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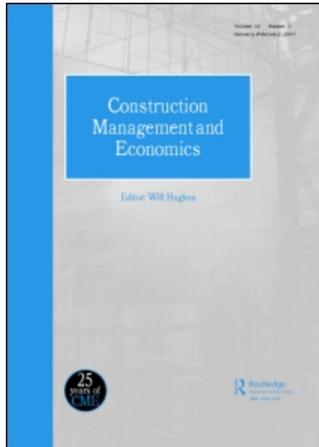
On: 23 November 2007

Access Details: [subscription number 772815468]

Publisher: Routledge

Informa Ltd Registered in England and Wales Registered Number: 1072954

Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



Construction Management and Economics

Publication details, including instructions for authors and subscription information:
<http://www.informaworld.com/smpp/title~content=t713664979>

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Online Publication Date: 01 November 2007

To cite this Article: Akiner, Ilknur and Tjihuis, Wilco (2007) 'Work goal orientation of construction professionals in Turkey: comparison of architects and civil engineers',

Construction Management and Economics, 25:11, 1163 - 1173

To link to this article: DOI: 10.1080/01446190701670365

URL: <http://dx.doi.org/10.1080/01446190701670365>

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Work goal orientation of construction professionals in Turkey: comparison of architects and civil engineers

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Received 1 December 2006; accepted 7 September 2007

The construction industry is a significant part of the global economy, affected by and affecting all dynamics of global competition. However, there seems to have been a limited amount of research conducted on differences between countries through the construction industry's culture. Such comparisons are crucial to identify the cultural factors that are likely to influence the competitive advantage of the Turkish construction industry at both domestic and international levels. Cultural similarities and differences in work goal orientation are compared between selected groups of professionals in the Turkish construction industry. We aim to provide information on the work goals of both civil engineers and architects involved with the construction sector in terms of occupation, gender and age, respectively. Hofstede's VSM question form was used to establish cultural profiles of the participants. The cultural dimensions of architects and civil engineers provide a sample picture of Turkish construction industry.

Keywords: Culture, occupational culture, Turkey, work goals, professionals

Introduction

At the turn of the millennium, in order to gain competitive advantage at both domestic and international levels, it is important to understand cultural differences and to identify potential areas of conflict and harmony across countries and projects. In this regard, attention should be given to the recognition of cultural comparisons in the context of the construction industry. However, little is known about the specific characteristics and cultural differences of the construction industry including cultural comparisons at the occupational level.

Although the importance of cultural differences in construction has been recognized for some time, serious studies on culture at the occupational level and knowledge surrounding cultural values of professionals have been lacking in the Turkish construction industry.

One of the reasons for the lack of success in construction project management is misunderstanding

of cultural differences between occupational groups. The importance of sensitivity to cultural differences in international projects—especially in this era of globalization—has been shown by the fact that in today's global economy, people who work together may hold contrasting values (Rowlinson and Root, 1996; Hancock, 2000; Langford, 2000; Pheng and Yuquan, 2002; Ankrah and Langford, 2005).

Work goals have the most significant role in measuring the culture of participants and the construction industry. This research investigates the occupational cultures of the two principal selected groups working in the Turkish construction industry by analysing 18 work goals. It seeks to highlight and deepen understanding of cultural dimensions. Dimensions were dealt with to find out how they affect the culture and work goals of architects and civil engineers. Moreover, this study aims to establish the specific cultural attributes and orientations of these selected professional groups and to identify areas of difference and to set the contexts within management styles, decision making and views towards authority, supervision, control and initiative.

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The nature of culture: definitions and characteristics

Over the years, there has been increasing research evidence that supports the causal relationship between culture and performance. Social scientists have recognized the importance and fundamental role that culture plays in social and organizational life for a long time (Schein, 1985; Hofstede, 1991, 2001; Mockaitis, 2002). Originally, culture meant producing or developing something (e.g. crops), and it was only in the eighteenth century that it became synonymous with the 'educated' person (Jahoda, 1992). According to Williams (1983) 'culture' is one of the most complex words in the English language. Culture is not something we can reach out and touch, nor see or hear; it is something we must infer from the behaviour of others (Rohner, 1984). The definition of culture has been widely discussed and forms a large part of most recent texts on cross-cultural studies. Looking across the definitions, it is clear that culture has the learned meanings that are shared by a group and something that is transmitted across time. Many definitions have been proposed to define culture. Perhaps the neatest is that from Hofstede (2001), who said that 'culture is defined as a collective programming of the mind; it manifests itself not only in values, but in more superficial ways; in symbols, heroes, and rituals'. To Trompenaars (1993) culture is the way in which a group of people solves problems. Hofstede argues that culture can be usefully studied at four levels: national, industry, organizational and occupational culture. Within the scope of this research culture is defined within the base of Hofstede's definition of culture as the way in which a group of people or the form of behaviour developed, shared and carried out to the future derived from their own values and attitudes.

