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The Role of Person-Organization Fit in TQM: Influence of Values and Value Congruence on TQM Orientation

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1. Introduction

Despite the fact that total quality management (TQM) philosophy, approach and practices have widely been adopted by a substantial number of organizations in the last decades, the evidence of its positive influence on organizational-level and individual-level performance variables is somewhat mixed (Choi & Behling, 1997; Coyle-Shapiro & Morrow, 2003). When it comes to explaining why TQM initiatives succeed or fail, usually the elements, such as process management, implementation issues, training, top management support, as well as technical and cultural issues, have been cited (e.g. Reger et al., 1994). However, since TQM has been defined as a system level management approach (Sitkin, Sutcliffe & Schroeder, 1994), varying attitudes and behaviors of individual employees, as well as the specific factors that may differentially effect individual variability, have seldom been considered and have not been emphasized in TQM literature (Coyle-Shapiro & Morrow, 2003).

On the other hand, since individuals cannot be isolated from their work environment, researchers have started to emphasize the concept of person-environment fit, and its significant influence on various work-related outcomes (Kristof-Brown, Zimmerman & Johnson, 2005). In its most general sense, person-environment (P-E) fit can be defined as the congruence, match, similarity, or correspondence between the person and the environment. Within this general definition, several different dimensions have evolved to conceptualize person environment fit (Kristof, 1996). The first and the most important dimension, which is focused in this study, is the supplementary versus complementary distinction. Supplementary fit occurs when a person possesses characteristics, which are similar to others in an environment, whereas complementary fit occurs when a person possesses different characteristics than others, which add to the environment what is missing.

Person-organization fit (P-O Fit) is an important and broadly studied type of P-E fit. In general terms, P-O fit concerns the antecedents and consequences of the compatibility between individuals and the organization in which they work (Kristof, 1996). The crucial importance of a good fit between the individual and the organization has comprehensively been stressed by several researchers and practitioners, who have contended that P-O fit is a key factor in maintaining a committed and flexible workforce that is necessary in a competitive business environment (Kristof, 1996; Coyle-Shapiro & Morrow, 2003). Empirical
evidence yielded that high level of P-O fit is related to positive attitudinal and behavioral outcomes (Bretz & Judge, 1994; O’Reilly, Chatman & Caldwell, 1991; Posner, 1992).

Although TQM is an organization-wide system level approach and management philosophy, perception and adoption of quality orientation, as well as involvement and participation to the quality oriented practices, are individual level constructs. Thus, having congruence between the individuals and their organizations can be considered as a very important factor to enhance the adoption of quality orientation. However, to the best knowledge of the author, no research to date has focused on the role and influence of P-O fit as value congruence on the employees’ adoption of TQM orientation. Therefore, this study is undertaken to bridge the gap in the literature by focusing on the influence of supplementary fit between employees work values and organizational values on the adoption of TQM orientation. The current research addresses linear associations of personal and organizational work values, as well as curvilinear relationship of the significant interactions of those value dimensions on TQM orientation. Main purpose of this research is to determine how P-O fit, in terms of personal and organizational values and their congruence and discrepancies, influences the adoption of TQM orientation, which includes participation in teamwork and involvement in continuous improvement. To examine those linear and curvilinear associations among various components, polynomial regression and surface response analyses were employed. Furthermore, three-dimensional graphs were also provided to better explain the proposed and yielded results.

This study contributes to literature in several aspects. First, unlike most research, which examines TQM orientation as an independent variable, this study specifies this concept as a dependent variable. Such an approach elevates current work as it responds to the need of research examining factors that influence adoption of quality orientation and consequently application of TQM approach. Second, instead of only investigating the linear effects of personal and organizational values on adoption of quality orientation separately, this study focuses on a rather neglected aspect of the P-O fit by examining the combined curvilinear effects of those values. In particular, this study posits that personal and organizational values have significant relationship with TQM orientation, as well as congruence and discrepancies between those values influence TQM orientation in a non-linear way. Despite the widely acknowledged importance of P-O fit theory, prior attempts have not generated sufficient understanding of its importance in implementation of TQM approach. Third, the results of this study are based on polynomial regression and surface response analyses in order to better examine the significant linear and curvilinear relationships among constructs, and to overcome methodological problems related to difference scores and other traditional congruence measures (e.g., profile correlations), which are commonly used in value congruence research. Finally and most importantly, despite the importance of individual differentiations in TQM implementations, to our best knowledge, this study is among the first attempts to explore P-O fit components as antecedents of adoption of TQM orientation.

2. Literature review and theoretical framework

2.1 Total Quality Management (TQM) orientation

The definition of TQM did not evolve as a result of the academic analysis of existing management literature and organizational theory. It has been mainly built on the practice-
oriented studies of Juran (1989), Deming (1986), and Ishikawa (1985). Based on the initial success of applying statistical process control and systematic planning, these researchers included in their definitions issues such as employee motivation, teamwork, continuous improvement, as well as the relations between customer satisfaction and economic results. Hence, TQM has a solid foundation of statistical thinking, along with a number of prescriptive management ideas. Lately, TQM programs go beyond implementing technical solutions and management practices, which focus on organizational members working together to meet customer requirements (Hackman & Wageman, 1995). Thus, TQM cannot be analyzed by just focusing on visible technical interventions, but by gaining a comprehensive understanding of the underlying assumptions of individuals, which are the key components for the success of those interventions.

TQM orientation, on the other hand, can generally be defined as the employees’ awareness of the importance of quality and felt moral responsibility for achieving it (Coyle-Shapiro & Morrow, 2003). It broadly shows to what extent employees support and adapt to the TQM initiatives. Most research in TQM literature identify mainly three core components for TQM orientation, which are customer satisfaction, continuous improvement and teamwork (e.g., Dean & Bowen, 1994; Coyle-Shapiro & Morrow, 2003). However in this study, since we specifically focus on employees’ individual differences and congruence with the organization, we include teamwork and continuous improvement, which together constitute TQM orientation. Teamwork has broadly been defined as employees’ willingness to collaborate and cooperate in different levels from work group to interorganizational activities, as emphasizing the quality of group functioning within TQM framework (Dean & Bowen, 1994). Continuous improvement has been defined as the recognition of and felt responsibility for quality improvement and involvement in quality enhancing activities and TQM practices (Coyle-Shapiro & Morrow, 2003). Continuous improvement suggests that employees continuously change their thinking and the way of doing business, which they adapt in their work.

