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ISO 9000 implementation in Turkish industry

ISO 9000
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Introduction

ISO 9000 is a series of standards from the International Organization for Standardization (ISO) which was first published in 1987 and which outlines the requirements for quality management systems in manufacturing and service organizations. Companies worldwide with quality systems that conform to the standards usually get themselves certified by an accredited body. Certification assures a company's buyers that it at least has a fundamental quality system in place. Across national boundaries, the standards also provide a common reference point for quality. In addition, the quality system required by ISO 9000 and its accompaniments are believed to serve as a stepping stone to the adoption of the Total quality management (TQM) philosophy. For more details on ISO 9000 and its implementation, one may refer to Clements[1], Rothery[2] and Hockman *et al.*[3] among others.

The current trend towards ISO 9000 is not without any criticism[4,5]. Many feel that this move has been the result of a bandwagon effect. In more specific terms, the following issues are commonly raised against ISO 9000: the standards are static and inflexible, are not always customer- and market-focused, look mainly at the production process, may not ensure the ultimate quality of an organization's products and services, and, finally, does not utilize the learning capacity of the organization to change itself. It has in fact been argued that the attention paid to ISO 9000 certification may actually be a shift away from the continuous process improvement which is essential for TQM. These potential pitfalls are recognized by most organizations; it is generally believed that the implementation of ISO 9000 creates order which in turn should help foster the development of TQM.

Despite the above concerns, the acceptance of the ISO 9000 series is growing rapidly. The presence of more than 95,000 certified companies in 86 countries, as of March 1995, has made ISO 9000 an important factor in international trade[6], and almost an imperative for companies exporting to the European Union (EU) countries which in many instances expressly require ISO 9000 compliance. In fact, EU countries have been the most enthusiastic about the standards; as of March 1995, they account for nearly 70 per cent of all the companies certified worldwide[6]. There have been some complaints that the EU may have been using the certification requirement as a non-tariff trade barrier, but the EU argues to the contrary that this requirement encourages trade by insisting on a set of common standards. This latter view seems to be gaining ground at this time[7].

Turkey, in the south-east of Europe, is a large country in size and population and is an emerging industrial economy; it has been slowly modernizing since its independence in 1923; the pace has drastically increased since the liberalization drive mounted in 1980. Turkey has long been a member of both NATO and OECD. It has also been lobbying for a full membership in EU for some time and joined the Customs Union in January 1996. Between 1987 and 1993, industrial production in Turkey grew at an average rate of approximately 6 per cent annually; in 1993, industrial activity contributed approximately 32 per cent to Turkish GDP[8,9]. Similarly, Turkish exports more than doubled from 1984 to 1993; in 1993, it constituted close to 9 per cent of GDP[8,9]. In 1993, industrial goods accounted for nearly 75 per cent of all Turkish exports[8,9]. The bulk of Turkish exports in 1993 went to OECD (roughly 59 per cent) and EU countries (roughly 48 per cent)[8,9].

Because of Turkey's close trade ties with Europe, it has been aware of the ISO 9000 movement from its inception. The Turkish Standards Institute (TSE) has been quick to set up a quality infrastructure that can support the industry's shift to the ISO 9000 culture. It appears that the effort has been reasonably successful. ISO 9000 certification in Turkey started in 1992. At the end of 1995, there were a total of 280 certified companies; this number has jumped to 375 at the time of writing[10,11].

In this paper, we present a systematic study documenting the present status of ISO 9000 implementation, the profile of the certified companies, their motivation behind seeking certification, and their organizational experience. In spite of the growth in quality awareness in Turkey, there has until now been no such study. In the literature at large, while much has been written about the various issues related to ISO 9000 certification, almost all of the works are either prescriptive or descriptive in nature; see[12] for references. It is only recently that empirical studies like our own have begun to surface; see[12-24]. Our survey is quite similar in scope to[22,23].

The remainder of this paper is organized as follows. First, the quality infrastructure as it exists in Turkey is described. Then, both the methodology and the results of the survey are analysed; the results are discussed next. Finally, some closing thoughts are given.