Hofstede (1991, 2001) has placed an occupational culture level between national and organizational levels. Hofstede also argues that an industry culture should be placed between the occupational and organizational levels because industry is characterized by distinct occupations and distinct organizations. The occupational culture is a subculture with segments of relative diversity within the organizational culture. The cultures overlap and the elements of the cultures within the overlap emerge through a mutual influence process. The occupational culture is buried within the organizational culture and ceases to exist (Maloney and Cameron, 2003).

In the construction industry, the range of skills required to design and produce buildings is wide and the historical developments of the industry have led to the existence of a large number of interdependent

occupations. The project-based nature of the industry makes for high levels of interdependence between occupations. Occupation is a strong source of cultural differentiation in the construction industry. Occupational groups develop distinct cultures, which shape their attitudes and hence the behaviour towards each other. The importance of occupational culture stems from the interdependence between professional groups working together on construction projects and behavioural uncertainty immanent in every contractual relationship. 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. This is not just the case in developed regions, but also in developing regions where these issues are a fact, especially reflected in aspects such as training and maintaining skills and productivity (Tjihuis, 2002).

Dimensions of culture

In 1968 the Dutch scholar Geert Hofstede conducted what is still today considered to be the largest empirical and most influential cross-cultural value study in the field of different cultures and their approach to management. Research conducted by Hofstede (1980, 2001) indicates that managerial and organizational practices may be different in countries that belong to different clusters based on cultural value similarities. Hofstede (2001) collected data on employees' work experience from 116 000 IBM employees. These data were collected across 72 countries and discovered four largely independent dimensions accounted for almost half of the variance in country mean scores on 33 questions on values and perceptions. The dimensions identified by Hofstede have been used in different disciplines. Based on the famous study, Hofstede (2001) concludes that it is possible to classify work-related values into four dimensions: power distance (PDI), individualism versus collectivism (IDV), uncertainty avoidance (UAI) and masculinity versus femininity (MAS).

Hofstede's general methodology about measurement of culture was adopted as the conceptual paradigm for analysis in this research. However, it is not the scope of this research to explore the methodology for the research of culture in the construction industry. Hofstede's four-dimensional framework has been used extensively in cross-cultural studies. Akiner (2005) calculated and compared all four dimensions by utilizing the formula of Hofstede's (2001) VSM 82 and VSM 94 question form adopted from Hancock

Table 1 Cultural dimension scores of the architects and civil engineers in Turkish construction industry

Cultural dimensions	PDI	UAI	IDV		MAS	
	Power distance	Uncertainty avoidance	Individualism		Masculinity	
Question form	VSM 82	VSM 82	VSM 82	VSM 94	VSM 82	VSM 94
Architects	52	40	20	65	39	53
Civil engineers	36	70	5	51	26	44
Dimension scores for Turkish construction industry	45	53	14	58	32	49
Hofstede's national dimension scores for Turkey (2001)	66	85	37		45	

(2000). Table 1 shows the scores of the architects and the civil engineers on each of the four cultural dimensions.

A comparison of this result with Maslow's need-hierarchy theory indicates the influence of cultural values on motivation. Contrary to what Maslow's theory suggests, the ranges of motivational factors are mixed in this study. Apparently, Maslow's conclusions that lower level motivational factors must be met before ascending to the next level were not confirmed by this study. It is possible to explain this finding in light of Hofstede's cultural dimensions. It has been argued that the combination of uncertainty avoidance and masculinity affect what will motivate individuals in different cultures. Individuals in high UAI and low MAS societies such as Turkey will be motivated by security and relationships.