Even though TQM is considered as an organization-wide approach, TQM orientation as involvement and participation to the quality oriented practices is an individual level construct. Nevertheless, surprisingly little research on TQM has emphasized individual differences and variations (Coyle-Shapiro & Morrow, 2003). Coyle-Shapiro and Morrow (2003) also stated that the achievement of TQM goals would be limited without considering individual-level factors, such as values and attitudes. An important model that takes into consideration individual differences within the framework of TQM orientation is person-organization fit. According to the P-O fit model, desirable outcomes can be achieved when employees’ values, abilities or goals are congruent with the organizational characteristics. Hence, examining the extent to which employees’ individual differences or congruences with the organization would substantially contribute to our current understanding and generalizability of TQM and P-O fit models.

2.2 Person-Organization (P-O) fit

Person-organization (P-O) fit has received a considerable attention from researchers and practitioners as being one of the most important workplace variables. P-O fit has been defined as the extent to which an employee’s characteristics are compatible with organizational characteristics (Kristof, 1996). One of the fundamental definitions of P-O fit
has been proposed by Kristof (1996), as “the compatibility of people and organizations that occurs when (a) at least one entity provides what the other needs, or (b) they share similar fundamental characteristics, or (c) both” (p. 271).

Empirical evidence suggests that P-O fit predicts many positive work-related attitudes and behaviors (Kristof, 1996; Verquer, Beehr & Wagner, 2003). For example, research has demonstrated that higher levels of P-O fit most likely results in higher levels of job satisfaction (e.g., Kristof-Brown et al., 2005; Chatman, 1989), organizational commitment (e.g., Cable & Judge, 1996; Bretz & Judge, 1994), organizational citizenship behaviors (O’Reilly et al., 1991; Ucanok, 2009), teamwork and performance (Posner, 1992), and organizational identification (e.g., Amos & Weathington, 2008), as well as lower level of turnover intentions (e.g., Saks & Ashforth, 2002; Cable & De Rue, 2002). In addition, P-O fit has been also found to influence job search and job choice decisions (Cable & Judge, 1996), along with recruiter perceptions of applicant suitability (Bretz & Judge, 1994).

In the literature, P-O fit has been conceptualized in different ways. Four commonly accepted ways of defining P-O fit include supplementary fit (i.e., when an individual possesses characteristics that are similar to existing organizational characteristics), complementary fit (i.e., when an individual fills a void or adds something missing in the organization), needs-supplies fit (i.e., when an individual’s needs are fulfilled by an organization), and demands-abilities fit (i.e., when an individual’s abilities meet the demands of the organization) (Muchinsky & Monahan, 1987; De Clerq et al., 2008).

Supplementary fit occurs when an employee possesses characteristics that are similar to characteristics existing in the organizational environment (Muchinsky & Monahan, 1987). In other words, when an employee’s characteristics are congruent to organizational characteristics, a supplementary fit exists. On the other hand, complementary fit occurs when an employee’s characteristics complement the characteristics of organizational environment (Muchinsky & Monahan, 1987). Thus, an employee has a kind of complementary fit when he or she possesses different characteristics that add to existing organizational characteristics. Needs-supplies fit occurs when an employee’s needs are fulfilled by the organization (Caplan, 1987). Hence, an employee has needs-supplies fit to the extent that the organization satisfies of this individual’s needs or preferences. Nevertheless, demands-abilities fit reflects the degree to which an employee’s abilities fit the demands of the organization (Caplan, 1987). According to this model, demands-abilities fit occurs when an employee possesses characteristics that are required for meeting organizational demands. In this study, we use supplementary fit, since supplementary fit has been empirically proven to be one of the most widely used P-O fit concepts as being associated with various work-related outcomes (Kristof, 1996; Ostroff, Shin & Kinicki, 2005).

2.3 Values and value congruence as P-O Fit

A substantial amount of research has emphasized the importance of congruence between the values of employees and organizations (Edwards & Cable, 2009; Amos & Weathington, 2008; Chatman, 1989; Kristof, 1996; Ostroff et al., 2005). Consistent with prior research (De Clerq, Fontaine & Anseel, 2008; Schwartz, 1992), in this study we define values as general beliefs about the importance of normatively desirable behaviors. Values hold by employees guide employees’ actions and decisions, whereas organizational value systems provide
norms that define how organizational members are expected to behave and how organizational resources should be allocated.

Schwartz (1992) has proposed a comprehensive theory about the content of individual value systems. His systematic value theory has also been empirically validated (e.g., Schwartz et al., 2001). Individual value dimensions of Schwartz model are presented in Table 1.

<table>
<thead>
<tr>
<th>Value</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conformity</td>
<td>Restraint of actions, inclinations, and impulses likely to upset or harm others and violate social expectations or norms</td>
</tr>
<tr>
<td>Goal-orientedness</td>
<td>Living and working to fulfill a purpose, not giving up</td>
</tr>
<tr>
<td>Hedonism</td>
<td>Pleasure and sensuous gratifications for oneself</td>
</tr>
<tr>
<td>Materialism</td>
<td>Attaching important to material goods, wealth and luxury</td>
</tr>
<tr>
<td>Nature</td>
<td>Appreciation, preservation and protection of nature</td>
</tr>
<tr>
<td>Power</td>
<td>Control or dominance over people</td>
</tr>
<tr>
<td>Prestige</td>
<td>Striving for admiration and recognition</td>
</tr>
<tr>
<td>Relations</td>
<td>Having good interpersonal relations with other people and valuing true friendship</td>
</tr>
<tr>
<td>Security</td>
<td>Safety, harmony, and stability of society or relationships</td>
</tr>
<tr>
<td>Social Commitment</td>
<td>Preservation and enhancement of the welfare of all people</td>
</tr>
<tr>
<td>Stimulation</td>
<td>Excitement, novelty, and challenge in life</td>
</tr>
</tbody>
</table>

Table 1. Definitions of Schwartz’s value model.

