Organizational culture: the case of Turkish construction industry

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Abstract

Purpose – The main stimulus of this study is to examine the cultural profile of construction organizations within the context of Turkish construction industry.

Design/methodology/approach – This study is a part of a cross-cultural research, initiated by CIB W112 (Working Commission W112 of the International Council for Research and Innovation in Building and Construction), concurrently ongoing in 15 different countries. Data were collected from 107 contracting and 27 architectural firms, by means of a questionnaire based on OCAI (Organizational Culture Assessment Instrument), a well-known and widely used measurement tool developed by Cameron and Quinn (1999).

Findings – The findings show that the Turkish construction industry has been dominated by firms with a mixture of clan and hierarchy cultures. In addition, the analysis reported here indicates cultural differences at organizational level in terms of firm type, size, and age.

Originality/value – This paper contributes to the understanding of organizational culture in the construction industry by providing empirical evidence from the Turkish construction industry. As future research direction, it highlights the need of a cross-cultural comparison among different countries, and an investigation of the effects of cultural profiles of the organizational members on organizational culture.

Keywords Organizational culture, Construction industry, Turkey

Paper type Research paper

Introduction

Understanding of organizational culture is fundamental to examine what goes on in organizations, how to run them and how to improve them (Schein, 1992). Organizational culture is defined as the shared assumptions, beliefs and "normal behaviors" (norms) present in an organization. Most organizational scholars and observers recognize that organizational culture has a powerful effect on the performance and long-term effectiveness of organizations. Cameron and Quinn (1999) propose that what differentiates successful firms from others is their organizational culture.

With the worldwide globalization trends, special attention has been given to the study of organizations and their cultures. Empirical studies of organizational culture have been carried out across various countries and industries (Hofstede, 1997; Trompenaars and Hampton-Turner, 1998; Cameron and Quinn, 1999; see among others). In comparison there seems to be a limited number of published studies related

to the subject in project-based industries such as construction (Ankrah and Langford, 2005; Low and Shi, 2001; Zhang, and Liu, 2006).

After reviewing research on organizational culture, Ankrah and Langford (2005) have concluded that there is a need to become more aware of the importance of this phenomenon and its impact on organizational performance in the construction industry. The main reasons for the growing importance of the organizational culture can be explained by the internationalization of the construction markets (Low and Shi, 2001), and the fragmented nature of the industry (Hillebrant, 2000). It is a well-known fact that international construction firms have faced many problems due to conflicts, confrontations, misunderstandings, and the differences in ways of doing business with other cultures (Gould and Joyce, 2000). On the other hand, the adversarial relations between different project participants are assumed to be influenced by the cultural orientations of the stakeholders (Phua and Rowlinson, 2003). Thus, the study of cultural issues should be addressed when considering the globalization of construction markets.

Additionally, it is a common belief that organizations that have developed within similar environments usually have similar cultures and related mindsets with regard to ways of doing business. For this reason, the research reported in this paper, aims to contribute to an understanding of organizational culture in the construction industry using data from a developing country, such as Turkey, where there is no study in this field. Findings of the study may also have implications for other cultures with a similar make-up.

Background study

Despite different definitions of organizational culture, there is a consensus among organizational researchers that it refers to the shared meanings or assumptions, beliefs and understandings held by a group. More comprehensively, Schein (1992) defined organizational culture as:

> [...] a pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration that has worked well enough to be considered valid and therefore to be taught to new members as the correct way to perceive, think and feel in relation to those problems.

Similarly, Deshpandé and Webster (1989, p. 4) proposed that organizational culture is:

> [...] the pattern of shared values and beliefs that help individuals understand organizational functioning and thus provide them with norms for behaviors in the organization.

There is an extensive body of knowledge in the literature that deals with organizational culture. Many researchers have proposed a variety of dimensions and attributes of organizational culture. Among them, Hofstede has been very influential in studies of organizational culture. Drawing on a large sample of 116,000 employees of IBM in 72 countries, Hofstede identified four dimensions of culture. These four dimensions used to differentiate between cultures are: power distance, uncertainty avoidance, masculinity/femininity and individualism/collectivism. Beyond these, Hofstede (1997) also identified the process/results oriented, employee/job oriented, parochial/professional, open/closed system, loose/tight control and normative/pragmatic dimensions of culture. These dimensions have been commonly adapted and applied in studies of organizational culture (Søndergaard, 1996).

