2002), Häversjö (2000), Jones <i>et al.</i> (1997), Lee (1998), Santos and Escanciano (2002)
4	Reduced internal costs	I	Arauz and Suzuki (2004), Buttle (1997), Escanciano <i>et al.</i> (2001)
5	Improved profitability	I	Arauz and Suzuki (2004), Buttle (1997), Dick (2000), Gotzamani and Tsiotras (2002), Häversjö (2000), Jones <i>et al.</i> (1997), Lee (1998), Santos and Escanciano (2002)
6	Increased workforce motivation and retention	I	Buttle (1997), Brown <i>et al.</i> (1998), Escanciano <i>et al.</i> (2001), Gotzamani and Tsiotras (2002), McLachlan (1996)
7	Employees become more quality aware	I	Brown <i>et al.</i> (1998), Chow-Chua <i>et al.</i> (2003), Dick (2000), Quazi and Padibjo (1998), Tsiotras and Gotzamani (1996)
8	Improved processes and procedures	I	Arauz and Suzuki (2004), Chow-Chua <i>et al.</i> (2003), Poksinska <i>et al.</i> (2002)
9	Elimination of redundancy or unnecessary work	I	Chow-Chua <i>et al.</i> (2003), McLachlan (1996)
10	Better working environment	I	Escanciano <i>et al.</i> (2001)
11	Better customer service	I	Arauz and Suzuki (2004), Buttle (1997)
12	Increased customer satisfaction	E	Arauz and Suzuki (2004), Buttle (1997), Lee (1998), McLachlan (1996), Gotzamani and Tsiotras (2002), Quazi and Padibjo (1998)
13	Reduction in the number of customer audits	E	Buttle (1997), Escanciano <i>et al.</i> (2001)
14	Expansion to international markets	E	Chow-Chua <i>et al.</i> (2003), Brown <i>et al.</i> (1998), Buttle (1997)
15	Greater competitive advantage	E	Dick (2000), Gotzamani and Tsiotras (2002), McLachlan (1996), Quazi and Padibjo (1998)
16	Effective promotional and/or marketing tool	E	Buttle (1997)
17	Improved market share	E	Brown <i>et al.</i> (1998), Dick (2000), Jones <i>et al.</i> (1997), McLachlan (1996), Santos and Escanciano (2002)
18	Suppliers' quality improved	E	Escanciano <i>et al.</i> (2001)
19	Established and/or improved mutual cooperation with suppliers	E	Arauz and Suzuki (2004), Escanciano <i>et al.</i> (2001)
20	Organization's image in the market improved	E	Chow-Chua <i>et al.</i> (2003), Tsiotras and Gotzamani (1996), Vloeberghs and Bellens (1996)

Note: ^a E for external and I for internal

Table II.
Benefits of ISO 9000
certification

Survey results

Table III presents a descriptive statistical analysis of the companies' demographic information. We note that most of the responding companies were from the private sector and a great number of them have either a small size or a medium size. In addition, the majority of the surveyed companies are operating in the service sector. Most of the respondents have a long working experience in the quality field. We note that 108 surveyed companies have acquired the ISO 9001: 1994 or ISO 9002:1994 certificate then acquired the ISO 9001: 2000 certificate, whereas 101 organizations are newly accredited.

The data analysis uses reliability tests, validity tests, *t*-test of the means, factor analysis and correlation analysis. All statistical analyses were performed by using SPSS (Release 12.0.0).

Reliability and validity tests

The internal consistency of a group of measurement items refers to the degree to which items in the group are homogenous. In this study, the internal consistency is estimated by using the Cronbach's alpha reliability coefficient. The Cronbach's alpha for the 19 motives items is equal to 0.823 (higher than 0.6), which suggests a satisfactory reliability (Malhotra, 2004). Moreover, the previous Cronbach's alpha was recalculated after dropping a specific item but its value has not increased, except for the "Requested by the government" item where the reliability coefficient became equal to 0.831.