Even though Schwartz’ theory has originally been developed as a theory of life values, it has also been widely used by other researchers to measure work values as well (e.g., Cable & Edwards, 2004; De Clerq et al., 2008). In the recent studies (De Clerq, 2006; De Clerq et al., 2008), it was demonstrated that Schwartz’ value theory can provide a comprehensive framework to measure employees’ work related values and their perceived organizational values. In our current study, we also used the work value survey adapted and tested by De Clerq and his colleagues (De Clerq et al., 2008). In their adapted version, they defined three bipolar factors that are summarized as:

1. Self-Transcendence (i.e., sacrificing selfish and individualistic concerns for the benefit of the organization and other colleagues) versus Self-Enhancement (i.e., enhancement of employee’s own personal interests at the expense of the organization’s and other colleagues’ interests),
2. Openness to Change (i.e., following own intellectual and emotional interests in unpredictable and uncertain directions) versus Conservation (i.e., trying to preserve the status quo and preference of certainty in relationships), and
3. Goal-Orientedness (i.e., living and working to fulfill a purpose, not giving up) versus Hedonism (i.e., pleasure and sensuous gratification for oneself) (De Clerq, 2006; De Clerq et al., 2008).

In this framework, as a result of the bipolarity, consequences of any value are expected to have consequences that may conflict with their opposite value type. In other words, opposite consequences and associations are likely expected between two opposite values that constitute the poles of a bipolar factor and a third variable.
Value congruence, on the other hand, can be defined as the similarity between values held by individuals and organizations. Value congruence or the fit between employees’ individual work values and perceived organizational values is widely accepted as supplementary person-organization (P-O) fit (Edwards & Cable, 2009; Kristof-Brown et al., 2005; Verquer et al., 2003). Research demonstrated that when employees’ values fit the values of their organization, they are most likely satisfied and identified with and committed to their organization, and seek to maintain the employment relationship (Edwards & Cable, 2009; Amos & Weathington, 2008; Kristof-Brown et al., 2005; Verquer, Beehr, & Wagner, 2003). These consequences of value congruence are beneficial for both employees and organizations, as those outcomes foster extra-role behaviors linked to positive employee attitudes (Podsakoff et al., 2000).

Subjective fit captures employees’ own perceptions about the extent to which they feel like they fit into their organization, whereas objective fit compares an employee’s values with organizational values as seen by other people, such as managers or coworkers (Kristof-Brown et al., 2005). While both approaches seem feasible and are widely used, in our study, we conceptualize and assess value congruence using subjective fit, which entails the congruence between an employee’s own values and his or her perceptions of the organization’s values (Kristof-Brown et al., 2005). Because the conceptual aim of our study is to explain why P-O fit in terms of value congruence relates to employee attitudes, as TQM orientation. Employees’ attitudes, such as TQM orientation, are subjective and therefore are expected to associate more strongly with the congruence between employee and organizational values as seen by the employee himself/herself than as seen by other members of the organization (Kristof-Brown et al., 2005; Edwards & Cable, 2009).

Another important issue for P-O fit studies, as recently emphasized by Kristof-Brown and colleagues (2005), is the necessity of having commensurate measures for supplementary P-O fit. Commensurability can be defined as describing both individual work values and organizational values with the same content dimensions (Kristof, 1996). Thus, in our study, we only include commensurate dimensions as work and organizational values.

3. Hypotheses development

Based on the arguments above, it is proposed that employees would be TQM oriented because certain individual work values may function as guiding principles in their organization and work environment. Coyle-Shapiro and Morrow (2003) suggested that individual differences might play an important role in predicting TQM orientation of the employees. In addition, recent research has also yielded that work and organizational values might be considered as an important source for employees’ attitudes and behaviors (Edwards & Cable, 2009; Amos & Weathington, 2008). Therefore, we posit that there will be an association between the importance that employees attach to work related values and their TQM orientation. As values are fundamental properties of both people and organizations (see Cable & Edwards, 2004; Kristof-Brown et al., 2005), we also focus on their independent relationships with TQM orientation.

3.1 Self-transcendence / self-enhancement and TQM orientation

By definition, self-transcendence reflects the collectivist attitudes, which have substantial precedence of group goals over personal goals (Hofstede, 1980, 2001). In earlier studies,
results have revealed that individuals, who hold collectivistic values or norms, are more likely expected to demonstrate collaborative and cooperative behaviors, and to perform in a team or work group environment, in which individual goals are subordinated to, and are aligned with the goals of the group (Wagner, 1995; Kirkman & Shapiro, 2001). Effective teamwork requires cooperation and sharing among individual employees and subordinating individual local interests to collective global interests. As such, employees’ willingness or ability to embrace teamwork can be expected to depend on the extent to which they value self-transcendence. Employees, who hold self-transcendence as their value, greatly emphasize membership in a group and are prepared to look out for the well-being of the group even at the expense of their own personal interests (Wagner, 1995; Eby & Dobbins, 1997). On the other hand, research has also yielded that employees, who have precedence on self-enhancement, show greater resistance towards working in teams and negatively affect the performance of the work groups (Kiffin-Petersen & Cordery, 2003; Kirkman & Shapiro, 2001). Therefore, we hypothesize:

Hypothesis 1a: There will be a positive relationship between self-transcendence and teamwork.

Hypothesis 1b: There will be a negative relationship between self-enhancement and teamwork.

TQM has, by tradition, been defined as a collective approach using quality circles and empowered team-based methodologies to achieve continuous improvement (Dale, 1999). Continuous improvement, advocated by TQM, is based on members complementing and sharing their knowledge, working together and creating organizational learning for successful improvement initiatives (Harnesk & Abrahamsson, 2007). Thus, employees, who put emphasis on self-transcendence, are expected to put voluntarily more effort on collaborative team and workgroup activities, such as participating quality circles, and to show less resistance when it comes to apply changes throughout the organization for the well-being of the whole. On the other hand, self-enhancement or individualistic approach appears to be largely unworkable and incompatible with the original TQM’s team-based philosophy and continuous improvement activities (McKenna & Beech, 2002). In other words, employees, who emphasize self-enhancement, are not expected to contribute to the improvement attempts, unless those attempts provide them with personal benefits. Therefore, we hypothesize:

Hypothesis 1c: There will be a positive relationship between self-transcendence and continuous improvement.

Hypothesis 1d: There will be a negative relationship between self-enhancement and continuous improvement.