Quality infrastructure in Turkey

Turkey has a long history of producing quality goods and services. All through the process of its industrialization since 1923, it has attempted to keep itself in line with the latest in quality thinking. Obviously, an infrastructure is necessary for the wider diffusion of quality awareness in any society. We now discuss some elements of this infrastructure that exist in Turkey today.

The premier institution responsible for quality and the implementation of the ISO 9000 standards in Turkey is the TSE. It was founded in 1954 and admitted to ISO in 1955. Since then, it has taken an active role in various ISO councils and committees. As a standardization institute, it has distinguished itself by issuing over 12,600 national standards. It has adopted ISO 9000 verbatim as TS-ISO 9000 and issued the first certification under this name in 1990. By government

mandate, TSE is the only organization that can issue the TS-ISO 9000 certificate. TSE publishes a monthly journal called *Standard* with a significant quality and ISO 9000 content (the journal usually provides English translations of Turkish articles). It also sponsors seminars and symposia on quality and ISO 9000.

The National Quality Council (MKK) was formed in 1992 under a TSE initiative with members from government, industry, academia and professional societies. Its goal has been to promote quality and quality education nationally, using all available means. One of its major tasks has been to set up and oversee a nationwide system for ISO 9000 certification. In 1994, it evolved into the National Council for Quality and Accreditation (KAMK).

The Quality Association (KALDER) was created in 1990, through the sponsorship of the industry, as a professional body that will promote quality, raise the level of quality consciousness, help the Turkish industry be competitive internationally, and provide quality-related assistance and know-how to the industry. KALDER has a strong education and training programme which is offered on and off site. For instance, it offered over 200 such training sessions in 1995[25]. At any given time, it also has a number of different working committees focusing on topics of contemporary interest. KALDER publishes a quarterly journal called *Quality First* and organizes various seminars and symposia around the year; in particular, it hosts an international conference, Quality Congress, annually. Starting in 1993, it has established the annual Quality Award which is accorded to a Turkish company excelling in quality; the criteria for the award are similar to other awards such as the Malcolm Baldrige Award in the USA.

There are other governmental centres and professional associations in Turkey that have a stake in quality. They often address quality issues specific to their interests in their publications and fund projects related to such issues. Of particular interest is the state-run Center for Development and Support of Small and Medium Enterprises (KOSGEB); it holds education and training programmes and has recently taken an initiative to encourage implementation of ISO 9000 among Turkish small- and medium-sized enterprises (SMEs).

Finally, while TSE is the exclusive certificate-granting body for TS-ISO 9000, there are a number of European certification agencies operating in Turkey that issue ISO 9000 certificates independently. Also, there are several Turkish as well as foreign companies that provide consultancy on quality matters including ISO 9000 certification.

It appears that all the effort towards quality improvement has been fruitful. As evidence, note that two Turkish companies, Brisa and Netas, respectively won the 1996 European Great Quality Award and the European Quality Prize given by the European Foundation for Quality Management.

The ISO 9000 survey

Between April and August of 1996, we designed and executed a comprehensive survey in order to document the current state of ISO 9000 implementation in Turkey, the profile of firms that have implemented or are in the process of implementing it, their motivation behind seeking certification, and their

organizational experience during and after the certification process. The methodology and findings are detailed below.

The methodology

We focused on the top 500 Turkish companies as listed in an annual publication of the Istanbul Chamber of Commerce[26]. Similar to[22], it was our intention to contact only that individual at the highest level of a company's management who is responsible for quality, and conduct a thorough telephone interview if possible. To this end, we designed a questionnaire consisting of two main segments – company profile including ISO 9000 status, and organizational motivation and experience. The questionnaire, with a total of 29 questions (a few open-ended), was originally written in English and to a limited extent was modelled on the few questionnaires that we have already seen in the literature or on the Internet (e.g. [21,22]). It was then translated into Turkish and reviewed by a colleague who is an expert in marketing research. In line with[22], it was pre-tested on several MBA students and two local companies to verify the clarity and the relevance of the questions. (The questionnaire is available on request to those who are interested.)

