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Relationship between national culture and TQM implementation, Case study: Iranian multinational electrical manufacturing companies

Abbas Mardani[1], Mansooreh Kazemilari[2]
1- Department of Management, Faculty of Management and Human Resource Development, University Technology Malaysia 81310 UTM Johor Bahru, Johor, Malaysia
2- Department of Mathematical Sciences, Faculty of Science University Technology Malaysia, 81310 UTM Johor Bahru, Johor, Malaysia
abbas.Mardani.2000@gmail.com

ABSTRACT

Total quality management (TQM) has become an indispensable business strategy for multinational companies to be competitive in the global arena. There have been sufficient discussions on the theories of culture and TQM. There is also a sufficient amount of research on the instrument development for measuring culture and TQM. However, there are insufficient studies on the understanding of how to measure TQM implementation and on what cultural factors will influence the effective and efficient implementation of TQM. This is an empirical study of the impact of national culture on TQM implementation in the Iranian multinational electrical manufacturing companies. The object of the study and the research population has been carefully selected to avoid the shortcomings and weaknesses of previous studies. This study investigates the relationship between national culture and total quality management (TQM) implementation in Iranian multinational electrical manufacturing companies. This research employs five of Hofstede's national culture dimensions and seven elements of TQM implementation. The sample was collected from 300 managerial personnel of multinational companies from Iran in 14 companies. The survey result is analysis by regressing cultural dimensions on TQM elements. The results of this research show that the some "national culture" dimensions and the dimensions of TQM implementation are correlated. Uncertainty avoidance affects two TQM elements "(Information and analysis and human resources focus)". Individualism has a significant negative impact on "Information and analysis", but has a significant positive impact on process management and business performance. Power distance is the most influential cultural element and impacts all seven TQM elements. Masculinity has no significant affect to TQM elements except business performance. Long-term orientation significantly affects three TQM elements (strategic planning, process management and business performance) in positive ways.

Keywords: National culture, total quality management (TQM), Iranian multinational electrical manufacturing companies

1. Introduction

New technologies developed in the twentieth century broke the natural boundaries of regions and thus made cross-regions commerce so frequent. Over the past few decades, TQM has become a guiding principle for various industries and organizations and is well known in utilizing statistical approaches to control the whole process. However, researchers contend

that TQM programs have proved to be insufficient because of the so-called soft elements of TQM, like employee participation, management's leadership and learning for change (Morrison and Rahim, 1993; Beer, 2003; Rahman, 2004). Research in cross-cultural studies has long demonstrated that cultural values may have a significant impact on an organization's management practices (Hofstede, 2001; Newman and Nollen, 1996). Various authors have thus postulated that differences in "national cultures" may require differences in the "management practices" of organizations (Newman and Nollen, 1996; Pagell, Katz, and Sheu, 2005).

Additionally, Flynn and Saladin (2006) examined the relationship between Malcolm Baldrige Quality Award criteria and Hofstede culture dimensions. Their findings indicated that quality management would prove more successful in national cultures with higher levels of masculinity power distance, uncertainty avoidance and collectivism. The mentioned culture dimensions seem more familiar with the practice of the hard parts of TQM (e.g., JIT, SPC usage, process management). Bordering on consistent cultural dimensions for TQM, Japanese national culture works quite well because of higher levels of uncertainty avoidance, power distance, collectivism and masculinity, and it is legendary in quality management execution (Flynn and Saladin, 2006). It is no wonder that soft TQM is restricted by different cultural backgrounds. Organization sustainability becomes a popular issue in the twenty-first century (Presley et al., 2007; Orlitzky et al., 2003).

Other important TQM organization theory studies focused on the top management's leadership roles in improving an organization's management practices (Anderson, Rungtusanatham, and Schroeder, 1994) on approaches of how to overcome organizational resistance when implementing organizational change efforts and on the need to fully and comprehensively implement TQM values in organizations (Hackman and Wageman, 1995). However, despite the rich body of TQM studies in Organization Theory, there seem to be few studies that develop and test TQM implementation values, national culture dimensions. The body of TQM knowledge developed initially from TQM studies that focused on advanced countries such as Australia, Japan, U.K. and the U.S. (Rao, Solis, and Raghunathan, 1999; Sila and Ebrahimpour, 2002). Addressing this somewhat neglected field, the Operations Research literature started recently to show interest in investigating how national culture relates to the implementation of TQM values (Anwar and Jabnoun, 2006; Largrosen, 2003; Sousa-Poza et al., 2001; Mathews et al., 2001; Tata and Prasad, 1998). For example, Tata and Prasad (1998) offer a speculative model suggesting that national culture drives organizational culture, which in turn influences TQM values. Similarly, Sousa- Poza et al. (2001) developed a quantitative model of complex relationships between organizational culture and TQM values that depend upon the national values of a country.