Other comprehensive studies into organizational culture have been carried out, notably by Trompenaars and Hampton-Turner (1993), who conducted an extensive research into the attitudes of 15,000 managers over a ten-year period in 28 different countries. They proposed five cultural dimensions:

(1) universalism/particularism;

(2) collectivism/individualism;

(3) neutral/affective relationships;

(4) diffuse/specific relationships; and

(5) achievement/ascription.

When dealing with a multitude of dimensions, typologies are usually considered as an alternative to provide a simplified means of assessing cultures. In this regard, typologies are commonly used in the studies of organizational culture. Notable contributors to these typologies include Handy (1993, 1995) who identified the club, role, task and person typologies, and Quinn (1988) who identified the market, hierarchy, adhocracy and clan typologies of culture.

Since the culture is regarded as a crucial factor in the long-term effectiveness of organizations, it becomes important to be able to measure organizational culture. Accordingly, a range of tools designed to measure organizational culture have been developed and applied in industrial, educational, and health care settings over the last two decades. All these tools examine employee perceptions and opinions about their working environment (the so-called "climate" of an organization) but only a few, such as the Competing Values Framework and the Organizational Culture Inventory (OCI), try to examine the values and beliefs that inform those views (Scott *et al.*, 2003).

The majority of the existing studies in the Construction Management field mostly attempt to appropriate the theoretical models and measurement tools of the management literature. For instance, Maloney and Federle (1991, 1993) introduced the competing values framework for analyzing the cultural elements in American engineering and construction organizations. Focusing on the relationship between the organizational culture and effectiveness, Zhang and Liu (2006) examined the organizational culture profiles of construction enterprises in China by means of OCI and Organizational Culture Assessment Instrument (OCAI), the measurement tool of the Competing Values Framework developed by Cameron and Quinn (1999). Rowlinson (2001), using Handy's organizational culture and Hofstede's national culture frameworks, investigated the cultural aspects of organizational change in the construction industry. Ankrah and Langford (2005) proposed a new measurement tool after analyzing all cultural dimensions and typologies developed in the literature and highlighted the cultural variability between organizations in the project coalition.

Literature review shows that despite the growing importance of organizational culture in construction research, there are few cross-cultural, empirical studies. This may be due to the difficulties of conducting research in several countries.

The study reported in this paper forms a part of a cross-cultural research, initiated by CIB W112 on "Culture in Construction", concurrently ongoing in 15 different countries. The aim of the research project is to develop an international "Inventory of Culture in Construction". It continues to stimulate new participants from Europe, Asia, Africa, Australia, and America.

Research methodology

Measurement of culture represents difficulties, particularly in respect of the identification of cultural groups and boundaries. This is further complicated by the nature of the construction industry in which projects are temporary and participants are subject to the values and beliefs of their employing organization, professional groups and project organizations. There is an ongoing debate concerning the study of culture among construction management scholars. However, it is beyond the scope of this paper to discuss the methodological aspects of studying culture in the construction industry.

In order to be compatible with the studies conducted in other countries participating in the CIB W112 research, Cameron and Quinn's (1999) "Competing Values Framework" (CVF) as well as their measurement tool named "Organizational Culture Assessment Instrument" (OCAI) are adopted as the conceptual paradigm for analysis in this study.

The CVF was originally proposed by Quinn and Rohrbaugh (1983) to understand organizational effectiveness, and was later applied to explore different issues relative to organizations (Al-Khalifa and Aspinwall, 2001).

The CVF is based on two major dimensions. The first dimension emphasizes the organizational focus (internal versus external), whereas the second one distinguishes between the stability and control and the flexibility and discretion. These two dimensions form four quadrants (see Figure 1), each representing a major type of organizational culture:

(1) clan;

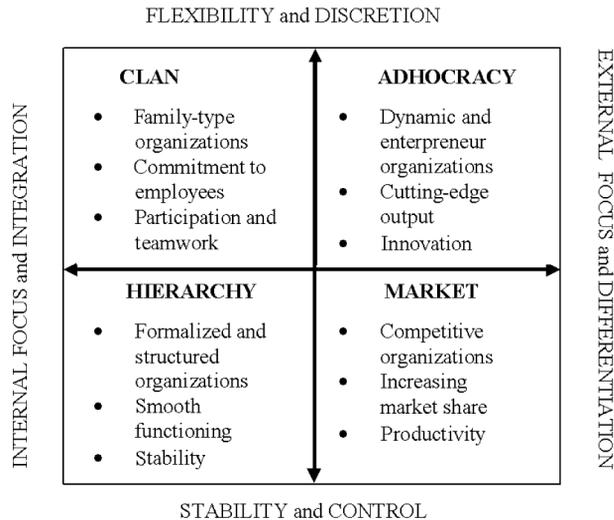(2) adhocracy;

(3) market; and

(4) hierarchy.