A pool of graduate research assistants were trained to carry out the questionnaire interviews over the telephone whenever feasible; alternatively, they were instructed to send the questionnaire via fax and follow through. We tried to reach as many of the 500 companies as possible. However, because of various difficulties, it was possible to contact only 101 companies by telephone or via fax. From among these, only 73 usable responses were gathered.

The data from the questionnaires were entered into a spreadsheet on Microsoft Excel as and when they came in. In cases of missing or doubtful data, references were made to publications from the Istanbul Chamber of Commerce and TSE in order to maintain integrity. The summary statistics were produced by Excel.

Some justification of this methodology may be in order. At the time of the study, the number of ISO 9000 certified companies in Turkey was roughly between 280 and 375 and many of them were SMEs. We chose to concentrate on large companies because we believe, from personal experience, that such companies are easier to access and most likely to provide reliable data. This left us with a smaller number of companies to approach. Given this situation, the response rate obtained by us is quite reasonable for questionnaire surveys. We also chose to interview the person primarily responsible for quality in the organization, because he/she was the one most likely to be aware of all aspects of the certification process and focusing on him/her alone freed us from the unwanted task of reconciling possible conflicting views. As for the pre-testing procedure, such as that in[22], it was rather informal and was intended mainly to ensure the clarity and the relevance of the questions.

Profile of responding companies

ISO status by business sector. Table I lists the defined business sectors represented by the responding companies and the number of respondents from each sector. It also shows by sector the current status of the companies with

Business sector	No. of companies	No. of companies with ISO 9000	No. of companies wanting ISO 9000	ISO 9000 implementation in Turkish industry
Construction materials	11	8	3	1237
Appliances	9	7	2	
Service	7	5	2	
Chemicals and synthetics	7	4	2	
Glass and ceramics	7	6	1	
Textile	5	2	2	
Food and beverage	4	2	2	
Electrical equipment and cable	4	4	0	
Metal	4	4	0	
Others	15	8	7	

Note: Two companies do not intend to obtain ISO 9000 certification

Table I.
Business sectors and ISO 9000 status of the surveyed companies

respect to ISO 9000 certification. Notice that all but two of the respondents (one from "Textile" and the other from "Chemicals and synthetics") already have or intend to have certification. "Construction materials" accounts for the largest pool of respondents among the distinct sectors; this is to be expected in an emerging economy (the construction sector is responsible for roughly 7 per cent of Turkish GDP[8]). It is followed by "Appliances" (which is a mixed bag of various manufacturing companies), "Chemicals and synthetics" (again a mixed bag), "Glass and ceramics" (a traditional Turkish stronghold for centuries), "Services" (ranging from finance and health care to software and telecommunications), and "Textile" (a strong Turkish niche). Of the above, we find the relatively large number in "Services" quite remarkable. Finally, we should note that "Others" in Table I consists of autos, auto parts, machine tools, industrial equipment, agricultural supplies, packaging, paper and furniture. It is curious that the only auto manufacturer in the survey (a foreign collaboration) still does not (though intends to) have ISO 9000 certification.

Business ownership. Among the respondents, 50 per cent have shares traded in the Istanbul stock market. There are seven foreign multinationals and two military foundations (a unique Turkish phenomenon). The rest belong either to the private or to the joint sector with the government. Figure 1 depicts the type of foreign involvement and collaboration, if any, which the responding companies may have. It is interesting to note that 58 per cent of the companies do not have a foreign tie-up.

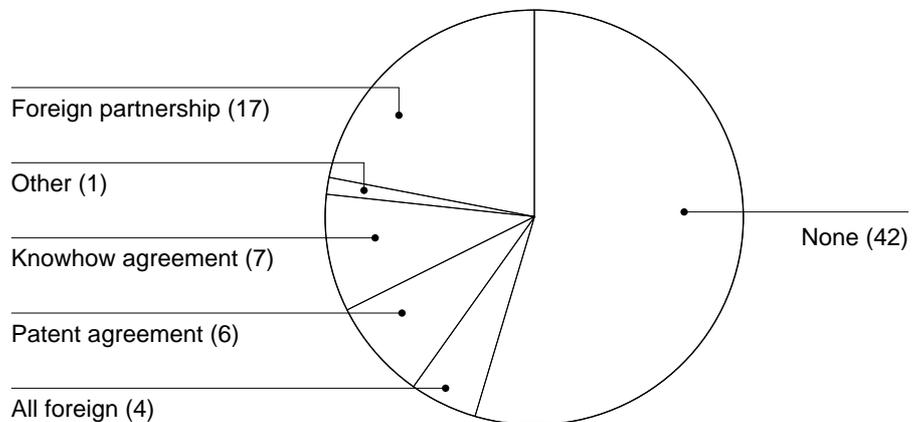
Revenue and size. The gross annual 1994 revenues of the respondents range from below US\$10 million to above US\$200 million. Figure 2 shows the distribution. Similarly, the respondents employ from fewer than 50 to more than 500 workers. The situation is shown in Figure 3.