However, most of these studies focus primarily on organizational culture, (Sousa-Poza et al., 2001), or are purely theoretical (Anwar and Jabnoun, 2006; Tata and Prasad, 1998) or offer no theories at all (Mathews et al., 2001). An extensive literature examining how national culture influences management practices has contributed to our understanding of the applicability of various management practices in different cultural contexts. Interest in cross-cultural research and the international relevance of management theory has increased dramatically during the last two decades (Bond and Smith, 1996; Cooper and Denner, 1998; Earley and Gibson, 1998; Inkpen and Beamish, 1994; Kagitcibasi and Poortinga, 2000; Oyserman, Coon, and Kemmelmeier, 2002; Wright and Ricks, 1994). This study aims to define statements of TQM implementation and national culture in Iranian multinational electrical manufacturing companies. Amongst the studies thriving to identify the relevant

elements of TQM, the "Malcolm Baldrige National Quality Award (MBNQA)" program has substantially advanced and standardized the emulated task. The noteworthy development of the elements by MBNQA parallels a number of studies reporting the inseparable relationships between the organizational performance and MBNQA factors (Black and Porter, 1996). The seven elements of MBNQA are as follows: strategic planning, leadership, human resource focus, information and analysis, business results, customer and market focus and process management. Total quality management (TQM) represents a widely accepted management practice whose principles have been embraced by many organizations (Dean and Bowen, 1994). Evolving over several decades, TQM today is viewed as an integrated, systematic, organization-wide strategy to continuously improve the products, services and processes of an organization (Waldman, 1994). Research on TQM shows that organizations adopting TQM practices experience a great variety of results ranging from implementation failure (Harari, 1997; Krishnan, Shani, Grant, and Baer, 1993) to increased competitive advantage (Douglas and Judge Jr., 2001; Powell, 1995) and improved organizational performance (Hendricks and Singhal, 1997; Reed, Lemak, and Montgomery, 1996).

A variety of authors have identified national culture, or: "the collective programming of the mind" (Hofstede, 2001) and organizational culture, or: "the shared set of values, beliefs and assumptions" (Schein, 1996), as major determinants for TQM implementation (Sousa-Poza, Nystrom, and Wiebe, 2001; Tata and Prasad, 1998). Moreover, some authors see a root cause of TQM implementation failures in the universal applicability of today's TQM approaches, regardless of organizational context and environment (Dean and Bowen, 1994; Sitkin, Sutcliffe, and Schroeder, 1994). Specifically, the study proposes that individualism, masculinity, Power distance, long term orientation and Uncertainty avoidance (Hofstede's, 1983 and 2001) influence the TQM implementation of strategic planning, leadership, human resource focus, information and analysis, business results, customer and market focus and process management. This study intends to answer the following questions

(1) Does national culture affect how well TQM is implemented?
(2) Which national culture elements are more influential towards which TQM elements?

This study is important from both a theoretical and practical perspective. On the theory side, the study is important since it uses a cross-disciplinary approach. It contributes to the literature on management practices and cross-cultural studies in Organization Theory and furthers a number of studies in Operations Research. On the practice side, this study raises the awareness of problems in the implementation of TQM values that may be related to cultural factors in Iranian companies. The study thus aims to help managers to better understand how to implement more effectively management practices in a national setting due to an increased cultural understanding. To avoid TQM implementation failures, management must take into account all situational requirements when formulating a company specific approach.

2. Review of literature

2.1 National culture

Flynn and Saladin, (2006) indicated that culture provides a sense of belonging to people. Most management research proposes that the ideal outlook of culture is "a set of ideas shared by members of a group" (Jaeger, 1986). National culture is the collective programming that

results from experiences derived from values such as family, government, religion, architecture, and even science.
National culture replaced very step by step because it is in the minds of people of a nation also becomes shaped in its organizations. Hofstede (1993) conducted research across forty countries and surveyed over 116,000 employees from multinational organizations to develop a system for national culture. From this data, four principal factors were extracted: masculinity, “power distance”, individualism, and “uncertainty avoidance”.

Hofstede defined Power Distance as "the extent to which the less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally". This dimension relates to a hierarchy in which members with a low power distance expect and accept power relations that are more consultative or democratic. Individualism is contrasted with collectivism. Individualism refers to the degree to which people prefer to act as individuals rather than as members of groups. Masculinity focuses on the scale of "masculine" values such as assertiveness, acquisition of wealth, quality of life, and not caring for others. Uncertainty Avoidance is the extent to which a society feels threatened by uncertainty and tries to avoid it (Hofstede, 1980; Robbins, 2006). Long-Term Orientation ranking indicates that the country prescribes to the values of long-term commitments and respect for tradition. Contrary to Long-Term Orientation, Short-Term Orientation ranking indicates that people expect short-term rewards and have little respect for tradition (Hofstede, 1993; Hofstede and Bond, 1988; Hofstede and Hofstede, 2005). Although Hofstede (1993) indicated that the unidentified factors contribute more than 50% of evaluation, the dimensions may or may not clarify a situation for individual country (Lu, 2005). However, Hofstede's work on national culture is regularly described as landmark and is widely used as a theoretical framework for guiding cross-cultural comparisons, especially using the original four dimensions. Based on the research concept of this study, Table 3 shows Hofstede's four culture dimension scores for selected countries. Whereas U.S. national culture has high Individualism and Masculinity scores, Taiwanese national culture receives a high score in Power Distance, and Japanese national culture receives high scores in Uncertainty Avoidance and Power Distance.