Description	Frequency
<i>Company size</i>	
Small (no. of employees < 100)	78
Medium > 100 no. of employees < 500	77
Large > 500 no. of employees < 2,000	40
Very large (no. of employees > 2,000)	14
<i>Ownership</i>	
Private	177
Government	15
Joint	17
<i>Activities</i>	
Services	117
Manufacturing	89
Oil and gas	3
<i>Respondents experience</i>	
< 2 years	15
> 2 years ... < 5 years	47
> 5 years	134
Missing	13
<i>No. of companies that shifted from</i>	
ISO 9001:94 to ISO 9001:2000	83
ISO 9002:94 to ISO 9001:2000	25
Newly accredited	101

Table III.
Description of
respondents

The Cronbach's alpha for the 20 benefits items equals 0.901 (higher than 0.6). An internal consistency analysis was performed but has not led to a higher Cronbach's alpha value; hence all benefits items are considered important.

The validity analysis of the questionnaire instrument refers to the extent to which it measures what it was intended to measure. In this study, two different types of validity are considered: content validity and construct validity.

The first one, also called face validity, depends on to what extent the researchers developed the measurement items to cover the content domain of the variable being measured. Usually, it is subjectively judged by the researchers. As earlier presented in Tables I and II, the motives and benefits items were carefully selected from an extensive review of literature. Furthermore, the validity of the lists of motives and benefits statements was confirmed by a panel of quality managers and consultants during the preliminary testing stage.

The construct validity refers to what extent the questionnaire instrument measures a theoretical construct or trait it was supposed to measure. Some authors adopted the internal-external classification prior to their statistical analyses (Jones *et al.*, 1997; Escanciano *et al.*, 2001; Yahya and Goh, 2001; Vloeberghs and Bellens, 1996). Others used it when performing a principal component analysis (Arauz and Suzuki, 2004; Brown *et al.*, 1998; Bryde and Slocock, 1998; Buttle, 1997; Huarng *et al.*, 1999; Llopis and Tari, 2003; Singels *et al.*, 2001).

So, in this research, the classification of motives and benefits items into internal and external categories is first adopted as a theoretical trait (Tables I and II). Then, a confirmatory factorial analysis (principal components with varimax rotation) is conducted. We fix the number of factors to two then we check if each motive or benefit statement belongs to its initial category. In other words, an internal motive statement should have a high loading on the internal factor and have a low loading on the external factor. Tables IV and V confirm the construct-validity of the internal-external aspects of the motives and benefits items, presented in Tables II and III, respectively.

However, in Table V, the benefit statement (increased customer satisfaction) should have loaded higher on the external factor. This result could be explained by the fact that the respondents have considered it as an internal benefit item; nevertheless, the remaining benefit items followed the predicted classification of Table II.

The low cumulative variance explained in both confirmatory factorial analyses (40.61 percent and 47.26 percent) suggests an increase in the number of factors as this will be more suitable from a statistical point of view. This issue will be treated later in the factorial analysis section.

Analysis of the means

In this section, we are interested in ranking the motives and benefits items according to their mean value. A *t*-test was performed on the respondents' data in order to determine the significant items. Since a five-point Likert type scale was used (1 = strongly disagree, 5 = strongly agree), therefore the null hypothesis (*H*₀) is that the average score of motivation is less or equal to three. The alternative hypothesis (*H*_a) is that it is greater than three. The confidence level is set at 95 percent, thus $\alpha = 0.05$. The results of the *t*-test for the question statements corresponding to the motivational aspects are described in Table VI.

Table IV.
Construct-validity for the
motives items

Motives items	Component	
	Internal	External
Improving productivity and/or efficiency	<i>0.782</i>	-0.039
Reducing incidents, rejections and complaints	<i>0.701</i>	0.102
Use it as a basis for internal costs reduction	<i>0.694</i>	0.188
Improving processes and procedures	<i>0.684</i>	-0.046
Improving product and/or service quality	<i>0.683</i>	-0.005
Improving communication within the organization	<i>0.655</i>	0.255
Improving relationships between employees and management	<i>0.642</i>	0.136
A step towards total quality management	<i>0.469</i>	-0.044
Top management decision	<i>0.213</i>	0.166
Requisite to compete in the sector	0.083	<i>0.772</i>
Our competitors are ISO 9001 certified	0.004	<i>0.732</i>
Demand and/or pressure from customers	-0.015	<i>0.696</i>
Direct entry to new market	0.048	<i>0.669</i>
Competitive advantage	0.158	<i>0.652</i>
Use it as a promotional and/or marketing tool	0.074	<i>0.630</i>
Improving the organization's public image	0.132	<i>0.491</i>
Maintaining and/or increasing market share	0.219	<i>0.480</i>
Be role model to suppliers	0.395	<i>0.448</i>
Requested by the UAE government	-0.133	<i>0.300</i>
Eigenvalue	3.90	3.81
Cumulative variance explained (%)	20.55	40.61