Research method

Hofstede's question form (usually referred to as the value survey module (VSM), which has been widely replicated) was used in the present research. The VSM question form was adapted from the work of Hancock (2000) and translated into Turkish. However, using an adapted or translated instrument does not ensure that the adapted or translated one measures the same constructs as the original one does as a result of the cultural and lingual differences. Therefore, researchers who would like to adapt or translate an instrument from the English version into a different language version should be cognizant of such potential problems (Lin *et al.*, 2005).

'Item bias' is one of the possible methods to alleviate the potential problems of translations proposed by Van de Vijver and Hambleton (1996). Item bias is called differential item functioning. It may cause problems in cross-cultural studies as poor wording, inaccurate translations, inappropriateness of item content in a cultural group exist at the item level of

the measurement. More specifically, differential item functioning is present when two people with the same ability or level of the trait differ in response because of cultural differences (Lin *et al.*, 2005). One of the widely used techniques to detect the item bias is an independent back-translation (Brislin, 1980). An independent back-translation means that 'an original translation would render items from the original version of the instrument to a second language, and a second translator—one not familiar with the instrument—would translate the instrument back into the original language' (Geisinger, 1994).

The question form items were translated several times in order to ensure consistency and the back-translation method was used to solve the problem of measurement inequivalence. The original VSM question form consisted of 33 questions although given the nature of the construction industry it was necessary to make some adjustments to a number of questions. However, 18 questions of the question form related to the work goals were used for this research. Work goal is also defined as a process to energize employees for the motivation of work through a specific path. Hancock (2000) also used the same method for similar professional disciplines performed in Denmark.

The unit of analysis was construction professionals. The sample was targeted at the professional disciplines of civil engineering and architecture, because the behaviour of the construction industry can only be measured properly by examining the behaviour of its major divisions, which are civil engineers and architects. There were in total 18 questions issued in this study. A total of 126 question forms were responded to and received, 111 of which were satisfactorily completed resulting in a valid response rate of 88%. Regarding the composition of the respondents by occupation, the sample of 111 consisted of 64 architects and 47 civil engineers. Table 2 shows the profile of the respondents. Data were drawn from only construction organizations located in Istanbul. The results may only be associated to that population.

Table 2 Profile of survey respondents

	Number of respondents	
	Architect	Civil engineer
Gender		
Female	25	10
Male	39	37
Age (years)		
20–29	23	10
30–39	21	14
40–49	13	15
50+	7	8

The question form was divided into three sections. Section I consisted of questions identifying demographic factors. Questions included the respondent's age; gender, education, etc. Section II had questions identifying work goals and preferences. Scales with an even number of points do not have a midpoint and in that sense force a choice. Therefore, a five-point Likert scale was used for the questions in this section as a semantic differential. A statement is given in question form, and the endpoints correspond to utmost importance and very little or no importance.

Work goal importance questions form a self-contained block in the question form. In total 18 questions related to the work goals were chosen to reduce meaningfully the amount of information through the underlying variables. Thus, Hofstede (2001) argued that occupational goal patterns could be classified into two dimensions: the intrinsic (work related)/extrinsic (non-work related) dimension and the social/ego dimension. Kasser and Ryan (1996) suggested that intrinsic goals are those that satisfy inherent psychological needs and that are generally intrinsically motivating to pursue. Examples of intrinsic goals include self-direction, affiliation, and helping the wider community. In contrast, extrinsic goals are focused on the attainment of rewards and praise, and are generally pursued as a means to some other end. Examples of extrinsic goals are strivings for material possessions, popularity and attractiveness (Kasser, 1999). On the other hand, Herzberg *et al.* (1959) developed a theory which partitioned job characteristics into extrinsic and intrinsic factors, with the latter having motivational power. Intrinsic factors such as achievement and recognition produce job satisfaction whereas extrinsic factors such as pay and job security produce job satisfaction (Hofstede, 2001).

Hofstede (2001) also asserted that occupations could be labelled as more 'masculine' (ego) or more 'feminine' (social). The IBM database reveals the importance of respondents being attached to such

'feminine' versus 'masculine' work goals varying across occupations as well as across countries. Since the primary interest in this research is the work goal questions, the mean scores for all individuals who responded to the question forms were used to determine the characteristics of a preferred job as has been done in prior studies (Harpaz, 1990; Hofstede *et al.*, 1996; Pheng and Yuquan, 2002). In this research, scores for all goals were standardized for each occupation subset of the data in order to eliminate acquiescence. The importance of certain work goals is evaluated across two principal professional populations by occupation, gender and among different age categories.