Figure 1.
The competing values framework

Source: Cameron and Quinn (1999)

Theoretically, these four cultural typologies exist simultaneously in all organizations; therefore, archetypes may be used to describe the pattern of the organizational culture (Paperone, 2003).

Sampling and data collection
Unit of analysis for this study were the contracting and architectural firms operating in the Turkish Construction Industry. A number of 351 firms were contacted, and 134 of them participated in the study giving a response rate of 38.18 per cent. The firms were selected by judgmental sampling procedure. The judgment criteria used for selection were:

- origin of nationality, with emphasis on local firms;
- size based on number of employees, with emphasis placed on medium and large firms; and
- industry position based on market share, with the focus on the 12 largest firms.

Sample consisted of a total of 826 respondents (74.9 per cent male, 25.1 per cent female) including both managerial and non-managerial professionals.

The questionnaire comprised two parts. Part I included questions regarding the demographic characteristics of the firms and respondents, which are presented in Table I. Although the analysis conducted in this study was at firm level, the characteristics of the respondents are also provided in Table I to reflect a better profile

	Frequency	Percentage
Characteristics of the firms (*N* = 134)		
Number of firms:		
Contracting	107	79.9
Architectural	27	20.1
Firm age (years):		
<15	45	34,6
16-25	46	35,4
>25	39	30,0
Size of firms (number of full-time employees):		
Small	62	46,3
Medium	38	28,4
Large	34	25,4
Characteristics of the respondents (*N* = 826)		
Number of respondents:		
Contracting	723	87.5
Architectural	103	12.5
Gender:		
Female	207	25.1
Male	619	74.9
Age of respondents (years):		
30 and under	220	26.6
31-40	292	35.4
41-50	199	24.1
51 and above	109	13.2

Table I.
Characteristics of sample

of the sample. As is seen in Table I, contracting firms are representing the 79.9 per cent of the sampled organizations and 87.5 per cent of the respondents.

For the purpose of this study, organizations with less than 50 employees were classified as small (46 per cent), those with 51-150 as medium (28 per cent), and those with more than 150 as large (25 per cent). The contracting firms in the survey were generally medium and large-sized whereas the architectural firms were small in size.

Searching for the cultural orientations of the firms, Part II was adopted from the "Organizational Culture Assessment Instrument (OCAI)" developed by Cameron and Quinn (1999). OCAI consists of six different questions which are relevant to the key dimensions of organizational culture:

(1) dominant characteristics;

(2) organizational leadership;

(3) management of employees;

(4) organizational glue;

(5) strategic emphases; and

(6) criteria for success.

Each question has four alternative statements representing different cultural orientations making a total of 24 questions. All respondents were asked to rate their organizations' culture on a five-point Likert scale. In this scoring system, for each of the five response categories (completely true, mostly true, partly true, slightly true, never true) a score of 1-5 was assigned, with the highest score of 5 being assigned to "completely true". The overall cultural profile of an organization was then derived by calculating the average score of all respondents from the same firm.

Reliability coefficients (Cronbach alpha) were calculated for each of the different culture types being assessed by the instrument. Coefficients were 0.89 for the clan and adhocracy cultures, and 0.86 for the market and hierarchy cultures, which indicate the fairness of all culture types.

Results and discussion

A cultural profile score for each organization was obtained by averaging the respondent's rating for each cultural type across the six dimensions. This provided an indication of the cultural orientation of sampled firms based on the four cultural types. The average scores for all the participating firms are shown in Table II. As is seen from the table, the dominant culture of the sample is *clan* culture. Respondents identified hierarchy type as the next most dominant in their organizations. These predominant cultures were followed by adhocracy and market, respectively.

The sampled firms tend to have values consistent with employee focus or clan culture and internal process or hierarchy culture. The values consistent with external orientation and results focus are emphasized to a lesser extent.