Exports. In the responding companies, exports as a percentage of total revenue range from 0 to more than 50 per cent (see Figure 4). As for the countries, the exporting companies among the respondents do business with: European Union (89 per cent); Middle East (82 per cent); Asia (including the

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Figure 1.
Foreign involvement in
the surveyed
companies



Note: 73 companies responded; there are four overlaps

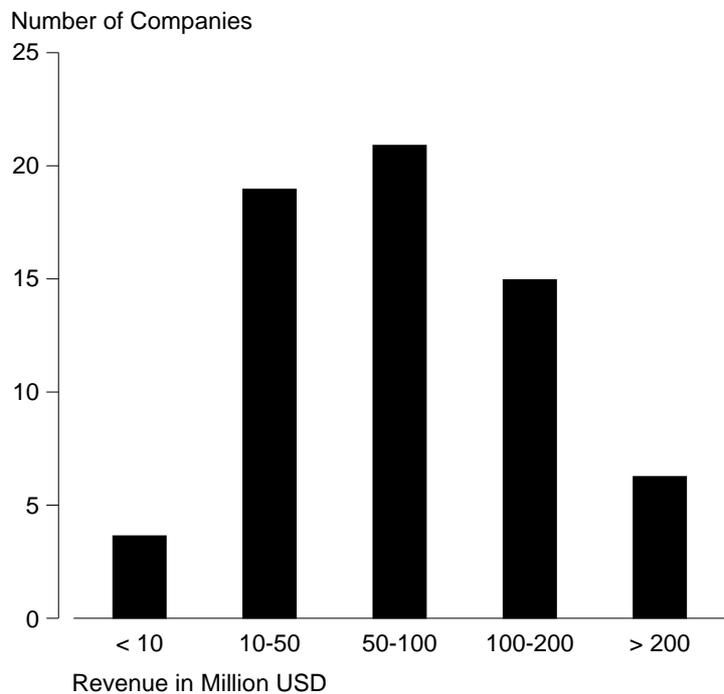
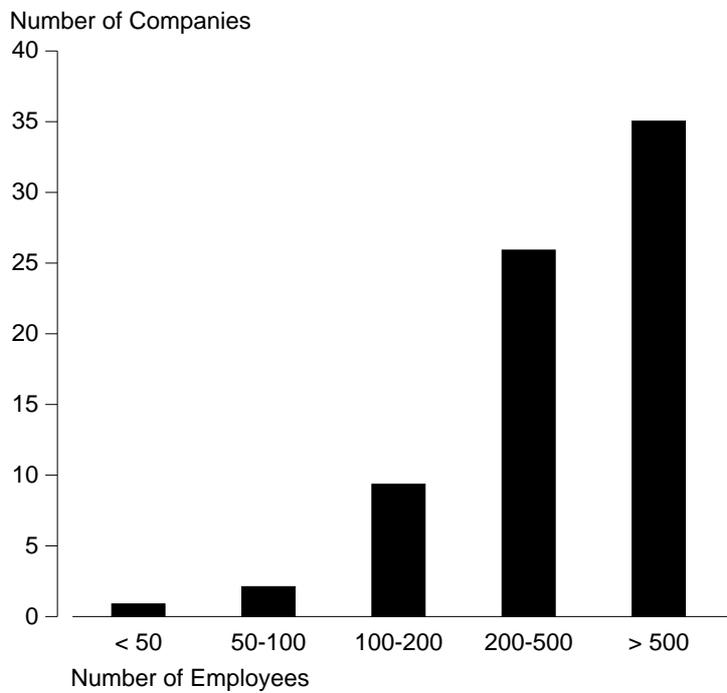