Table V.
Construct-validity for the
benefits items

Benefits items	Component	
	Internal	External
Increased productivity and/or efficiency	<i>0.767</i>	0.076
Elimination of redundancy or unnecessary work	<i>0.709</i>	0.150
Reduced internal costs	<i>0.692</i>	0.192
Improved product and/or service quality	<i>0.662</i>	0.078
Improved processes and procedures	<i>0.644</i>	0.104
Better customer service	<i>0.643</i>	0.121
Better working environment	<i>0.636</i>	0.171
Increased customer satisfaction	<i>0.615</i>	0.219
Reduction in incidents, rejections and complaints	<i>0.603</i>	0.189
Improved profitability	<i>0.601</i>	0.370
Employees become more quality aware	<i>0.566</i>	0.078
Increased workforce motivation and retention	<i>0.551</i>	0.297
Greater competitive advantage	0.228	<i>0.805</i>
Expansion to international markets	0.087	<i>0.799</i>
Improved market share	0.142	<i>0.709</i>
Effective promotional and/or marketing tool	0.004	<i>0.628</i>
Organization's image in the market improved	0.142	<i>0.614</i>
Suppliers' quality improved	0.416	<i>0.605</i>
Established and/or improved mutual cooperation with suppliers	0.468	<i>0.568</i>
Reduction in the number of customer audits	0.167	<i>0.522</i>
Eigenvalue	5.48	3.96
Cumulative variance explained (%)	27.43	47.26

Item name	Type	Mean	Rank	Std dev.	<i>t</i> -values
Top management decision	I	4.62	1	0.593	39.54 *
Improving processes and procedures	I	4.46	2	0.596	35.49 *
Improving product and/or service quality	I	4.39	3	0.657	30.63 *
Improving productivity and/or efficiency	I	4.16	4	0.778	21.52 *
Reducing incidents, rejections and complaints	I	4.13	5	0.777	21.01 *
Improving the organization's public image	E	4.05	6	0.813	18.63 *
A step towards total quality management	I	3.99	7	0.882	16.22 *
Use it as a promotional and/or marketing tool	E	3.99	8	0.912	15.62 *
Competitive advantage	E	3.78	9	0.995	11.33 *
Improving communication within the organization	I	3.75	10	0.825	13.08 *
Maintaining and/or increasing market share	E	3.65	11	0.919	10.24 *
Requisite to compete in the sector	E	3.59	12	1.115	7.69 *
Improving relationships between employees and management	I	3.46	13	0.843	7.95 *
Be role model to suppliers	E	3.43	14	1.008	6.17 *
Use it as a basis for internal costs reduction	I	3.26	15	0.904	4.13 *
Our competitors are ISO 9001 certified	E	3.17	16	1.139	2.18 *
Demand and/or pressure from customers	E	3.12	17	1.111	1.619
Direct entry to new market	E	2.84	18	1.066	-2.20 *
Requested by the government	E	2.17	19	1.028	-11.641 *

Note: * Indicates that the corresponding *p*-value is lower than 0.05

Table VI.
Motives

The motives items are listed in decreasing order by their mean score. All statements turned out to be significant at 95 percent confidence level, except for the “demand and/or pressure from customers” item. The most significant ones are “top management decision”, “improving processes and procedures”, and “improving product/service quality” showing a *t*-value of 39.54, 35.49 and 30.63, respectively. As shown in Table VI, the first five positions were occupied by internal motives. The first external motive, “improving the organization’s public image”, held the sixth position.