3.2 Openness to change / conservation and TQM orientation

In our value framework, openness to change represents continuous attempt for creating and exploring new ideas and ways of doing business (De Clerq, 2006). A prerequisite for attaining development-oriented learning focused on improving quality for an organization’s change initiatives is to have employees working in teams with a synergy for questioning established routines through alternative thinking (Ellström, 2001). Implementation of
empowered, self-managing, innovative teams in TQM framework involves extensive methodological, structural and philosophical changes (Kirkman et al., 2000). For an employee to display a high performance in such a team environment, he/she needs to have a strong precedence on high tolerance for change. Sufficient evidence exists to suggest that an employee’s receptivity to organizational change may be an important factor in their preference for working in a team (Kiffin-Petersen & Cordery, 2003). Hence, openness to change would most likely act as a buffer to reduce employee resistance and maintain their continued goodwill in the face of team-based forms of work organization that accompany the significant organizational changes. Therefore, we hypothesize:

Hypothesis 2a: There will be a positive relationship between openness to change and teamwork.

Hypothesis 2b: There will be a negative relationship between conservation and teamwork.

Openness to change assumes the ability to adopt new behaviors or strategies when old ones are no longer viable (Jerez-Gomez et al., 2005). Within the framework of TQM, embracing change, testing assumptions, shifting paradigms, tolerating ambiguity and taking risks, which are among the attitudes of employees open to change, are considered as crucial components for continuous improvement (Napolitano & Henderson, 1998; De Jager et al., 2004). In addition, commitment to change has been revealed as one of the most important and major motivations of individuals for introducing TQM, and one of the key elements for continuous improvement according to Kaizen (Dale, 1999). Employees, who emphasize openness to change as a value, are essential elements to create an organization capable of regenerating itself and coping with new challenges by leading the process of change through continuous improvement (Jerez-Gomez et al., 2005). On the other hand, in the cultures, in which employees has precedence on conservation, companies will not take avoidable risks, initiate continuous changes and adopt innovations if its effectiveness and value have already been proven (Waarts & van Everdingen, 2005). Thus, we hypothesize:

Hypothesis 2c: There will be a positive relationship between openness to change and continuous improvement.

Hypothesis 2d: There will be a negative relationship between conservation and continuous improvement.

### 3.3 Goal orientedness / hedonism and TQM orientation

Following the literature, a team can be defined as a social system of three or more people, which is embedded in an organization, whose members collaborate on a common goal (Salas, Cooke & Rosen, 2008). Teams are social entities composed of members with high task interdependency and shared and valued common goals (Salas et al., 2008). Teamwork is a set of interrelated and flexible cognitions, behaviors, and attitudes that are used to achieve desired mutual goals. Thus, as one can understand from the definitions, having common and shared goals is the core and fundamental element of being a productive and innovative team. Goal-oriented employees can be motivated towards the team goals and contribute to team success without giving up. In TQM framework, a defining basic feature of self-managing and empowered teams, for instance, is that team members contribute to a common goal and motivate themselves and each other to do so (Ellemers, Gilder & Halsam,
Salas and his colleagues (2008) also suggest that self-managing teams containing employees, who value hard work and achievement, are expected to show higher levels of performance. On the other hand, hedonist employees are not expected to put effort to achieve teams’ common goals, since they focus on their personal lives and needs. Thus, employees having hedonism as a value, are not considered as a good fit for teamwork. Hence, we hypothesize:

Hypothesis 3a: There will be a positive relationship between goal-orientedness and teamwork.

Hypothesis 3b: There will be a negative relationship between hedonism and teamwork.

Goal orientedness includes setting clear goals and results that provide targets for change, and opportunities to assess whether change has occurred during improvement initiatives. During continuous improvement activities, results of the changes are periodically measured and compared with the goals set, thus emphasis is on the goal accomplishment and achievement. According to the Juran (1989), Ishikawa (1985) and Dale (1999), setting goals for improvement is one of the fundamental elements of continuous improvement. In fact, setting goals is the first step for planning quality improvement. Hence, goal oriented employees are the key players for those continuous improvement initiatives with their persistence on achievement and reaching the goals. Dale (1999) also proposed that employees with high goal-orientedness usually encourage other employees to establish goals for improvement of organization and also to commit to the achievement of those goals. According to Juran (1989), certain roles of employees and especially top management include, among others, establishing and deploying quality goals and stimulating improvement. The European Quality Award and the Malcolm Baldrige Quality Award also recognize the crucial role of leadership in creating the goals and systems that guide the pursuit of continuous performance improvement (Dale, 1999). Thus, based on the arguments above, we expect a positive association between goal orientedness and continuous improvement, while a negative relationship is expected between hedonism and continuous improvement, as hedonism being at the opposite end of the continuum. Therefore, we hypothesize:

Hypothesis 3c: There will be a positive relationship between goal orientedness and continuous improvement.

Hypothesis 3d: There will be a negative relationship between hedonism and continuous improvement.

3.4 Value congruence and TQM orientation

One of the most important explanations of value congruence effects is that value congruence promotes communication within organizations (Erdoğan, Kraimer & Liden, 2004). In the TQM context, communication refers to the open exchange of information through formal and informal interactions among organizational members that facilitates teamwork, continuous improvement and organizational learning (Edwards & Cable, 2009). In theory, value congruence foster teamwork, because having shared standards and values concerning what is important establishes a common frame for shared goals, as well as describing and interpreting events (Erdoğan et al., 2004). This common understanding promotes harmony
and collaboration among organizational and team members through the exchange of information. Having shared values, standards and understanding enhances the likelihood of success of continuous improvement initiatives by reducing the misunderstandings and conflicts among organizational members.

In addition, value congruence would increase predictability, which is defined as the confidence people have about how others will act and how events will unfold, because organizational members with shared values have similar motives, set similar goals, and respond to events in similar ways (O’Reilly et al., 1991; Edwards & Cable, 2009). Similarly, value congruence also promotes mutual understanding and reduces uncertainty through sharing knowledge and interpersonal communication (Berger, 2005). Uncertainty reduction effect of value congruence provides a basis for successful continuous improvement, which contains risk to a manageable extent and contributes to obtain more predictable outcomes.

Furthermore, recent research has also yielded that value congruence is positively related to organizational commitment and identification (Amos & Weathington, 2008; Edwards & Cable, 2009). Employees, who feel that their organization values the same things that they do, will likely have an emotional attachment to their organization. Organizational commitment and identification are important factors promoting teamwork, involvement, collaboration and extra-role behaviors (e.g., Van Knippenberg & Van Schie, 2000; Riketta, 2005). Employees, who identify strongly with their organizations, have a supportive attitude towards them. Thus, such employees would likely be willing to contribute to the organization through participation to teamwork, initiation of quality management activities and involvement to continuous improvement process.