2.2 Hofstede’s five Dimensions

By studying the data about the values of 116,000 employees in 40 countries in one large multinational company, Hofstede (1980) developed one of the best known classifications of national culture. He published four dimensions in 1980 and the fifth in 1988 (Hofstede and Bond, 1988). These dimensions affect all parts of life, including the schools, family, society the workplace as a whole. The five dimensions include: collectivism vs. individualism, femininity vs. masculinity, Power distance, Short term vs. long term orientation and Uncertainty avoidance.

2.2.1 Power distance

This is about social inequality and distribution of power. It is „the extent to which less powerful members of institutions and organizations within a country expect and accept that power is distributed unequally (Hofstede, 1991). In high power distance countries, superiors and subordinates regard bypassing as disobedient and defiant. Subordinates are supposed to be instructed. Less powerful people are reliant on the more powerful people. Power means privileges. Powerful people show a high profile. The task of managers is emphasized. Organizations tend to favor centralization (Yoo et al., 2006). In low power countries,

subordinates who go past the boss in order that get the task done are regarded as normal and usual. Subordinates are expected to be consulted. Bosses and subordinates are inter-reliant. Powerful people keep a low profile. The task of employees is focused. Organizations tend to favor decentralization (Yoo et al., 2006).

2.2.2 Collectivism/Individualism

This dimension handles to which extent individuals take care of themselves or are more dependent on strong groups (Hofstede, 1991). In individualistic nations the individuals interests is preferred over the groups. In this kind of society the family is your parents with relatives not living close by. The focus is on the "I" when you grow up and you focus on your own interests and preferences. In the workplace individualist are expected to act in their own interest and you should have self interest in the work you perform that match the interest of the employer. Also the hiring process is based on skills (Hofstede, 1991). In collective nations people belong to groups which remove the focus on the "I". The group is protective in return of loyalty towards it. The hiring take the group that the individual are part in into account (Hofstede, 1991). This reduces risk if you know the family from before and the group will also see to it that the employee does not embarrass them. The collectivism also reflects how they work, when working in a group and the result is a "group effort" they perform at their best. Therefore management is this kind of society is often management of the group instead of individuals (Hofstede and Hofstede, 2005). "Individualism stands for a society in which the ties between individuals are loose: everyone is expected to look after himself or herself and his or her immediate family only" (Hofstede, 1991). In collectivistic cultures, people also think that members' beliefs and behavior should be submissive to the preference of the group. People recognize that different groups have different principles and standards. External social pressures and shame are ways to regulate the members. „People learn to think in terms of "we". Harmony and consensus are ultimate goals (Yoo et al., 2006). On the contrary, in individualistic cultures, people think that personal beliefs and behavior should be determined by personal preference. People also think that all people should share some common values. Internal pressure and guilt are ways to regulate the members. People place more emphasis on self-respect. Individuals „tend to form looser relationships and learn to think in terms of "I". Self-actualization by every individual is an ultimate goal (Yoo et al., 2006).

2.2.3 Femininity/Masculinity

"Femininity stands for a society in which social gender roles overlap: both men and women are supposed to be modest, tender, and concerned with the quality of life (Hofstede, 1991)". The roles of gender are defined more strictly in the masculine societies than in the feminine societies. The femininity/masculinity dimension has significant considerations for motivation in the place of work. For example, quality circles for achieving maximum quality are more likely to be successful in countries with masculinity and high uncertainty avoidance. Conversely, the innovative work groups for enhancing job satisfaction and flexibility are more likely to be successful in countries of femininity/low uncertainty avoidance (Miroshnik, 2002).

2.2.4 Uncertainty avoidance

It is the extent to which the members of a culture feel threatened by uncertain or unknown situations (Hofstede, 1991). In countries of high uncertainty avoidance, employment can be

life-long. In contrast, in countries of low uncertainty avoidance, high job turnover is not unusual. In countries of low power distance and uncertainty avoidance countries, companies have simple organizational structures. Direct communication between everyone is expected and encouraged. However, in countries of low uncertainty avoidance and high power distance, companies are like traditional families. The father is the head of the family and offers physical and economical protection for each family member. In return, the father expects each member to be loyal to the family. In countries high in uncertainty avoidance and power distance, companies are considered pyramids of people. In the pyramid organization, the lines and layers of authority are clearly defined by the management in order to reduce the uncertainty to its members. In countries of low power distance and high uncertainty avoidance, companies have high predictability. It is not necessary to have a rigid organizational structure. Uncertainty is reduced by clear definitions of roles and procedures (Miroshnik, 2002).