However, for the “Demand and/or pressure from customers” statement, we cannot reject the null hypothesis, in other words the respondents have not considered it as an important reason for seeking the ISO 9001: 2000 certification. The “Direct entry to new markets (like EU community)” presented a significant negative *t*-value. Hence, the usually advanced argument that firms seek the certification for accessing the European markets is not the case in UAE. The “Requested by the government” motive item scored the lowest mean value. In fact, it was included in the questionnaire for testing the consistency of the respondents’ answers (the UAE government does not impose on public or private organizations the possession of ISO 9001: 2000 certificate).

Table VII presents the mean, standard deviation and *t*-values results for the 20 benefit statements. The first four important benefits are associated with internal operational issues like processes, procedures and product/service quality. The internal benefit statements like “improved processes and procedures”, “employees become more quality aware” and “improved product and/or service quality” showed significant positive *t*-values. The “Reduction in the number of customer’s audits” benefit statement held the last position in Table VII.

Item name	Type	Mean	Rank	Std dev.	<i>t</i> -value
Improved processes and procedures	I	4.28	1	0.612	30.17*
Employees become more quality aware	I	4.20	2	0.584	29.60*
Improved product and/or service quality	I	4.16	3	0.664	25.19*
Better customer service	I	4.11	4	0.645	24.89*
Organization's image in the market improved	E	4.07	5	0.714	21.71*
Increased customer satisfaction	E	4.06	6	0.712	21.48*
Effective promotional and/or marketing tool	E	4.00	7	0.806	17.85*
Reduction in incidents, rejections and complaints	I	3.99	8	0.693	20.65*
Increased productivity and/or efficiency	I	3.79	9	0.774	14.73*
Better working environment	I	3.73	10	0.717	14.75*
Greater competitive advantage	E	3.71	11	0.907	11.28*
Elimination of redundancy or unnecessary work	I	3.60	12	0.815	10.60*
Improved market share	E	3.47	13	0.809	8.38*
Established and/or improved mutual cooperation with suppliers	E	3.45	14	0.796	8.25*
Suppliers' quality improved	E	3.45	15	0.860	7.64*
Improved profitability	I	3.39	16	0.772	7.35*
Increased workforce motivation and retention	I	3.36	17	0.786	6.69*
Reduced internal costs	I	3.34	18	0.835	5.96*
Expansion to international markets	E	3.22	19	1.092	2.91*
Reduction in the number of customer audits	E	3.09	20	0.972	1.28

Note: * Indicates that the corresponding *p*-value is lower than 0.05

Table VII.
Benefits

Expected and perceived benefits analysis

Certain similarities exist between Tables II and III items with respect to particular aspects of motives and benefits under study in this empirical research. For example, in Table II we identified "improving product and/or service quality" as a motive item and in Table III we identified the "improved product and/or service quality" as a benefit item. As the difference between the two statements is not only in the verbal context but also in how the respondents perceive the effect of ISO 9000 on the product and/or service quality, by consequence the two items can be classified as "expected" benefit and "perceived" benefit, respectively. In Table VIII we gathered nine pairs of expected and perceived benefits associated with ISO 9001: 2000 certification, then we analyzed their aggregate mean differences (expected-perceived). If the mean difference, for a certain pair of statements, had a significant negative value then the perceived benefit value exceeded the expected benefit value. Hence, the ISO 9001: 2000 certification led to a good quality surprise. In other words the respondents found an improvement or an amelioration in the statement studied. On the contrary, if the mean difference had a significant positive value then the ISO 9001: 2000 certification led to an unsatisfactory quality result.

In Table VIII, most of the significant mean differences were positive with a corresponding positive *t*-value like in pairs: 1, 2, 3, 4 and 6. Apparently, the respondents did not feel that, after acquiring the ISO 9001: 2000 certificate, their respective firms improved their productivity, processes, procedures and product quality. Except for pair 6, where the associated means are nearly equal to three, the mean values of the internally-oriented pairs (1, 2, 3 and 4) are greater or equal to four. Hence, the respondents still obtained a good outcome from the certification process.