Based on the above arguments, it is plausible to suggest that value congruence between employees and their employing organizations will have positive relationship with TQM orientation. Thus, we hypothesize:

Hypothesis 4a: There will be a positive relationship between value congruence and teamwork.

Hypothesis 4b: There will be a positive relationship between value congruence and continuous improvement.

4. Method

4.1 Sample and procedure

In order to test the proposed hypotheses empirically, the data were collected from white-collar employees working in 36 different organizations from Turkey, including banks, consultant firms, retail companies, public institutions and universities. Of the 520 employees surveyed, 219 employees provided usable responses, yielding a response rate of 42 percent.

All measurements included in the questionnaire were originally developed in English and translated into Turkish via the back-translation technique (see Brislin, 1980). Prior to administering the questionnaire, we conducted a pilot study, which revealed that scales were easily understood by white-collar employees targeted. Data was acquired via a structured questionnaire, which was distributed by our research assistant on site. Before handing out the questionnaires, our research assistant explained the purpose of the survey.
and noted that participation was completely voluntary. Furthermore, each questionnaire was also accompanied by a cover letter to ensure confidentiality. Respondents were asked to return the completed questionnaires directly to the research assistant to ensure their anonymity. No personal data was collected except demographics summarized below.

The average participant was 33 years old (standard deviation of 6.2 years). The participants were 68% male and 92% had at least a Bachelor’s degree (university graduates). Participants had worked for their companies for an average of 6 years (standard deviation of 5.4 years).

4.2 Measurement of Work and Organizational Values (WOV)

Work and organizational values (WOV) were measured with a scale adapted from the 50-item Work and Organizational Values Survey (WOVS) developed and tested by De Clerq and his colleagues (2008) based on the value theory of Schwartz (1992). In this scale, there were 12 items measuring Self-Enhancement, 11 items for Self-Transcendence, 5 items for Openness to Change, 8 items for Conservation, 5 items for Hedonism and 9 items for Goal-Orientedness. A short explanatory statement was provided for each single value item (e.g., Perseverance: to carry on, not giving up; Self-indulgent: doing pleasant things). Importance of each single value was tapped on a 7-point scale from (-1): opposed to my / my organization’s principles, through (0): not important for me / my organization, to (5): has supreme importance for me / my organization. This asymmetrical measurement scale was adopted from Schwartz (1992) and De Clerq et al. (2008). It mainly reflects to what extent those values are desirable and attractive. Participants rated each single value item based on its importance in their own work (personal work values) and the perceived importance of those values for the organization, in which they work (perceived organizational values).

The six values included in WOV measure, represent the opposite poles of three dimensions; namely self-enhancement versus self-transcendence, openness to change versus conservation, and hedonism versus goal-orientedness. The coefficient alpha reliabilities ranged from 0.79 to 0.91 for personal work values; and ranged from 0.72 to 0.86 for perceived organizational values.

4.3 Measurement of TQM orientation

TQM orientation was measured with a 15-item scale adapted from the scale developed and tested by Coyle-Shapiro and Morrow (2003). In this scale, there were 6 items measuring teamwork, 9 items for continuous improvement. As the result of factor analyses, three factors were extracted having eigenvalues greater than 1, which combined accounted for 63.9% of the total variance. The results yielded a single factor for teamwork as expected, yet two distinct factors for continuous improvement, namely active involvement and allegiance to quality, consistent with the previous study (Coyle-Shapiro & Morrow, 2003).

Teamwork represents to what extent employees value the performance of teamwork and exhibit a strong spirit of cooperation. Sample items of teamwork scale include “There is a lot of cooperation in my organization” and “The people in my organization encourage each other to work as a team”. Coefficient alpha for this scale is 0.91. Active involvement represents to what extent an employee engages in quality focused behaviors. Sample items for active involvement scale include “I often put forward ideas and suggestions
without expecting extra rewards” and “I put a lot of effort into thinking about how I can improve my work”. On the other hand, allegiance to quality captures the extent of an employee’s acceptance of quality and continuous improvement principles. A sample item for allegiance to quality is “Continuous improvement is essential for the future of my organization”. Coefficient alpha reliabilities are 0.88 for active involvement and 0.86 for allegiance to quality.

### 4.4 Common method variance

The common method variance is a potential source of measurement error that may create a serious threat for the validity of conclusions about the associations among measures (Podsakoff et al., 2003). Because all data in this study are self-reported and collected through the same questionnaire during the same period of time with cross-sectional research design, the findings are not immune to common method variance, which may cause systematic measurement error and further bias the estimates of the true relationship among theoretical constructs (Podsakoff & Organ, 1986; Podsakoff et al., 2003).

Harman’s one factor test and confirmatory factor analysis, and further post hoc statistical tests, were conducted to test the presence of common method effect. All six components of WOV (Self-Enhancement, Self-Transcendence, Openness to Change, Conservation, Hedonism and Goal-Orientedness) and three components of TQM orientation (Teamwork, Active Involvement and Allegiance to Quality) were entered into an exploratory factor analysis, using unrotated principal components factor analysis, principal component analysis with varimax rotation, and principal axis analysis with varimax rotation. This procedure was used to determine the number of factors necessary to account for the variance in the variables. If a substantial amount of common method variance is present, either (1) a single factor will emerge from the factor analysis, or (2) one general factor will account for the majority of the covariance among the variables (Podsakoff & Organ, 1986; Podsakoff et al., 2003).

The unrotated principal component factor analysis, principal component analysis with varimax rotation, and principal axis analysis with varimax rotation all revealed the presence of nine distinct factors with Eigenvalues greater than 1.0, rather than a single factor. Consistent with the expectation, all items loaded with high-standardized coefficients onto their respective factors and with substantially lower standardized coefficients in other factors. The nine factors together accounted for 67.7% of the total variance; the first (largest) factor did not account for a majority of the variance (12.6%). Thus, no general factor is apparent.