Analysis of results and findings

Determination of the work goals orientation between two professional groups involved in the Turkish construction industry was the primary focus of this research. There has been substantial research comparing the differences in the importance of work goals of various job facets. Hofstede (1980, 2001) found differences by nationality and by occupational group, while Harpaz (1990) found differences in work goals by gender, nationality, age and organizational levels. Substantial agreement among diverse occupational groups has also been found. The present study, which adds to this literature, was carried out on the demographic characteristics of the sample data in order to discover differences among work goals. All the results and findings of this research were consistent over all the statistical techniques that were used for detecting differential item functioning in test scores with interval-scale properties, based on the analysis of variance (ANOVA). Thus, one-way ANOVA, Kruskal–Wallis tests and independent sample t-tests were used to determine the work goals orientation of construction professionals. Collected data of question forms were analysed by using Statistical Package for the Social Sciences (SPSS 11.5) computer program. The overall reliability of work goal importance questions as measured by the alpha Cronbach coefficient was 80%.

With regard to occupational groups, Table 3 sets out a ranking of standardized mean scores and standard deviations for the importance of 18 work goals between architects and engineers. 'Freedom', 'challenge', 'personal time' and 'advancement' were ranked between the two groups. T-tests were performed to determine whether significant correlations could be found between the ranks. A significant result means that in this research, there was substantial evidence that architects and engineers were significantly in agreement

Table 3 Results of T-test and ranking of work goals by occupational groups

Work goals	Full question form wording	Architects N=64	Civil engineers N=47	T-stat
Personal time	Have sufficient time left for your personal or family life	1.72 (6.5)	1.74 (9)	-0.223
Challenge	Have challenging tasks to do	1.42 (2)	1.45 (3.5)	-0.235
Stress-free	Have little tension and stress on the job	2.92 (18)	2.77 (17)	0.764
Physical conditions	Have good physical working conditions	1.73 (8.5)	1.57 (6)	1.141
Manager	Have a good working relationship with your direct superior	1.66 (5)	1.51 (5)	1.075
Employment security	Have security of employment	1.61 (4)	1.43 (2)	1.376
Freedom	Have considerable freedom to adopt your own approach to the job	1.39 (1)	1.45 (3.5)	-0.517
Cooperation	Work with people who cooperate well with one another	1.83 (10)	1.6 (7.5)	1.854
Consulted	Be consulted by your direct superior in her/his decisions	1.91 (11.5)	1.98 (13.5)	-0.591
Contribute to company	Contribution to the success of your company or organization	1.59 (3)	1.4 (1)	1.207
Earnings	Have an opportunity for higher earnings	1.94 (13)	1.83 (10)	0.809
Country	Serve your country	2.22 (14)	1.98 (13.5)	1.346
Desirable area	Live in an area desirable to you and your family	2.34 (15)	2.19 (16)	0.763
Advancement	Have an opportunity for advancement to high-level jobs	1.73 (8.5)	1.85 (11)	-0.653
Variety	Have an element of variety and adventure in the job	2.52 (17)	2.81 (18)	-1.312
Prestige	Work in a prestigious, successful company or organization	1.91 (11.5)	1.89 (12)	0.061
Helping	Have an opportunity for helping other people	2.42 (16)	2.17 (15)	1.366
Clear job	Work in a well-defined job situation where the requirements are clear	1.72 (6.5)	1.6 (7.5)	0.746

regarding the rank ordering of work goals. For architects the highest ranking item was 'freedom' and the next three most important items were 'challenge', 'contribute to company' and 'employment security'. For engineers 'contribute to company' and 'employment security' were first and second in importance, while two items tied for the third rank: 'challenge' and 'freedom'. Thus, it is concluded that there were no significant differences between the scores obtained from architects, and those obtained from engineers in relation to the importance of work goals (at the 0.01 level, two-tailed tests). It is interesting to note that both groups tend to score intrinsic goals as more important. However, 'employment security' that is extrinsic was also scored highly by construction professionals.