This finding contributes to our understanding of the alignment between national and organizational cultures. According to Hofstede's (1980, 2001) model of national culture, Turkey has been described as being high on the collectivism and power distance value dimensions. This suggests that organizational cultures in Turkish firms are characterized by both unequal (or hierarchical) and harmonious, family-like (clan) relationships. The finding is also consistent with the earlier observations of the

Dimensions of culture	Culture types			
	Clan	Adhocracy	Market	Hierarchy
Dominant characteristics	3.61	3.19	3.58	3.04
Organizational leadership	3.39	3.38	2.86	3.84
Management of employees	3.84	3.13	3.17	3.66
Organization glue	3.83	3.69	3.09	3.25
Strategic emphases	3.53	3.75	3.64	3.90
Criteria of success	3.66	3.52	3.36	4.04
	Average of the six dimensions			
Cultural profile of the sample	3.64	3.44	3.28	3.62

Notes: Scale: 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly agree

Turkish society. Trompenaars and Hampden (1998) found Turkey to have the steepest hierarchy in its organizations. Turkish organizations have been also described as the family-type (Trompenaars and Hampton-Turner, 1998).

Another explanation of this finding may be attributed to the nature of state-business relations in the current Turkish context. The state is an important institution in shaping organizational structure of the Turkish private companies. Bugra, in her study, notes that the relations with government authorities, rather than the market, determine the strategic decisions in Turkish organizations. This is also the case for the Turkish construction industry. Even the large company owners manage the company as a family-enterprise, rather than involving the professionals in the major decisions. This may be due to the fact that the relations with the government authorities is not delegated but conducted by the family members (Kabasakal and Bodur, 1998).

Independent sample t-tests were conducted on the overall scores for each of the four culture types to compare architectural and contracting firms. Items were randomly pulled from the larger group in order to have equal sample sizes. The results, which are presented in Table III revealed a significant difference for the market culture type between contracting and architectural firms. Market culture is more dominant in the contracting firms than in the architectural practices ($t = 3.849$, $p < 0.0001$). This may be attributed to the characteristics of the contracting firms operating in relatively more uncertain and unpredictable markets and environments, where market culture, prevalent in organizations where competitive pricing and market leadership are important (Cameron and Quinn, 1999), might be essential for survival.

Analysis of variance (ANOVA) test was also performed to examine organizational culture differences by firm size and age of the firm. A *post hoc* Scheffé test was used to explore differences among subgroups. Three of the ANOVA results for firm size were found to be significant. Scheffé test ($p < 0.05$) revealed that the mean scores for large firms for clan and hierarchy cultures were significantly lower than those of small and medium-sized firms. These findings are not supportive of Cameron and Quinn (1999), who related the internal process model to large organizational size, and are inconsistent with many scholars who reported that larger organizations are characterized by numerous hierarchical levels, standardized procedures, increased specialization, limited flexibility and bureaucratic control (Child, 1973; Keats and Hitt, 1988; Lawler, 1997; Mintzberg, 1979). ANOVA results were also significant for adhocracy, or open

| | | Culture types | | | |
	N	Clan	Adhocracy	Market	Hierarchy
Firm type					
Architectural	27	3,75	3,39	2,93	3,47
Contracting	32	3.62	3.46	3.37	3.66
T-value		−1.193	0.590	3.849***	1.671
Firm size					
Small	62	3.72	3.48	3.25	3.65
Medium	38	3.80	3.55	3.41	3.82
Large	34	3.33	3.25	3.19	3.35
F-value		9.201***	3.507*	1.592	7.553**
Firm age					
≤15	45	3.62	3.45	3.37	3.60
16-25	46	3.87	3.69	3.42	3.86
>25	39	3.47	3.21	3.06	3.44
F-value		6.919**	9.233***	3.172	5.505*

Notes: $^*p < 0.05$ $^{**}p < 0.01$ $^{***}p < 0.001$

Table III.
Cultural profile scores for firm type, size, and age

systems model. The difference was between medium and large sized firms. Adhocracy culture, which is observed in dynamic, innovative and entrepreneur organizations, is more dominant in medium sized firms. This finding supports Gray *et al.* (2003), who found that organizations with less that 100 employees are significantly more innovative and performance-based organizations than larger ones.