Moreover, all nine variables were loaded on one factor to examine the fit of the confirmatory factor analysis (CFA) model. If common method variance is largely responsible for the relationship among the variables, the one-factor CFA model should fit the data well. The confirmatory factor analysis showed that the single-factor model did not fit the data well; $\chi^2=6309.86$, $p<0.01$, df=1952; $\chi^2$/df=3.23 (>3); CFI=0.36, GFI=0.26, NNFI=0.28, RMSEA=0.16.

Although the results of the Harman’s one-factor test and the single factor confirmatory factor analysis do not completely preclude the possibility of common method variance, they do suggest that common method variance is not of great concern and thus is unlikely to confound the interpretation of results for this study.
Table 2. Descriptive statistics and correlations among measures.

<table>
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<tr>
<th>Constructs</th>
<th>Mean</th>
<th>SD</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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<th>6</th>
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<td>13. TW</td>
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<td>0.52</td>
<td>0.36</td>
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<td>15. AQ</td>
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<td>-0.02</td>
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<td>-0.04</td>
<td>0.28</td>
<td>0.36</td>
<td>0.86a</td>
</tr>
</tbody>
</table>

Correlations greater than or equal to 0.07 are statistically significant at p<0.05 level.

a Cronbach alpha reliability

PWV: Personal Work Values, OWV: Organizational Work Values, TQM: TQM Orientation
ST: Self transcendence, SE: Self-enhancement, OC: Openness to change,
CO: Conservation, GO: Goal orientedness, HE: Hedonism,
TW: Teamwork, AI: Active Involvement, AQ: Allegiance to quality
4.5 Factor analyses

In order to confirm the validity and reliability of factor structures, both exploratory (using SPSS 13.0) and confirmatory factor analyses (using AMOS 7.0) were performed on the sample. Prior to the estimation of the confirmatory measurement model, exploratory factor analyses were conducted to assess unidimensionality. In each of these analyses, a single factor was extracted (using a cut-off point of eigenvalue = 1), suggesting that our measurement scales were unidimensional. Next, consistent with our measurement theory, 50 items measuring WOV were hypothesized to load on six distinct factors (i.e.; Self-Enhancement, Self-Transcendence, Openness to Change, Conservation, Hedonism and Goal-Orientedness) in the measurement model. In addition, the 6 items measuring teamwork, 5 items measuring active involvement and 4 items measuring allegiance to quality were averaged to create composite indicants for each of these formative measures, which are then posited to load on three distinct factors in the measurement model. Alpha reliabilities for the scales ranged from 0.72 to 0.91 and factor loadings of items varied from 0.44 to 0.86. Means, standard deviations, alpha reliabilities and intercorrelations among the established measures are depicted in Table 2.

Next, confirmatory factor analysis was estimated on 65 items measuring nine constructs. In addition, it was also checked the measurement properties of the variables by comparing the baseline model with alternate models. Suggested nine-factor model resulted in a significant chi-square statistic and goodness-of-fit indices suggesting that the model fits the observed covariances well ($\chi^2=3467.77$, $p<0.01$, $df=1854$, $\chi^2/df=1.87$ (<3), $CFI=0.95$; $GFI=0.90$; $NNFI=0.88$; $RMSEA=0.06$). In addition, all items loaded significantly on their respective constructs (with the lowest t-value being 3.58), providing support for the convergent validity of measurement items. Finally, discriminant validity was obtained for all constructs since the variance extracted for each construct was greater than its squared correlations with other constructs (Fornell & Larcker, 1981).

4.6 Hypotheses analysis

Hypotheses relating values and value congruence to TQM orientation were tested using polynomial regression analysis (Edwards, 1994, 2002). Most research on the congruence between two constructs as a predictor of outcomes uses difference scores. Nevertheless, the main problem with difference scores is that the independent contribution of personal variables and organizational variables is ignored. Because a difference score is a calculated measure, it captures nothing more than the combined effects of its components. Investigating the issue without considering the measures separately as personal and organizational variables, it is difficult to address the question of whether outcome attitude or behavior is determined by personal characteristics, organizational characteristics, or their congruence (De Clerq, 2006). There may be mean-level differences when congruence occurs on a high level of the predictors versus a low level, or the incongruence in one direction (i.e., predictor $X >$ predictor $Y$) may have different effects than the incongruence in the opposite direction ($X < Y$) (Edwards, 2002). Therefore, polynomial regression analysis and three-dimensional surface plots (surface response analysis) recommended by Edwards (1994, 2002) are among the best statistical techniques to more precisely examine the exact nature of personal-organizational work value congruence on employees’ TQM orientation.
### Table 3. Results of linear and quadratic regression analyses.

<table>
<thead>
<tr>
<th>Constructs</th>
<th>X</th>
<th>Y</th>
<th>R²</th>
<th>Step 1</th>
<th>X</th>
<th>Y</th>
<th>R²</th>
<th>Step 2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variable: Teamwork</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>Step 2</strong></td>
</tr>
<tr>
<td>Self Transcendence</td>
<td>0.36**</td>
<td>0.44**</td>
<td>0.112**</td>
<td>X: Personal Work Values</td>
<td>0.28**</td>
<td>0.39**</td>
<td>0.05</td>
<td>-0.12*</td>
</tr>
<tr>
<td>Self Enhancement</td>
<td>-0.11*</td>
<td>-0.13*</td>
<td>0.049*</td>
<td>Y: Organizational Work Values</td>
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<td>-0.08</td>
<td>0.06</td>
<td>-0.02</td>
</tr>
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<td>0.11*</td>
<td>0.038*</td>
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<td>0.10</td>
<td>0.09</td>
<td>0.11</td>
<td>-0.04</td>
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<td>-0.03</td>
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<td>0.18**</td>
<td>0.086*</td>
<td></td>
<td>0.22**</td>
<td>0.14*</td>
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</tr>
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<td>-0.04</td>
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<tr>
<td><strong>Dependent Variable: Active Involvement</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>Step 1</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>Step 2</strong></td>
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<td>0.22**</td>
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<td>0.081*</td>
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<td>0.18*</td>
<td>0.12*</td>
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<td><strong>Dependent Variable: Allegiance to quality</strong></td>
<td></td>
<td></td>
<td></td>
<td><strong>Step 1</strong></td>
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<td></td>
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<td><strong>Step 2</strong></td>
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<td>-0.04</td>
<td>-0.03</td>
<td>0.04</td>
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</table>

** p<0.01  * p<0.05
X: Personal Work Values  Y: Organizational Work Values

- For all columns except R² and ΔR², figures are unstandardized regression coefficients with all predictors entered simultaneously.
- For Model 1, the column labeled R² indicates the variance explained by two predictors (X, Y); for Model 2, the column R² indicates the variance explained by five predictors (X, Y, X², Y², XY). The column labeled ΔR² contains incremental variance explained by the quadratic terms (X², Y²) and the congruence term (XY) over Model 1.