2.2.5 Short-term/Long-term orientation

This was originally labeled Confucian Dynamism. It is the least discussed dimension in the literature. Long-term orientation stands for encourage of goodness oriented towards future rewards, in particular diligence and economizing (Hofstede, 1991). Short-term orientation stands for the fostering of virtues oriented to the past and present, in particular honor for tradition, preservation of "face", and accomplishing social obligations (Hofstede, 1991). Long-term orientation admires persistence, thriftiness, shame as a social modifier, and status difference. Short-term orientation emphasizes tradition, stability, face-saving, reciprocity, and gift-giving. The last dimension was concluded by Hofstede in the more recent study. It was found through research among student samples using the Chinese Value Survey (Hofstede, 1991). The first four dimensions match those suggested by Inkeles and Levinson (1969).
Kuchinke (1999) comments that Hofstede's data collected between the 1960s and early 1970s may not be useful today. Social, economic, political and technological conditions have changed. There is a high probability that the scores of the dimensions of the national culture have changed.

2.3 Organization culture and national culture

Hofstede (1991) finds that at the national level, cultural differences exist mostly in values and less in practices, while at the organizational level, cultural differences exist mostly in practices and less in values. Hoecklin (1995 argued that national culture nurtures the development of corporate culture in organizations, and in turn, they correlate with each other (Pun, 2001). National culture is the super-ordinate value system while organizational culture is the sub-value system. National culture operates as an influence on the organizational culture (Noronha, 2003). According to Miroshnik (2000), given certain values, an organizational culture emerges from a combination of micro and macro "values". In the configuration of the "national culture", a sense of belonging, excitement, fun, enjoyment, warm relationships with others, self-fulfillment, being well respected, a sense of accomplishment, security, and self-respect are the elements of micro-values. Organizational culture is therefore determined by the national culture. In other words, organizational culture emerges from and is significantly influenced by national culture. According to Sousa-Poza et al. (2001), the corporate culture is also a function of the ethnological culture. They found that the combination of high power distance and individualism favors tasks culture. Low power distance and individualism favors people cultures. Low individualism favors outward culture. They conclude that individuals tend to not follow prescribed behavior when it is in conflict

with their ethnological cultural values. National culture can influence the leadership style, which in turn influences the organizational culture. Leadership is the most significant factor in forming the company culture. According to Lok and Crawford, national culture also affects how organizations are structured and managed. For example, organizations managed by ethnic Chinese in Hong Kong have a high power distance preference and Confucian values are often associated with obedience, respect of authority and loyalty. In conclusion, the literature shows that national cultures have a great deal of influence on the leadership style of organizations, which in turn shapes the organizational culture and subsequently enhances employees' satisfaction and commitment.

2.4 Total Quality Management (TQM)

"Total Quality Management (TQM)" has been broadly recognized since the mid-1980s. It combines theories, techniques, quality strategies and methods for attaining excellent quality and attention to the important of management role's (Richardson, 1997). Morgan and Murgatroyd (1997) cited the "American Federal Office of Management" definition of TQM as "a total organizational approach for meeting customer needs and expectations that involves all managers and employees in using quantitative methods to improve continuously the organization's processes, products, and services". Saylor (1996) and Creech (1994) also argued that a TQM system must inclusive every product quality mindset, quality orientation, activity and process. All levels in organization improve by quality management system. Results of TQM implementation showed success in improving an organization's physical performance in terms of financial achievements (Hendricks and Sinfhal, 2001) and product quality (Agus, 2005) and in terms of invisible forms like customer satisfaction (Chol and Eboch, 1998; Rahman and Bullock, 2005), problem solving (Vouzas, 2004; Tenner and DeToro, 1992), and workforce commitment (Rahman and Bullock, 2005).

2.5 Evolution of TQM

Total Quality Management (TQM) can be traced back to Frederick W. Taylor's application of scientific management. In the mid-1940s, Dr. W. Edward Deming characterized TQM as remaining competitive in quality and service by a set of transforming principles that quality is not determined by the capabilities of workers but by the system of how work is performed (Rahman, 2004). Corresponding to the agreement of Deming and other organizational studies, the constructions for TQM embrace visionary leadership (Anderson et al., 1994; Waldman, 1994; Rahman, 2004; Soltani, 2005). Juran delineated the concept of TQM as a "trilogy": quality planning, quality control, and quality improvement (Rahman, 2004; Hafeez, et al., 2006). Crosby (1979) claimed, "Zero defects. Do it right the first time." This prevention based system emphasized prevention rather than inspection and defined quality as "conformance to requirement." He argued that quality management should be used to prevent the problem. Unlike Crosby, Kaoru Ishikawa countered that "zero defect" activities forced employees to achieve the high standard goal but did not teach them how to do it. He promoted the concept that "the next process is your customer", and believed that "soft (people)" issues are the key to solving problems and creating success (Ishikawa, 1985).