Figure 2.
Revenue distribution of
the surveyed companies

Note: Eight observations are missing

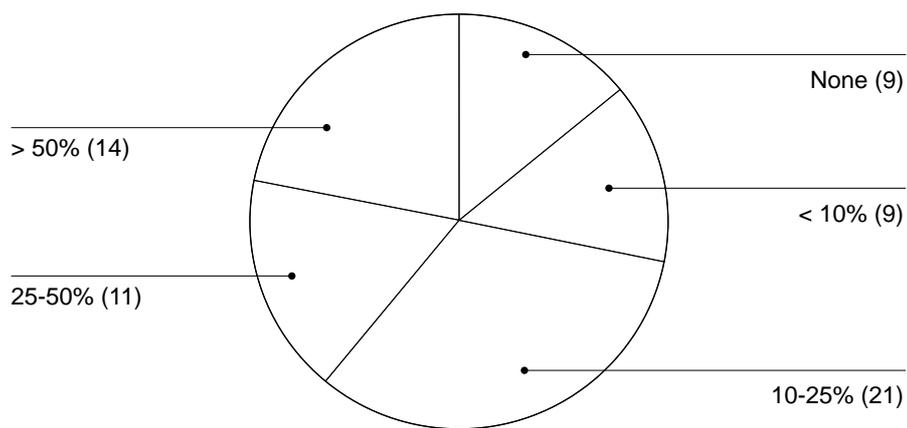


Note: One observation missing

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Figure 3.
Workforce size
distribution of the
surveyed companies



Note: Nine observations are missing

Figure 4.
Exports as a percentage
of the total revenue of
the surveyed companies

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Turkic republics of the former Soviet Union) (66 per cent); others (including the USA) (35 per cent). Note also that 16 per cent of the exporting companies export worldwide.

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Organizational motivation and experience

Push and motivation. The push for ISO 9000 certification came from top management in 82 per cent of the reported instances, whereas the quality department initiated the push in 39 per cent of cases (obviously, there is some overlap). The motivation issue was explored through both an open-ended and a multiple-choice question (to cross-check for consistency). The answer to the first question typically identified the single most important factor behind seeking certification. These factors along with the corresponding number of companies are listed in Table II. The answer to the second question, on the other hand, identified all the factors (from among the choices provided by us) that played a role in the decision to seek certification. Therefore, there is considerable overlap here. Table III summarizes the responses to this question. Table II shows that the two most frequently cited single factors are “an opportunity to implement a quality system” and “a step towards TQM”. Similarly, “consistent with the company’s existing quality focus” and “raise the quality level of the company” top Table III. What we observe here is quite consistent. Interestingly, both Tables II

Table II.
Motivating factors in seeking ISO 9000 certification as stated by the companies

Motivating factor	No. of companies
An opportunity to implement a quality system	11
A step towards TQM	9
Improved quality of production	9
Enhanced customer satisfaction	8
A means of getting the quality system certified	6
Increased exports	6
A competitive necessity	5
Increased market share	5
Demanded by customers	3
Prompted by Turkey’s entry into the Customs Union	3

Note: Some responses overlap

Table III.
Motivating factors in seeking ISO 9000 certification as prompted by the questionnaire