Significant differences were also found in terms of organizational age. Scheffé tests ($p < 0.05$) indicated that 16 to 25 year old organizations scored significantly higher on clan, adhocracy, and hierarchy cultures than older ones. This finding is inconsistent with organizational life cycle theories where it is proposed that more hierarchical and bureaucratic structures emerge as organizations grow and age (Greiner, 1998; Kriesi, 1996). On the other hand, it is possible to explain this finding with a strategic management perspective; since the "growing firms might develop more complex management systems with a number of management functions" (Birley and Westhead, 1990).

A *k*-means cluster analysis was used for combining sampled firms into clusters (groups) that describe cultural configurations of firms with similar cultural characteristics. In order to determine the appropriate number of groups, a hierarchy cluster analysis was first conducted at organizational level, using Ward's method and squared Euclidean distance as a distance measurement. Results from the hierarchy cluster analysis showed that there are three underlying patterns of cultural types among sampled firms. This number was then used as seed points for the non-hierarchical *k*-means analysis.

Table IV presents the characteristics of each of the groups obtained, using the culture types defined by Cameron and Quinn (1999). The dominancy of culture types in each cluster is determined by the ratio of the mean scores of culture types in clusters to the overall mean scores, where <1 is low, 1 is moderate, and >1 is high.

Firms of the first cluster obtained low scores on market, and moderate scores in the others. 45 organizations are characterized with cluster 1. Cluster 2 comprised

organizations with moderate scores for market culture and low scores on the others. A total of 25 organizations belong to this group. Cluster 3 contained the largest sample, with 64 organizations. In this group, there was a high emphasis on hierarchy and clan cultures and to a lesser extent adhocracy and market cultures.

Table V sets out the descriptive statistics of the cultural clusters. As is seen in the table, 55.6 per cent of the architectural design firms belong to cluster 1 with low scores on market culture, while 52.3 per cent of the contracting firms belong to cluster 3, which are dominated by a mixture of strong hierarchy and clan cultures. This finding supports Ankrah and Langford (2005), who underline that contracting firms in construction industry are quite formal organizations working under formal procedures, where tasks are generally standardized, which are also the characteristics of the hierarchy culture.

Searching for the cultural differences among organizations of different sizes, it has been found that 51.6 per cent of the small firms and 52.6 per cent of the medium-sized firms are in cluster 3. Regarding the age of the firms, Table V shows that cluster 3 comprises firms who have been in operation less than 25 years.

Graphical presentation of the mean scores in each of the four culture types for the overall sample and cultural clusters is presented in Figure 2, using the competing

| Culture types | Overall mean | Cultural clusters | | | F-value |
		Cluster 1 ($N = 45$)	Cluster 2 ($N = 25$)	Cluster 3 ($N = 64$)	
Clan	3,64	3.62	2.83	3.98	108.508[*]
Adhocracy	3,44	3.21	2.76	3.87	167.741[*]
Market	3,28	2.92	2.79	3.73	102.916[*]
Hierarchy	3,62	3.47	2.82	4.04	182.701[*]

Notes: $N =$ number of firms in the clusters; [*]$p < 0.001$

Table IV.
Description of the three
cultural clusters

| | N | Cultural clusters | | | | | |
		Cluster 1 ($N = 45$)		Cluster 2 ($N = 25$)		Cluster 3 ($N = 64$)	
Firm type:							
Contracting	107	30	(28,0)	21	(19,7)	56	(52,3)
Architectural	27	15	(55,6)	4	(14,8)	8	(29,6)
Firm size:							
Small	62	20	(32,3)	10	(16,1)	32	(51,6)
Medium	38	16	(42,1)	2	(5,3)	20	(52,6)
Large	34	9	(26,5)	13	(38,2)	12	(35,3)
Firm age:							
≤ 15	45	14	(31,1)	7	(15,6)	24	(53,3)
16 - 25	46	12	(26,1)	4	(8,7)	30	(65,2)
> 25	39	18	(46,2)	11	(28,2)	10	(25,6)

Note: $N =$ number of firms in the clusters; Figures in parentheses are percentages