In the 1980s, manufacturing was flourishing and auto manufacturing was the focal point in statistical management control. The value of quality management was not limited in numbers of performance but in how to utilize the numbers to enhance performance. Thus, ISO and national quality evaluation standard (e.g., "the Malcolm Baldrige Award and the European Quality Award") was established. Quality management activities were detailed to whole

organizations and whole processes: the "total quality management" was acknowledged. Many organizations utilized TQM as a savior and then challenged the outcome.
Organization is a human system (Pike and Barnes, 1996). Organization should always take "human" issues into consideration while implementing OD interventions. In 1992, Wilkinson (1992) first argued that TQM has both "hard" and "soft" sides.

Recently, more scholars suggested TQM could be categorized into two distinct groups: soft TQM and hard TQM (Rahman and Bullock, 2005; Vouzas and Psychogios, 2007; Fotopoulos and Psomas, 2009; Lenka et al., 2010). Rahman (2004) identified that the hard TQM engages more statistical techniques while soft TQM is primarily concerned with "people" and the behavioral aspects of TQM. Vouzas and Psychogios (2007) classified the management tools and techniques as hard aspects of TQM and management concepts and principles as the soft side of TQM.

2.5.1 Leadership

Top management must commit to the TQM effort. They should be actively involved in all quality improvement processes, and strongly encourage all employees to participate. Leadership is the ability of management to create goals, to establish values, to empower employees, and to pursue quality improvement. They should be familiar with the concepts and skills relating to quality. They should allocate adequate resources, both financially and non-financially, for quality education and training. They should aim at long-term success rather than short-term profits. Top managements' leadership improve organization activities also directly effect on TQM implementation (Puffer and McCarthy, 1996; Ahire and O'Shaughnessy, 1998).

2.5.2 Strategic planning

Strategic planning involves development and deployment aspects, incorporating employee participation and feedback regarding the vision and practical day-to-day implications. Strategic planning Examines how organizations determine their short and long term goals, and how organizations make plans to enhance relationships with customers, suppliers, and partners (MBQNA, 1995). Strategic planning investigated the firm's planning process and how quality requirements are integrated into comprehensive business planning. It also with the long and short -term plants, how operational performance and quality requirements are distribute to all work parts (MBQNA, 1995). Organization's operational process and strategic planning improve performance (MBQNA, 1995).

2.5.3 Customer focus

External and internal customer is two critical factors in the management quality practices (Lorente and Rodriguez, 2004). Anderson et al. (1994) proposed this element as customer-driven focus. Rampersad (2001) proposed that everyone in organization should consider continuous improvement as one's daily life to comprehend customer satisfaction. Like Toyota's successful sales experience, Toyota's vehicles are designed by customers' need, not by a top executive's opinion (David and Liker, 2007; Liker, 2004). In a way, quality can rely on customer satisfaction.

2.5.4 Information and analysis

Information and analysis, serves as the foundation for the aforementioned dimensions, providing data and information to help management and employees analyze, assess, remediate, and improve operations, and support quality, continuous improvement programs. Jack et al. (2001) notes the Information and Analysis category focuses on how the organization selects, manages, and uses information and data to support key company processes, and improve company performance. This category, with its emphasis on information and systems and its circumspect review of the accompanying hardware and software infrastructure, is indeed a keystone in the Baldrige framework. Cutshall (2001) studied the significance of information and analysis as a component of a leadership model, and determined that indeed this category is vital to success in executive leadership. Lee, Rho, and Lee (2003) acknowledged the critical nature of the information and analysis function, commenting that organizations pursuing quality goals purposefully ensure the availability of timely, accurate, and quality data for all key users, and assert that data and information are key components of the organization's total quality system. Kumar (2007) stated that the initial emphasis of the award criteria in 1992 was on deriving information from data, and in 2005, information was recognized as a 'knowledge asset' which needed to be managed. Hence, the information and analysis function is an integral component of the organization's quality framework, and essentially supports all of the other categories (Prybutok and Cutshall, 2004).

2.5.5 Process management

Process management focuses on improving efficiency and timeliness, reducing costs and resource requirements, and simplifying systems and procedures by reducing non-value-added steps. Effective organizations function in terms of horizontal work flows. They design processes in ways that prevent problems rather than react to them (Seymour, 1994). Examines how organizations determine their core competencies and work systems, and how they design, manage and improve their key processes to implement those work systems. According to Garvin (1991), the poorest performing organizations have little understanding of their fundamental processes. They have not designed the process flow diagrams, measured those processes, or controlled those using statistical methods. Effective organizations pursue improvements to their fundamental processes aggressively.