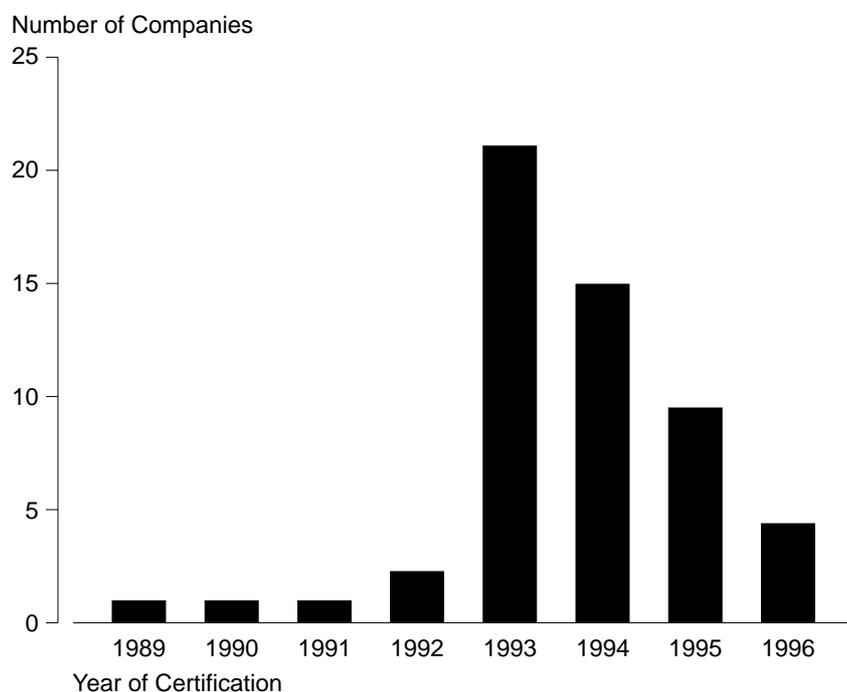
Motivating factor	No. of companies
Consistent with the company’s existing quality focus	36
Raises the quality level of the company	34
A competitive necessity	24
Essential for exports in general	16
Essential for exports to EU countries	9
Required by foreign partnership	4
Others	5

Note: Many responses overlap

and III show that respondents placed relatively low priorities on exports in general and on EU in particular. This is in sharp contrast to the popular belief that the export motive has dominated the certification drive. Actually, we tested the role played by exports in a follow-up question, where 42 per cent of those who responded rated exports as less than important.

The certification project. An overwhelming majority of the respondents (91 per cent) classified the certification project as being a company-wide effort; only 9 per cent called it isolated. In 71 per cent of the instances, top management involvement was reported as being normal; only in 11 per cent of the instances was it deemed very high. Special teams were formed in 91 per cent of the respondent companies, quality consultants were hired by 46 per cent, and guidance from parent companies and/or foreign collaborators were available to 18 per cent. Formal cost/benefit analyses were done at only 28 per cent of the companies.

Source, time, duration and cost. TSE was the sole source of certification for 57 per cent of the companies, whereas a foreign certification agency was the sole source for 13 per cent. A considerable number, 28 per cent, of the companies had certification from both TSE and a foreign agency. As for the time of certification, Figure 5 shows the number of certifications obtained in various years. Just for curiosity, the earliest certificates in our sample were obtained in 1989 and 1990 by a cement company and a multinational electrical equipment manufacturer,



Note: 54 observations (including a few that are close to being certified)

Figure 5.
Year of certification of
the surveyed companies

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respectively. Figure 6 depicts the duration of the certification process as experienced by the respondents. Only in rare cases did the process take longer than two years. Among the 19 companies that volunteered information on the cost of the certification process, the cost ranged from below US\$5,000 to above US\$30,000, the average being US\$23,600. These figures appear to be relatively low by international standards.

Project controls. Of the respondent companies, 31 per cent tracked neither time nor money during the certification process; 31 per cent tracked only time; 2 per cent tracked only money; and 36 per cent tracked both. A large majority, 88 per cent, of the companies appear to have tracked ISO 9000 compliance during certification (there was some confusion in the responses due to the phrasing of the associated question in Turkish).