Table 3. Results of linear and quadratic regression analyses.
In order to be able to overcome aforementioned methodological problems associated with measures of congruence, we employed polynomial regression and surface response analysis to explore the hypothesized associations between personal and organizational work values and TQM orientation. It comprises a collection of procedures for estimating and interpreting three-dimensional surfaces relating two variables to an outcome.

Before applying the supplementary person-organization fit (work value congruence) model, employee’s personal work values (X) and organizational work values (Y) were simultaneously entered to the equation to test their linear main effects in Step 1. Following this, to investigate supplementary person-organization fit, polynomial regression analysis was applied as Step 2 to represent the relationship between the congruence of employees’ personal and perceived organizational values and their TQM orientation. In Step 2, personal work values squared (X²), the interaction between personal work values and organizational work values (XY), and organizational work values squared (Y²) were entered to the equation. To reduce multicollinearity and facilitate interpretation of the graphs, all predictor variables were scale-centered as suggested by previous research (Edwards, 1994; Shanock et al., 2010). A separate polynomial regression was run and examined for each of the six work values, which made six different polynomial regression analyses. The following regression equations were used to determine whether research hypotheses were supported. Results of the regression analyses are presented in Table 3.

\[
\text{TQM Orientation} = b_0 + b_1X + b_2Y + e \quad (\text{Step 1})
\]

\[
\text{TQM Orientation} = b_0 + b_1X + b_2Y + b_3X^2 + b_4XY + b_5Y^2 + e \quad (\text{Step 2})
\]

### 4.7 Results

Our first hypothesis suggested that self transcendence will be positively related to TQM orientation, whereas there will be a negative relationship between self enhancement and TQM orientation. First of all, proposed regression models in Step 1 consisting of the associations between self transcendence and TQM orientation components were found to be statistically significant. Regression analysis revealed that both personal self transcendence and perceived organizational self transcendence are positively related to all three dimensions of TQM orientation. It was also revealed that, influence of perceived organizational self transcendence on TQM orientation is stronger than personal self transcendence. Thus, our hypotheses 1a and 1c are fully supported. However, hypothesized negative relationship between personal and organizational self enhancement and TQM orientation was found to be statistically significant only for teamwork. Similarly, negative relationship between organizational self enhancement and teamwork was stronger than the relationship of personal self enhancement. So, our hypothesis 1b was supported, whereas 1d was not supported.

Our second hypothesis, on the other hand, suggested that openness to change will be positively related to TQM orientation, whereas a negative relationship between self conservativism and TQM orientation is expected. Regression equations between the openness to change and teamwork, as well as allegiance to quality, were found to be statistically significant, whereas the equation between openness to change and active involvement was not significant. Consequently, analysis confirmed the expected positive associations of
openness to change with teamwork and allegiance to quality, but did not corroborate its positive relation with active involvement. Contrary to the influence of self transcendence, personal openness to change was found to have stronger association with TQM orientation than organizational openness to change. Thus, our hypothesis 2a was fully supported, while 2c was partially supported. For the relationship between conservation and TQM orientation, none of the regression equations were found to be statistically significant. Accordingly, hypothesized negative relationships between conservatism and TQM orientation were not statistically significant. Thus, our hypotheses 2b and 2d were not supported.

Third hypothesis suggested that goal orientedness will be positively associated with TQM orientation, while hedonism will be negatively related to TQM orientation. Regression analyses revealed that all of the proposed positive relationships between goal orientedness and TQM orientation components were statistically significant. Analyses also show that personal goal orientedness had a stronger influence on TQM orientation than organizational goal orientedness. Thus, our hypotheses 3a and 3c were fully supported. On the contrary, from the hypothesized negative relationships between hedonism and TQM orientation, only the one between hedonism and active involvement was found to be statistically significant, in which the negative influence of personal and organizational hedonism on TQM orientation were at the same extent. Thus, our hypothesis 3b was not supported, yet 3d was partially supported.

Finally, our fourth hypothesis proposed that the congruence between the personal values and the perceived organizational values will have a positive influence on TQM orientation. Polynomial regression analyses revealed that the quadratic equations were statistically significant for only two values, which are self transcendence and goal orientedness. For self transcendence and goal orientedness, Step 2 significantly increased the amount of variance accounted for over Step 1 in all three equations having each of three of TQM orientation components as dependent variable. Thus, we can conclude that our hypotheses 4a and 4b were partially supported.

To better comprehend the differentiated effects of personal and organizational values, as well as of their congruence, surface response analyses were also conducted. Three dimensional (3-D) graphs of the surface response analyses are displayed in Figure 1 and Figure 2.

Examining the surface plots for self transcendence (Figure 1) and goal orientedness (Figure 2), we found that all of the three TQM orientation components; namely teamwork, active involvement and allegiance to quality; were at the highest level when those values (self transcendence and goal orientedness) were rated as highly important both for the employee and the organization (shown by the highest point in the far back corner of graphics). Contrarily, all three TQM orientation components were lowest when the values were rated as not important both for the employee and the organization (shown by the lowest point in the near front corner of graphics).

In addition to that, in case of incongruence of the importance of the self transcendence for the employee and for the organization, organizational values have slightly stronger effect on TQM orientation than personal values for self transcendence. In case of incongruence for goal orientedness, the relationship showed a different pattern. For goal orientedness, it was revealed that personal values have slightly stronger effect on TQM orientation than organizational values.
However, it was also yielded that, when those two values were rated as important for the employee but not important for the organization, or when they were rated as important for the organization and not important for the employee (in case of incongruence), TQM orientation were still high (see far left and right corners of the graphics). This pattern of relationships suggests that “exact congruence” between the importance attached to self transcendence and goal orientedness by the employee and perceived importance of those values for the organization is not substantially necessary for positive TQM orientation.