2.5.6 Human resource focus

Garvin suggested that effective organizations should unleash their employees' full potential, enabling them to act in the interest of customers without getting prior approval (Garvin, 1991). Dessler (2000) showed that human Resource Management (HRM) describes as policy approaches and practices that require to develop and fulfilling the "peoples" or human resource characters in a managerial stage as well as employing, screening, educating, compensating, and assessing. Yang's (2006) examined the relationship between HRM functions and TQM implementation within the advanced technological companies, empirical results have been shown that HRM functions would have critical impacts on the customer satisfaction. Therefore, Yang (2006) declared that as firms try to make design and fulfill CS managing systems they also need to well-trained employees to perform and maintain these systems. Ott and van Dijk (2005) in their study examined HRM effects on customer satisfaction in a nursing and care industry scope. They developed and assessed eight HRM approaches in their study include personal enlargement plan, labor-shortage protocol, job-associated trainings, yearly accomplishment review, jobholders involvement, predictable job approaches, clear management procedure, and contributory management style. On the other

hand, customer satisfaction was in primarily dual association with the managerial style of the sector managers and in a minimum side has been affected by annual performance feedbacks and also forecasting work program. In an experimental survey carried out by Adsit et al. (1996) regarding to the correlations between workers attitudes, customer satisfaction, and divisional performances it found that the sides of employee views specially team involvements and performance assessment considerations were related positively to the customer satisfaction.

Business results

Schiederjans and Lee (1994); Garvin (1988) showed that customer satisfaction, operational quality and Organizational competitiveness levels are the basic business aims for evaluate business results. Business results include both financial and non-financial results achieved by the company. It is believed that leadership drives the enablers leading to results excellence. Business results refer to organizational achievements and excellences. The reflection of organizational excellence is exhibited by improved operational and financial results, improved business strategy, improved organizational effectiveness, improved business processes, improved organizational capabilities, and improved organizational performance practices (Fredendall and Douglas, 2004; Sila and Ebrahimpur, 2003; Mellat-Parast et al., 2007).

2. 6 TQM and National Culture

Quality management implantation is popular in these decades. A number of scholars in management analyze what quality management is and should be in different frameworks. While discussing total quality management, the majority of papers refer to Malcolm Baldrige or some other national quality award. The Malcolm Baldrige National Quality Award criteria are frequently assumed to be one way to codify TQM practices. Reviews of current literature suggest that TQM is a set of philosophy-like principles and the national quality award is a set of guidelines used to evaluate an organization's performance. Flynn and Saladin (2006) in their study found that some Baldrige criteria are consistent with Hofstede's cultural dimensions. They then examined the relationship between Baldrige constructs and national cultural dimensions. The results show that with the Baldrige constructs work success has higher levels of uncertainty avoidance, power distance, collectivism and masculinity (Flynn and Saladin, 2006).

Pun (2001) studied the cultural effect on TQM in Hong Kong and China enterprises. He concluded that the traditional Chinese values have no significant influence on promote the adoption of TQM in China. In other words, he suggests that Hofstede’ s long-term orientation or Confucian dynamism has no significant influence on TQM adoption.
Largrosen (2003) studied the influence of national culture on the views of the values of TQM within a multinational firm. Many of his hypotheses were rejected in the study. However, he still could conclude a few significant relationships. He found that some values of TQM are affected by the dimensions of individualism-collectivism and uncertainty avoidance.

3. Methodology and survey instrument

The survey questionnaire was comprised of the MBNQA TQM elements and the Hofstede’s national culture elements. Respondents were asked to rate their perceptions and experiences on cultural elements and TQM elements on a 5-point Likert-type scale. Each element was

comprised of two questions, and they are showed in the Appendix section. To ascertain the cultural dimensions underlying the 10 items, factor analysis was conducted using a principal component factor method and varimax rotation to confirm the factor structure. Five factors were generated automatically by SAS using eigenvalues test (Kaiser-Guttman) which indicates that five factors should be used because only five eigenvalues are greater than 1 (Kim and Mueller, 1983). Cronbach's *a*s were calculated with all the dimensions pointing to acceptable values (all greater than 0.73). Table 1 shows the factor structure for our instrument measuring national culture. The structure indicates that our instrument is valid and reliable.