It also appears that 'stress-free' was significantly ranked low by both architects and engineers, in 18th and 17th positions, respectively. Another work goal, 'desirable area', was low rated by architects and engineers. 'Prestige' was also ranked relatively low by all respondents, but the architect respondents ranked the item five places lower than the engineers. Separate

independent t-tests were carried out in order to determine the effects of gender and organizational level in work goal importance. The results are shown in Table 4. Only two significant differences were found between the means of females and males at the 0.05 level (two-tailed test). Gender differences across the work goals were found for 'manager' and 'consulted'. Females reported significantly higher 'manager' and 'consulted' than males ($t=3.265$, $p=0.001$; $t=2.219$, $p=0.05$ respectively). It is also interesting to note that both female and male professionals place the highest value on 'freedom' and regard 'stress-free' and 'variety' as non-essential. No significant gender differences were found for job content goals (challenge, freedom) or for private life goals (personal time, desirable area).

In order to consider work goals from an organizational perspective, respondents were categorized as managerial and non-managerial professionals. Independent sample t-tests revealed that those at non-managerial level valued 'cooperation' ($t=0.350$, $p<0.05$) more than those holding managerial positions. To test whether work goals differ by age, ANOVA

Table 4 Results of T-test comparing work goal importance scores by gender and organizational level

Work goals	Gender			Organizational level		
	Male N=76	Female N=35	T-stat	Manager N=60	Non-manager N=51	T-stat
Personal time	1.76	1.66	0.861	1.78	1.67	1.017
Challenge	1.47	1.34	1.167	1.42	1.45	-0.326
Stress-free	2.96	2.63	1.542	2.75	2.98	-1.142
Physical conditions	1.74	1.51	1.500	1.73	1.59	1.044
Manager	1.74	1.29	3.265**	1.55	1.65	-0.721
Employment security	1.59	1.40	1.352	1.58	1.47	0.847
Freedom	1.46	1.31	1.274	1.40	1.43	-0.291
Cooperation	1.79	1.60	1.412	1.75	1.71	0.350*
Consulted	2.03	1.74	2.219*	1.97	1.90	0.532
Contribute to company	1.62	1.29	2.017*	1.50	1.53	-0.188
Earnings	1.87	1.94	-0.525	1.95	1.82	0.959
Country	2.18	1.97	1.119	2.02	2.24	-1.235
Desirable area	2.34	2.14	0.940	2.33	2.22	0.594
Advancement	1.88	1.57	1.648	1.80	1.76	0.199
Variety	2.83	2.23	2.585*	2.75	2.51	1.082
Prestige	2.04	1.60	2.040*	1.73	2.10	-1.808
Helping	2.41	2.11	1.501	2.22	2.43	-1.173
Clear job	1.74	1.51	1.276	1.72	1.61	0.666

Notes: 1=of utmost importance, 5=of very little or no importance. * $p < 0.05$; ** $p < 0.001$.

(analysis of variance) was performed for each goal across the four age groups. Table 5 sets out the mean scores and standard deviations of 18 work goals for four different age groups of professionals. The results presented in Table 5 reveal that 'physical conditions' and 'advancement' were considered more important by the 30–39 age group than by the three other age groups (respectively, $F=2.923$, $p < 0.05$ and $F=5.590$, $p < 0.001$). On the other hand, young respondents (20–29) valued 'variety' more than their older counterparts. In Table 6, sum of squares and significances of the work goals are also presented for between and within age groups.

However, when the results of Levene statistics within the ANOVA test are inspected, it is revealed that three work goals (dependent variables) 'personal time', 'manager' and 'advancement' are not homogenous. ANOVA is not a suitable test for these, since it doesn't correspond assumptions for these three dependent variables. Hence, instead of ANOVA, a Kruskal–Wallis test was used for these three variables. In order to modify significant differences and which age groups were at difference, the LSD test, which is one of the post hoc tests, was used. The results of the LSD test were ranked in the significant differences column within the analysis of variance section, as is seen from Table 7. Levene statistics were inspected by testing the homogeneity of variances and listed in Table 7. Since

the three variables are not homogeneous according to the results of Levene statistics, a Kruskal–Wallis test was carried out in order to find out the effects of age on work goal importance. Table 8 sets out the results of the Kruskal–Wallis test for variables 'personal time', 'manager' and 'advancement'. The Kruskal–Wallis test revealed that significant differences existed among the age groups for these three variables. However, the analysis program SPSS 11.5 used for the research is not able to analyse post hoc tests regarding the Kruskal–Wallis test. On this account, which age groups were at difference cannot be seen in the test results. However, significant differences are existed between age groups for the variable of 'Advancement'.