While examining the relationships between personal – organizational value congruence and the three components of TQM orientation, polynomial regression analyses revealed that the combinations of personal – organizational values were only significant for two of the six values (self transcendence and goal orientedness). Since quadratic regression equations

Fig. 1. Three-dimensional surface graph illustrating relations between person-organization fit for self transcendence and TQM orientation. (OST: Organizational Self Transcendence, PST: Personal Self Transcendence)
calculated for the personal – organizational congruence of the other values’ yielded that the unstandardized regression coefficients in those equations are not statistically significant, their graphical illustrations are not depicted.

![Fig. 2. Three-dimensional surface graph illustrating relations between person-organization fit for goal orientedness and TQM orientation. (OGO: Organizational Goal Orientedness, PGO: Personal Goal Orientedness)](image)

5. Discussion and conclusion

In general, this present research was conducted to examine the associations between supplementary person-organization fit in terms of personal - organizational value congruence and components of employees’ TQM orientation, which are participation in teamwork and involvement in continuous improvement. In addition, direct linear relationships between six values, which are self transcendence, self enhancement, openness to change, conservatism, goal orientedness and hedonism, and three TQM orientation components were also investigated.
Proposed relationships were studied by means of a commensurate and comprehensive work and organizational values survey. All respondents made judgments about their own personal work values and provided their perception about the importance of these same values for their organization.

First, significant linear effects were also yielded. The results of the two step polynomial regression analyses supported the hypothesized positive links from self transcendence and goal orientedness to all of the three TQM orientation components, which are teamwork, active involvement and allegiance to quality, for both personal and organizational level; whereas openness to change was found to be positively associated with teamwork and allegiance to quality. On the other hand, only the negative relationships between self enhancement and teamwork and between hedonism and active involvement were found to be statistically significant.

Results suggest that the values, which were hypothesized as having positive relationships with TQM orientation, have stronger and significant effect on the outcomes. However, the values at the opposite poles, which were hypothesized as having negative associations with the outcome variables, were not revealed to have significant influence as expected. Thus, one can conclude that the attitudes and behaviors, which do not promote the benefit of the organization, are not substantially affected by the values of the people or the organization.

Furthermore, curvilinear relationship between the value congruence and TQM orientation was also investigated through polynomial regression and surface response analyses. Results yielded that that the quadratic equations were statistically significant for only two values, which are self transcendence and goal orientedness. Findings suggest that, TQM orientation would be at the highest level when the values are perceived as highly important both for the employee and the organization. On the contrary, TQM orientation would be lowest when the values were rated as not important both for the employee and the organization.

More importantly, even in case of inconsistency between the level of importance of the values for employees and the organization; in other words, even when values were rated as important for the employee but not important for the organization, or when they were rated as important for the organization and not important for the employee, TQM orientation would still be at a high level. This finding suggest that “exact congruence” between the importance attached to the values by the employee and perceived importance of those values for the organization is not crucial to obtain a positive TQM orientation among employees.

Besides the aforementioned theoretical implications of the results, this study also offers several practical implications for practicing managers. Based on the positive relations between value congruence and positive work related attitudes, such as TQM orientation, managers should attempt to foster value congruence to improve the attitudes and behaviors of employees, which would be beneficial for the organization. Thus, managers had better devote more energy and resources assessing value congruence when hiring job applicants (Cable & Judge, 1996) and engage in socialization tactics to adjust the values of employees in the course of the values, which are perceived as important throughout the organization (Edwards & Cable, 2009). In addition, to foster the positive consequences of person – organization fit, managers may also explore strategies that may directly influence the facilitators of the value congruence, such as trust and communication.
Although it was revealed that value congruence had an important role in practical managerial aspects, findings of this study also suggested that some values have considerable direct linear effect on employees’ attitudes and behaviors, even in case of inconsistency between the importance of the values for the employee and perceived importance of them in the organization. Hence, employees would also rather to explore those values that may have a positive impact for the organization, and try to find ways to promote their importance among employees throughout the organization.

In conclusion, this study’s findings suggest that, in addition to the linear effects of values that explain a considerable variance, value congruence effects also play an important role in explaining the adoption of TQM orientation. In addition, this paper highlights the importance of using value dimensions and demonstrates that different value types might have different relationships with various components of quality orientation.

6. Limitations and recommendations for future research

The findings and the contribution of the current study must be evaluated taking into account the potential limitations of the research design. First, the data was cross-sectional, making it impossible to imply causality. All of the variables were measured at the same time and from the same source, so concern over the effects of common method variance was warranted. To minimize this potential problem, the scales in the actual survey were ordered so that the dependent variable did not precede all the independent ones (Podsakoff & Organ, 1986). In addition, as explained in detail in the relevant section above, the results of the Harman’s one-factor test and the single factor confirmatory factor analysis suggest that common method variance is not of great concern and thus is unlikely to confound the interpretation of results. Furthermore, variance inflation factors and condition indexes, which were calculated well-below the threshold values, indicates no problem regarding a common-method bias.

Second, any data collected by self-report measures may have been influenced by a social desirability response bias. Although one cannot rule out a self-serving bias as a possible influence, researchers have suggested that social desirability is generally not a source of bias in measuring organizational perceptions (Podsakoff & Organ, 1986).

Finally, our sample comprised of employees working in different public and private organizations in Turkey. This setting and findings may not be generalized to all employees and organizations. Hence, implications and conclusions of this study are bounded by the context of the research, but future research could involve the replication of this study in a number of different contexts. The author believes that future research assessing similar data from different contexts will provide informative validation for the results of this study. Additionally investigating other firm-specific effects and managerial implications that may promote value congruence and person – organization fit may guide academicians and practitioners to better understand the determinants, consequences and the benefits of the notion for fit.

Although the limitations mentioned above, this paper provides important theoretical implications for P-O fit theory and contributes to the literature in terms of TQM and human resource management perspectives. Furthermore, findings also offer several insights for practitioners. The results may assist managers to make better decisions in opting for an appropriate management scheme in order to achieve better TQM performance.
7. References


This book is comprised of a collection of reviews and research works from international professionals from various parts of the world. A practical approach to quality management provides the reader with the understanding of basic to total quality practices in organizations, reflecting a systematic coverage of topics. Its main focus is on quality management practices in organizations and dealing with specific total quality practices to quality management systems. It is intended for use as a reference at the universities, colleges, corporate organizations, and for individuals who want to know more about total quality practices. The works in this book will be a helpful and useful guide to practitioners seeking to understand and use the appropriate approaches to implement total quality.

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