Motive item – benefit item	Mean 1	Mean 2	Mean diff.	Std. error mean	t-value	Sig. (two-tailed)
Pair 1 (O) (Improving – increased) productivity and/or efficiency	4.16	3.79	0.368	0.051	7.238	0.000
Pair 2 (O) (Improving – improved) product and/or service quality	4.39	4.16	0.234	0.046	5.110	0.000
Pair 3 (O) (Improving – improved) processes and procedures	4.46	4.28	0.187	0.043	4.357	0.000
Pair 4 (O) (Reducing – reduction in) incidents, rejections and complaints	4.13	3.99	0.139	0.051	2.746	0.007
Pair 5 (O) Use it as a basis for internal costs reduction – reduced internal costs	3.26	3.34	-0.086	0.053	-1.636	0.103
Pair 6 (E) Maintaining and/or increasing market share – improved market share	3.65	3.47	0.182	0.061	2.987	0.003
Pair 7 (E) Competitive advantage	3.78	3.71	0.072	0.066	1.092	0.276
Pair 8 (E) (Use it as a (n) – effective) promotional and/or marketing tool	3.99	4.00	-0.010	0.050	-0.190	0.849
Pair 9 (E) Improving the organization's public image – organization's image in the market improved	4.05	4.07	-0.024	0.056	-0.429	0.668

Table VIII.
Paired samples *t*-test
(motives – benefits)

Although the externally oriented pairs (8 and 9) had a non-significant *t*-value and presented a negative mean difference, they seem to show the usefulness of the certification (their mean value are significantly greater than four). The remaining pairs 5 and 7 are disregarded from this analysis as they showed non-significant mean differences along with relatively low respective mean values.

Factor analysis

The factor analysis is used to reduce the multiple relationships that may exist among variable statements. It uncovers the common dimensions that link together the seemingly unrelated variables, and provides insight into the underlying structure of the data. The principal component extraction method was chosen to analyze the correlation matrix, and to extract the eigenvalues over one. For easier interpretation of the data set, the varimax rotation was applied. Only the factor loadings, that had values greater than 0.5, were considered.

The factor analysis of the motives items was performed for only 16 items because the significance of the *t*-test statistics along with the sign of the *t*-value, carried out in the previous sub-section, showed no important effect for the last three statements (see Table VI). We note that the value of the overall Kaise-Meyer-Olkin measure of sampling adequacy (KMO statistic) for the motives factor analysis was equal to 0.806 (greater than 0.5) hence the usefulness of the performed factor analysis (Malhotra, 2004). The motives items were reduced to four factors. They were named as “operational improvement”, “following competitors”, “human resources improvement” and “supplier relationship”. The naming of the factors was done according to the statements included in every factor. For instance, Factor 1 of Table IX was called “operational improvement” because the question statements under this grouping included issues such as “improving productivity/efficiency”, “improving product/service quality” and “improving processes/procedures”. These motivational aspects might be regarded as associated with the operational function of the organization. The second factor was labeled “following competitors” as three out of the four variables that had higher loading were explicitly associated with competition issues *per se*. Lastly, and by applying the same reasoning process for the first two factors, the third factor was called “human resources improvement” and the fourth was called “supplier relationship”.

The factor analysis of the benefits items was performed for only 19 items because the significance of the *t*-test statistics along with the sign of the *t*-value, carried out in the previous sub-section, showed no important effect for the last statement “Reduction in the number of customer audits” (see Table VIII). The value of the overall Kaise-Meyer-Olkin measure of sampling adequacy (KMO statistic) for this factor analysis is 0.875 (greater than 0.5). Five factors were selected and named as: “profitability”, “human resources”, “product quality”, “marketing” and “suppliers” (see Table X).

Correlation analysis

Between each motive factor and benefit factor, a bi-variate Pearson correlation was carried out and the results were reported in Table XI. Let us use 0.4 as a cut-off point when considering the existence of a correlation between two factors. By examining Table XI, the following cases emerge:

Item name	Operational improvement	Varimax rotated loading Following competitors	Human resources	Supplier relationship
Improving productivity and/or efficiency	0.816			
Improving processes and procedures	0.771			
Improving product and/or service quality	0.757			
Reducing incidents, rejections and complaints	0.689			
Use it as a basis for internal costs reduction	0.600			
Requisite to compete in the sector		0.807		
Our competitors are ISO 9001 certified		0.793		
Use it as a promotional and/or marketing tool		0.690		
Competitive advantage		0.565		
Improving communication within the organization			0.772	
Improving relationships between employees and management			0.741	
Maintaining and/or increasing market share			0.565	
Be role model to suppliers				0.616
Top management decision				0.576
A step towards total quality management				0.576
Improving the organization's public image				0.551
Eigenvalue	2.98	2.61	2.00	1.62
Cumulative variance explained (%)	18.68	35.05	47.6	57.76