Obstacles and organizational reaction. The various obstacles faced by the companies during the certification process are listed in Table IV along with the frequencies of their occurrences. The most common obstacles to ISO 9000 implementation cited were organizational – “lack of understanding of its importance by all departments” and “unwillingness to change from the existing system” – followed by a procedural one – “difficulty in understanding the ISO 9000 requirements”. Over 74 per cent of the companies reported experiencing no resistance within their organizations; only 4 per cent experienced active

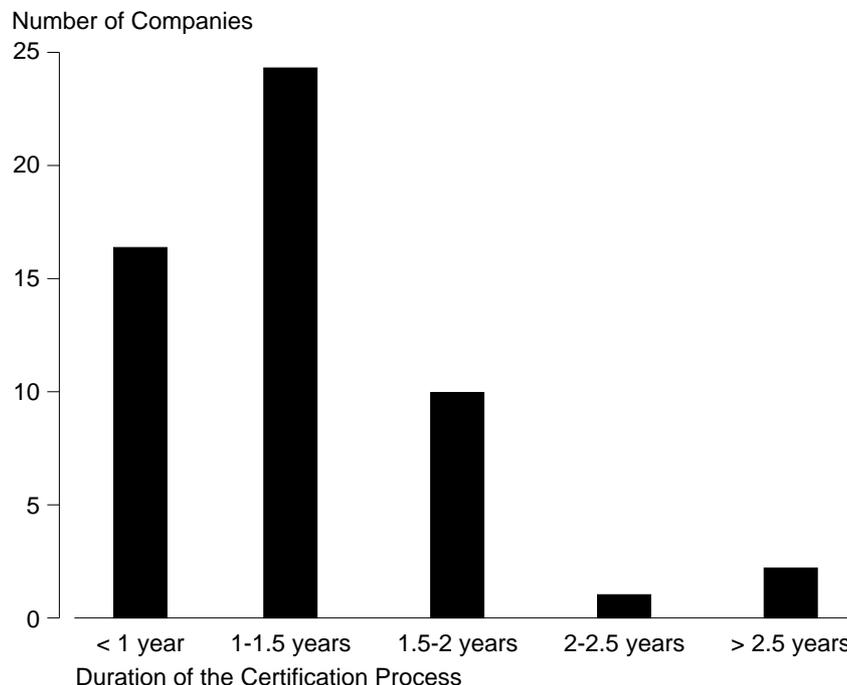


Figure 6.
Duration of the certification process as experienced by the surveyed companies

Note: 54 observations (including a few that are close to being certified)

resistance (such as vocal protests). In only 6 per cent of the companies was certification perceived as being a threat to job security.

Certification in retrospect. A vast majority (91 per cent) of the respondents felt that the duration of the certification process was reasonable given its benefits. Only 4 per cent felt that the cost of certification was too high.

Current feelings and future directions. All respondents saw tangible benefits in ISO 9000 certification. Table V summarizes the benefits from certification as perceived by the respondents. It can be seen that most respondents felt that certification has increased the quality awareness within their companies. Table VI summarizes the responses of the companies when they were asked about their new focus since certification. To focus on continuous improvement seems to be the consensus among the respondents.

Obstacles	No. of companies
Lack of understanding of its importance by all departments	35
Unwillingness to change from the existing system	22
Difficulty in understanding the ISO 9000 requirements	22
Documentation control	18
Time and/or cost	6
Others	7

Note: Many responses overlap

Table IV.
Obstacles faced during
the ISO 9000
certification process

Perceived benefits	No. of companies
Increased quality awareness within the company	46
Standardization of the company's quality system	33
Increased sales/exports	10
Nothing tangible	0
Others	5

Note: Many responses overlap

Table V.
Perceived benefits of
ISO 9000 certification

Focus	No. of companies
Continuous improvement	45
Increased customer satisfaction	31
Maintain the certified status	22
Others	9

Note: Many responses overlap

Table VI.
Companies' focus since
ISO 9000 certification

Discussion of the results

We now try to put the results of the survey in perspective. We only address those elements that we find interesting and which are comparable with available survey results from the USA[22] and Belgium[23].

A hypothesis at the beginning of the study was that the ISO 9000 drive in Turkey owes its momentum to Turkey's export relations with EU countries. In the early 1990s, there was a wave of editorials in the popular press alerting Turkish companies to the need of obtaining ISO 9000 certification for exports to EU countries. Even today, senior officials in the Turkish quality establishment maintain that a sizeable portion of certification has been obtained for this reason. In our survey, however, we found that while 89 per cent of the responding companies export to EU countries, only 17 per cent list this as their motivation for seeking certification.