Table 1: Factor structure of national culture (method = principle component and rotation = varimax)

Uncertainty avoidance1	-0.04	0.79	0.07	0.15	0.05
Uncertainty avoidance2	0.09	0.85	0.10	-0.06	- 0.04
Individualism1	0.05	0.07	0.81	0.14	- 0.07
Individualism2	0.03	0.12	0.80	- 0.14	0.04
Power distance1	0.07	- 0.00	0.08	0.79	-0.12
Power distance2	0.18	0.20	- 0.18	0.57	0.34
Masculinity1	0.04	- 0.31	0.03	0.41	0.65
Masculinity2	0.15	0.08	- 0.01	- 0.08	0.98
Long term orientation1	0.94	- 0.05	0.00	0.14	0.06
Long term orientation2	0.94	0.09	0.05	0.05	0.15

The sample was collected from 300 managerial personnel of multinational companies from Iran in 14 companies. The survey participants were located in Iranian multinational electrical manufacturing. Table 2 provides further demographic information about this research. These companies were chosen because of their availability, but also because they represent a wide range of variation in their cultural dimension measures. Most participants were mid-level managers who had been exposed to TQM implementation efforts in varying degrees. There were 300 responses available for our study. Executives of an organization can exert important influences on the actions, activities and processes of the organization because they are the organization's leaders and, typically, its most powerful actors (Andrews, 1987; Mintzberg, 1973).

As predicted by the "upper echelons" perspective (Hambrick and Mason, 1984), managers' activities like strategic decision-making and environmental scanning have been found to affect company outcomes such as performance and structure (Anand et al., 2002; Floyd and Wooldridge, 1992). Those powerful players often make a difference through building, and managing the organizational culture (Chatman and Cha, 2003; Hambrick and Finkelstein, 1987). Culture refers to "a system of shared values and norms" (Chatman and Cha, 2003). By recruiting the right kind of people with cultural fit, training them to understand the shared

values, and rewarding the behavior that aligns with the culture, the managers can embed their value systems into the organizations. Hence, the values and perceptions of those managers may well reflect the culture or values of the organizations.

Table 2: Sample demographics

Name of Company	N	Percentage
ABB (PJSC)	20	0.067
Alborz Electrical Industries Ltd	24	0.08
AMA Industrial Co	26	0.087
Butane Industrial Group	20	0.067
Electro Kavir	22	0.073
Iran Transfo Corporation	27	0.09
Jaboun Co	18	0.06
Kahrobagostar Co	21	0.07
Kerman Tablo	17	0.057
LG Electronics Inc	18	0.06
LG International Corporation Tehran	20	0.066
Mitsubishi International Corp (Iran) Ltd	23	0.077
Schneider Electric Iran	19	0.063
Sepehr Electric Co	25	0.083
Total	300	1

4. Results and discussion

The mean and standard deviation values of each element are showed in table 3.

Table 3: Survey result with a mean and standard deviation scores

	Mean	SD
Uncertainty avoidance	3.07	0.93
individualism	2.87	1.07
Power distance	3.65	0.89
masculinity	3.51	0.65
long term orientation	4.01	0.81
Leadership	3.94	0.78
Strategic planning	3.49	0.79
Customer and market focus	4.25	0.91
Information and analysis	3.30	0.90
Human resources focus	3.57	0.89
Process management	3.75	0.79
Business performance	3.65	0.69

A majority of our respondents had international business experiences, which might have influenced their cultural perceptions to a certain degree. Table 4 summarizes our results where cultural elements are regressed on TQM elements.

Uncertainty avoidance: We expected managers from high uncertainty avoidance culture to be more favorable of implementing various TQM elements. Although relatively less significant (p, 0.10), our results point out uncertainty avoidance affects two TQM elements (Information and analysis and human resources focus). We argue that managers with "high uncertainty avoidance culture favor routines and prefer to avoid uncertainties in their decision making processes". They also prefer having clear rules and guidance. These characteristics favor the use of quality based data and standardized reporting system. Moreover, they are motivated by having reasonable protocols and procedures thus are aficionados of HR-related issues like empowerment and training.

Individualism: We expected organizations members that have high individualism to be less favorable of implementing TQM, especially the "hard" (more technical and routine) elements (Samson and Terziovski, 1999). However, our results are mixed. Individualism has a significant negative impact on "Information and analysis," but has a significant positive impact on "process management" and "business performance." This result suggests people in individualistic organizations are less comfortable and less willing to adopt hard TQM elements. However, we argue individualistic organizations emphasize on various performance measurements, and they would be more likely to succeed in implementing process management, which requires frequent changes. Further, we argue an "individualistic organization is more prone to focus on visible tasks with results, rather than considering the potential impact of resulting organizational harmony and chemistry". Therefore, individualism significantly impacts on "business performance."

Power distance: We expected power distance to be significantly related to various TQM elements. As expected our results suggest that power distance is the most influential cultural element and impacts all seven TQM elements. This indicates that high power distance organizational culture enables a higher likelihood of successful TQM implementation TQM. We argue that "managers from high power distance culture can tolerate power inequality better – hence they are more inclined to follow order from the top management". In other words, in high power distance organizations, when the top management perceives the virtues of TQM and sets the tone to implement the plan, employees respect the decision and will tend to implement vigorously. This result supports the study performed by Mathews et al. (2001), which concludes power distance is a very influential cultural element that can make the difference in quality management deployment. It may be more difficult to implement "strategic planning" element of TQM in a low power distance culture. Similarly, when people in an organization are willing to accept the differences in power, it would be easier to facilitate TQM with respect to "customer and market focus.