Table V.
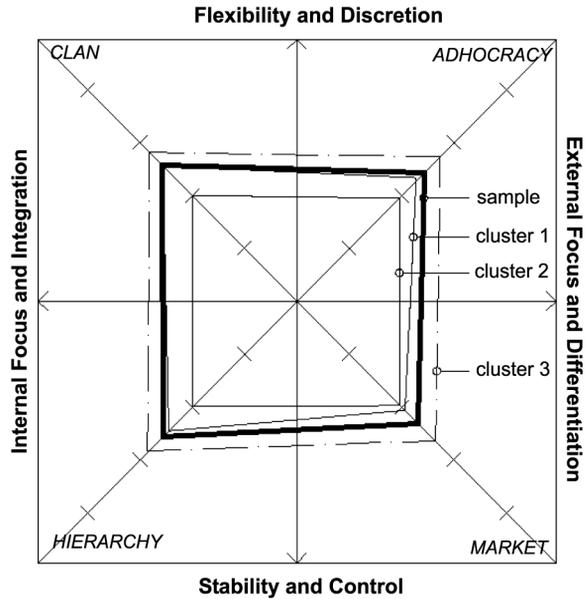Descriptive statistics of
clusters by organizational
characteristics

Figure 2.
The cultural profiles of the clusters

values framework axis and quadrants. A close look at the figure shows that there are similarities between the clusters. Interestingly, the firms in all clusters had higher scores for internally focused culture types (clan and hierarchy) when compared to the externally focused ones (market and adhocracy), regardless from the characteristics of the organizations.

Confirming the ANOVA and *t*-test results presented in Table III, this finding is inconsistent with the assumptions of Dasmalchian *et al.* (2000) that environmental unpredictability, which is also a common concern in construction industry, has a positive effect on market culture and a negative one on the clan culture. Dasmalchian *et al.* suggest that organizations operating in more unpredictable and uncertain markets are more likely to develop a value system that emphasizes results orientation and market focus, and de-emphasizes the culture of hierarchy and bureaucracy. Similarly, Al-Khalifa and Aspinwall (2001) have posited that business organizations tend to be less product-driven and more market-oriented in response to dynamic, complex and challenging environments.

Conclusion

This paper presents the findings of a questionnaire survey conducted among organizations in the construction sector with the view of establishing their current cultural profiles. The results reported in this paper indicate that most of the sampled organizations in the Turkish construction industry have a mixture of clan and hierarchy cultures, which do not match the demands of their competitive environments. Firms operating within the contracting and architectural services sectors put more emphasis on stability and teamwork instead of maintaining productivity and innovation. Yet, they may find it difficult to survive in a fiercely

competitive industry such as construction due to a mismatch between their culture and environment.

This study also provided evidence to support the idea that organizational culture is affected by the firm type, organizational size and age, given that:

- there is a significant difference between the organizational culture of architectural and contracting firms in the sample, since the market culture is more dominant in the latter, which may be attributed to competitive and unpredictable business environment of the contracting firms;

- medium-sized firms have significantly high scores on clan and hierarchy cultures compared to the large firms;

- adhocracy culture is more dominant in medium sized firms than the larger ones; and

- firms in operation for 16-25 years are scored significantly high on clan, adhocracy, and hierarchy cultures than older ones.

In the search of cultural configurations of firms with similar characteristics, the results of the cluster analyses indicated that there exist three underlying cultural orientations in the sample studied. Cluster I, with a low market score; seem to be more appropriate for architectural firms and firms in operation for more than 25 years, while Cluster III, with a high emphasis on clan and hierarchy culture, came over as more suitable for contracting firms, small- and medium-sized firms, and relatively younger firms, in operation for less than 25 years. No distinction has been captured in cluster II, the smallest group in the sample, by firm type and organizational characteristics, except for firm size. Almost 40 per cent of the large firms fall into this group, which has low scores on all culture types, indicating a balanced culture.

The results also provide supporting evidence that organizational cultures are partly predetermined by nationality, industry and task; and partly related to the organizational structure and control (Hofstede *et al.*, 1990). However, the conclusion of the study is limited to the sample studied. All firms are Turkey-based; therefore a comparison among different countries would be helpful to prevent the national bias. Moreover, this study does not focus on the cultural profile of organizational members, such as professional cultures of the respondents; therefore it is not possible to ascertain the influence of the cultural characteristics of the respondents on organizational culture. Thus, further research is needed to determine the generalizability of this study's findings.

The study of organizational culture in the construction industry is still in an embryonic stage. We believe that studies of this sort will serve not only to enhance our understanding of organizational culture in the construction industry, but will ultimately point toward several issues that need to be investigated in future research.

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