Table IX.
Rotated component
matrix for the motives
items

- The highest correlation coefficient is equal to 0.566 and shows that the motive factor “following competitors” is significantly correlated with the benefit factor “marketing”. Both factors have in common certain items like “promotion effectiveness” and “competitive advantages”.
- Similar to the above analysis, the motive factor “operational improvement” and the benefit factor “profitability” have a significant moderate correlation (the correlation coefficient is equal to 0.435). The above-mentioned factors have three similar variables in common like: “improving productivity and/or efficiency” which has a higher loading on the “operational improvement” factor, and “improved productivity and/or efficiency” which has a higher loading on “profitability” benefit factor (see Tables IX and X).

The remaining values of Table XI, although significant, do not lead to a particular interpretation.

Item name	Varimax rotated loading				
	Human resources	Product quality	Marketing	Suppliers	
Reduced internal costs	0.789				
Improved profitability	0.750				
Increased productivity and/or efficiency	0.683				
Employees become more quality aware		0.748			
Increased workforce motivation and retention		0.692			
Better working environment		0.609			
Improved processes and procedures		0.594			
Elimination of redundancy or unnecessary work		0.538			
Better customer service			0.750		
Increased customer satisfaction			0.696		
Improved product and/or service quality			0.687		
Reduction in incidents, rejections and complaints			0.617		
Effective promotional and/or marketing tool				0.832	
Improved market share				0.701	
Organization's image in the market improved				0.653	
Greater competitive advantage				0.610	
Suppliers' quality improved					0.823
Established and/or improved mutual cooperation with suppliers					0.766
Expansion to international markets					0.591
Eigenvalue	2.76	2.59	2.56	2.50	2.40
Cumulative variance explained (%)	14.52	28.17	41.68	54.87	67.54

Table X.
Rotated component matrix for the item benefits

Motives factors	Benefits factors				
	Profitability	Human resources	Product quality	Marketing	Suppliers
Operational improvement	0.435 **	0.259 **	0.347 **	-0.074	0.046
Following competitors	0.077	-0.096	-0.070	0.566 **	0.141 *
Human resources	0.271 **	0.213 **	0.049	0.190 **	0.212 **
Supplier relationship	0.006	0.172 *	0.184	0.146 *	0.241 **

Notes: * Correlation is significant at the 0.05 level (two-tailed); ** Correlation is significant at the 0.01 level (two-tailed)

Table XI.
Correlations between the motives and benefits factors

Discussion

Five out of the six most important reasons that motivated UAE firms in seeking ISO 9001: 2000 certification are associated with internal issues. So, the certification process is believed to lead to a better quality in: processes, procedures and products. This result highly corroborates with the studies of: Buttler (1997), Carlsson and Carlsson (1995), Llopis and Tari (2003) and Poksinska *et al.* (2002). The remaining reason is related to the improvement of the organization's public image, an outcome found as well by: Arauz and Suzuki (2004), Escanciano *et al.* (2001), Huarng *et al.* (1999) and Llopis and Tari (2003). In fact, acquiring a quality certificate through a third party accreditation

agency can be used by the certified firm as an objective evidence of the high standard of its QMS. Therefore, caring about their public image does not necessarily mean that the responding firms acquired the ISO 9000 certificate for just impressing their stakeholders.

The top benefits perceived by the surveyed firms illustrate again the internal-external duality. Similar results were observed in the studies of: Brown *et al.* (1998), Buttle (1997), Chow-Chua *et al.* (2003), Escanciano *et al.* (2001), and Magd *et al.* (2003). It seems that the UAE firms are satisfied with the ISO 9001: 2000 certification as they have realized their expected benefits.