There is some reason, however, to believe that the companies may have had export considerations on their minds while seeking certification; this is reflected to some extent by our finding that 41 per cent of them had certification from foreign agencies. We should note though that 68 per cent of this 41 per cent also had TSE certification.

There was also some feeling that foreign collaboration may have a significant impact on the decision to seek certification. In our survey, 23 per cent of the companies had such collaboration. However, only 7 per cent stated that certification has been required by the foreign partner.

The push for ISO 9000 certification has come mostly (in 82 per cent of the cases) from top management. The US survey reports similar results (75 per cent).

In terms of motivation, our survey shows that the main factors in the decision to seek certification were internal and quality related. Companies looked at the certification process as an opportunity to implement a quality system or as a step towards TQM. This contrasts with the results from the US survey in which the main factor was to meet the demand from the customer or the marketing department. In this survey, export considerations seem to have played an important role also. However, in the Belgian survey, the main factor was an internal one (involving organizational efficiency and control) similar to ours.

The time taken to obtain certification was around 15 months on average. The cost averaged US\$23,500. The time compares favourably with those mentioned in the US and Belgian surveys. The cost is significantly lower; in the US case, a cost of US\$245,200 is cited, whereas in the Belgian case, a cost of US\$75,000 is reported. Our feeling is that the figure from our survey may underestimate the true cost in that it does not take into account other direct and indirect costs that are incurred during the implementation process.

The major obstacles encountered by the surveyed companies during the certification process were lack of appreciation of its importance by all departments and the unwillingness to change from the existing system. There were also some difficulties in understanding the ISO 9000 requirements. This was also the most significant difficulty during US implementations. Only 26 per cent of the companies reported some resistance against the certification effort; of these, 41 per cent described the form of resistance as being active. In only 6 per

cent of the companies was the certification effort perceived as being job threatening. In contrast, in the US survey where the certification drive was often seen as a fad, 87 per cent of the companies reported some form of resistance and nearly a half of them considered this resistance to be active. Also, in roughly 30 per cent of the companies, were job threats perceived.

All the companies in our survey found ISO 9000 certification beneficial. This was generally true for the US and Belgian surveys as well. The most often cited benefits in our case were the increase in quality awareness and the standardization of the quality management system within the company. In the US case also, the establishment of a formal system and a consistent documentation method was cited most often. Similarly, in the Belgian case, the most frequently cited benefit related to internal change was the development of a well-defined system of procedures.

The post-certification focus among the companies surveyed by us has mainly been on continuous improvement and, to a lesser extent, on customer satisfaction. In the US survey, continuous improvement has received the top billing, but customer focus has been rated rather low.

Conclusions

In this paper, we have attempted to provide a background on the quality movement in Turkey and highlight the importance of the ISO 9000 standards for the Turkish industry. We have also reported the results of an extensive survey on ISO 9000 implementation that we conducted among the Turkish large companies. The results provide information on the ISO 9000 implementation status, company profiles, motivation behind seeking certification, and organizational experience.

What we see from the survey tells us that Turkish large companies are in many ways similar to their international counterparts, at least with respect to ISO 9000 certification. Four basic lessons emerge from our study:

- (1) The drive for ISO 9000 certification is motivated primarily by quality considerations. Companies either want to implement a quality system or move towards TQM. This counters some arguments levelled against ISO 9000.
- (2) The time taken to obtain certification in Turkey is about the same as elsewhere; the cost is considerably less. Given the benefits of certification, companies overwhelmingly feel that these are quite reasonable.
- (3) One of the main obstacles in the certification process is organizational – lack of appreciation of its importance across departments and unwillingness to change from the existing system. This, though unavoidable, can be addressed through proper education and training at the outset. Another obstacle is procedural, in that it relates to the difficulty in understanding the ISO 9000 requirements. This too can be redressed through consultation with appropriate agencies.
- (4) It appears that a large majority of the companies view certification as a platform for launching into continuous improvement. This is remarkable.

In closing, we hope that the picture we have presented will help international managers doing business in or with Turkey to better understand the quality situation in Turkish industry. The lessons learnt are universal. It should encourage managers everywhere, including Turkish managers of SMEs, to consider taking the ISO 9000 plunge if they have not done so already.

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