Masculinity: We expected that be negative relationship between masculinity and various "TQM elements since too much assertiveness may cause more conflicts among employees and thus obstructs successful TQM implementation". However, our results point out masculinity has no significant affect to TQM elements except "business performance." We argue managers who are conclusive tend to be more focus on an issue and present more intention to the ultimate results (Brousseau et al., 2006). Otherwise, managers in masculine culture are value and result-oriented the ultimate outcome the most.

Long-term orientation: We expected the long-term orientation to be positively correlated to various TQM elements. The result indeed supports our expectation where we find that long-term orientation significantly affects three TQM elements (strategic planning, process management and business performance) in positive ways. We argue the TQM is not a quick fix. Quality improvement does not occur overnight. It requires perseverance and long-term strategic planning, which involves the ways business processes are managed in an ongoing manner. As a result, it asks for strategic planning and process management. Although less significant (p, 0.10), long-term orientation affects "business performance" element as well. "In a culture underlining long-term orientation, TQM implementation can be initially denied due to its resistance to change. However, it will be adopted and propagated once the employees realize the positive outcomes it can bring for many years to follow".

Table 4: Regression analyses of cultural elements on TQM elements (n=300)

	Uncertainty avoidance	individualism	Power distance	masculinity	long term orientation
Leadership	0.005	0.034	0.146 *	0.014	0.083
Strategic planning	0.032	-0.002	0.165 *	-0.023	0.275 * * *
Customer and market focus	-0.045	-0.059	0.327 * * *	0.109	0.065
Information and analysis	0.147†	-0.131 *	0.126†	0.035	0.003
Human resources focus	0.129†	-0.021	0.259 * * *	0.090	0.061
Process management	0.056	0.114 *	0.168 * *	0.079	0.190 * *
Business performance	0.024	0.118 *	0.110†	0.323 * * *	0.115†

Notes: *p, 0.05; * *p, 0.01; * * *p, 0.001; †p, 0.10

5. Conclusion

Total quality management (TQM) represents a widely accepted management practice whose principles have been embraced by many organizations (Dean and Bowen, 1994). Evolving over several decades, TQM today is viewed as an integrated, systematic, organization-wide strategy to continuously improve the products, services and processes of an organization (Waldman, 1994). Research on TQM shows that, organizations adopting TQM practices experience a great variety of results, ranging from implementation failure (Harari, 1997) to increased competitive advantage (Douglas and Judge Jr., 2001; Powell, 1995) and improved organizational performance (Hendricks and Singhal, 1997; Reed, Lemak, and Montgomery, 1996). A variety of authors have identified national culture, or: "the collective programming of the mind" (Hofstede, 2001) and organizational culture, or: "the shared set of values, beliefs and assumptions" (Schein, 1996), as major determinants for TQM implementation (Sousa-Poza, Nystrom, and Wiebe, 2001; Tata and Prasad, 1998). Moreover, some authors see a root cause of TQM implementation failures in the universal applicability of today's TQM approaches, regardless of organizational context and environment (Dean and Bowen, 1994). Cultural influence not only comes from organization culture but also from national culture. It is argued that a review of the quality awards and critical success factors for total quality management (TQM) has revealed that culture influences the understanding of core TQM concepts in a country and it also has an effect on the operationalisation of TQM (Kumar, 2006). The organizational literature confirms that environmental factors, especially socio-

cultural factors, have a major influence on business practice and on organizational performance (e.g. Oliff, Arpan and DuBois, 1989; Prasad and Tata, 2003).

TQM also tends to be influenced by the internal cultures of organizations, which in turn reflect national cultures but may also exhibit their own distinct characteristics (Alsughayir and Zairi, 2008). National culture may contribute to the failure of a TQM implementation process. Literature has reported implementation of TQM eventually brings some degree of benefits to the firms. However, implementation of TQM does not warrant a positive consequence. In this research, we took an initial step to find the links between national culture and TQM elements. We found substantial results that "power distance" "long-term orientation" and "individualism" are more critical elements that can impact the TQM implementation effort. Future research may build on our study to further investigate these intriguing relationships.

5.1 Limitations and future research

In this study there were some limitations. For example, we did not control some relevant variables, such as firm size, education and gender, participants' age even though they are important to TQM implementation. Further, while a small number of managers' perceptions about one organization's culture may be different from the overall perception shared by all employees (Kumar et al., 1993), we surveyed only managers in the one kinds of industry. This limits the generalizability of our study. Thus, future study can utilize other industries and services. However, we have a large sample and the results point out several significant relationships between culture elements and TQM elements. This suggests that knowledge of organizational culture context is useful for predicting quality management practice. This study was conducted in Iran. Future research should include a broader sample from surveyed national cultures.

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