Comparing 19 motives and 20 benefits items is difficult due to their intrinsic differences. For example the “top management decision” motive statement has no counterpart in the benefits list. However, the relationship between the motives and benefits items can be studied through a principal component analysis. Four motives factors were determined and named as: “operational improvement”, “following competitors”, “human resources improvement” and “supplier relationship”. Also five benefits factors were determined and named as: “profitability”, “human resources”, “product quality”, “marketing” and “suppliers”. We note that the motives and benefits factors, determined in this study, are similar to the ones listed in the papers of: Arauz and Suzuki (2004); Buttle (1997); Huarng *et al.* (1999); Llopis and Tari (2003) and Singels *et al.* (2001). After conducting the factorial analysis, we performed a correlation analysis between the motives and benefits factors. We found that the external motive factor “following the competitors” presented a significant moderate correlation with the external benefit factor “marketing”. A similar result was also found between the internal motive factor “operational improvement” and the external benefit factor “profitability”.

The relationship between the motives and benefits was further investigated by analyzing the mean differences between the expected-perceived pairs of motives and benefits. The analysis revealed two results:

- (1) A little “disappointment” was observed by the respondents relative to the improvement of the internal operational aspects like: productivity or product quality.
- (2) A “satisfactory” performance was noticed by the firms relative to marketing and public image issues.

In other words, the responding firms met some of their external goals and to a lesser degree their internal ones. Although the internal goals have been met moderately, they still represent an important achievement because they scored above four on a five-point Likert scale. Besides, improving the efficiency of the firm or its product quality cannot be based solely on ISO 9001: 2000 certification. It seems that the managers have over-emphasized the outcomes of ISO 9000. This could explain why certain discrepancies have emerged between certain expected and perceived benefits.

Conclusions

The state of implementation of ISO 9000 in different countries is reported in many academic articles. However, relative to the Arab world, a paucity of research does exist. In this paper, we have studied the motives and benefits of ISO 9001: 2000 certified firms in the UAE through a large-scale questionnaire survey. In fact, the UAE has the

highest number of certified firms among the Arab countries and their contact addresses are readily available from different databases. Logically, studying the motives and benefits will not only explain why the number of certifications in UAE is high, but also can provide the non certified firms with useful information which can lead them to join the ISO 9000 movement. The response rate is equal to 209 out of 900 contacted organizations. Different manufacturing and service firms have answered our survey and most of them present a medium or small size. More than half of the responding firms have moved from the ISO 9001/9002/9003: 1994 to the ISO 9001: 2000 version of the standard.

Our findings suggest that the certified firms have adopted the right approach when seeking ISO 9000 certification because they have focused on the potential internal benefits. As a consequence of that, the certified firms have improved their business performances. The UAE present one of the most competitive economic environment in the region, therefore the UAE firms are keen to implement a reliable quality management system. The ISO 9000 certification can help them in achieving their quality targets so this can justify the high number of certified firms in UAE. The link between the motives and benefits was analyzed by performing different statistical techniques and revealed a significant moderate correlation between motives and benefits factors.

This research can be continued in the following two areas: First, the outcomes of this empirical study can represent an important reference when investigating the long-term benefits of ISO 9001: 2000 certification in UAE. A similar approach was adopted by Terziovskiet *al.* (2003, 1999), who studied the effects of ISO 9000 certification on Australian companies. Second, it will be interesting to study the impact of ISO 9001: 2000 certification on the financial performances of the certified UAE firms.

Recommendations for practitioners

The practical implications of this study are as follows:

- The ISO 9001: 2000 certification has delivered important internal and external benefits to the certified UAE companies regardless of their size, field of operation and ownership.
- The responding firms have obtained interesting results because they have focused on the right motives, which are mainly associated with operational aspects.
- The ISO 9001: 2000 certification have been used as a marketing tool and have thus improved the firms' public image.
- It seems that the responding firms are not fully aware of the potential use of ISO 9001: 2000 certification as a passport for international business.
- In order to successfully integrate the benefits of the certification along the supply chain, the responding firms should have spent more efforts in convincing their suppliers about its usefulness.

Finally the ISO 9001: 2000 certification is just the first step in the quality ladder. Indeed, the UAE certified firms should continue their efforts relentlessly in order to attain and sustain organizational excellence (Dale and Lascalles, 1997).

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