Discussion

This study focused on the empirical evaluations of the similarities and differences in work-related values for construction professionals by examining the work goal orientations of two occupational groups involved in the Turkish construction industry. However, it should be noted that the sample size may be too small to make any statistically significant conclusions. Hence, many of the conclusions drawn from the research may be limited to the sample but hopefully are indicative of general trends. The sample data on the demographic

Table 5 Results of ANOVA comparing work goal importance scores for four age groups

Work goals	20–29 N=33	30–39 N=35	40–49 N=28	50+ N=15	F
Personal time	1.70	1.63	1.75	2.00	1.394
Challenge	1.45	1.49	1.36	1.40	0.314
Stress-free	2.76	3.06	2.75	2.80	0.615
Physical conditions	1.76	1.43	1.93	1.53	2.923*
Manager	1.48	1.77	1.43	1.73	1.744
Employment security	1.58	1.34	1.57	1.80	1.697
Freedom	1.48	1.40	1.32	1.47	0.470
Cooperation	1.73	1.80	1.71	1.60	0.325
Consulted	2.06	1.80	2.00	1.87	1.11
Contribute to company	1.58	1.43	1.57	1.47	0.247
Earnings	1.94	1.71	2.11	1.80	1.865
Country	2.15	2.20	2.11	1.87	0.493
Desirable area	2.48	2.26	2.14	2.13	0.692
Advancement	1.55	1.51	2.32	1.93	5.590*
Variety	2.24	2.43	3.29	2.80	5.139**
Prestige	1.94	1.89	1.96	1.73	0.168
Helping	2.27	2.40	2.39	2.07	0.499
Clear job	1.82	1.37	1.89	1.60	2.512

Notes: 1=of utmost importance, 5=of very little or no importance. * $p < 0.05$; ** $p < 0.001$.

characteristics of the research, which adds to this literature, were examined in order to determine differences in the importance ratings in work goals by occupation, gender, age and organizational level.

The work goals of 'freedom', 'challenge', 'personal time' and 'advancement' were ranked between the two occupational groups. 'Freedom' is more important than 'employment security' for architects. The importance of work goal 'freedom' for architects has been also approved by considering the IDV dimension. The cultural dimensions of occupational groups confirmed that the IDV score of architects is higher than civil engineers. Hence, cultural dimensions have a significant effect on the work goals. According to engineers, 'contribute to company' is the most important work goal and that is followed by 'employment security'. These are the results of the IDV, MAS and UAI dimensions. The UAI dimension score of civil engineers is higher than the score of architects. It is important to note that the work goal of 'employment security' is supported by a high UAI cultural dimension for civil engineers. In addition to this, 'contribute to company' is directly related to the results of IDV and MAS dimensions score of civil engineers. IDV and MAS cultural dimension scores of civil engineers are lower than architects. These results are in correlation with the work goal of 'contribute to company'.

When examining the differences in work goal orientation of male and female construction professionals, the findings show that females had significantly higher expectations in terms of 'manager' and

'consultation by direct superior' than did males, both of these being social factors identified as cultural markers in this research. This evidence is consistent with results from other studies. Gender differences in the importance of manager had been reported in a 1957 US review by Herzberg, Mausner, Peterson and Capwell (Hofstede, 2001). With regard to 'consultation by direct superior', this finding shows that the female respondents prefer a participative management style. Hofstede's (2001) survey of a multinational company's employees in more than 50 countries reported that only the preference for a consultative manager showed a significant gender effect. The social/ego factor is characterized mainly by importance of 'manager' and 'consulted'. This study confirms the conclusion that the social/ego factor contained two goals significantly more important to women on the social side (manager, consulted). This finding also supports the view that women are more oriented to the interpersonal facets of their jobs (Harpaz, 1990).

Responses by all of the age groups demonstrated three significant differences among the scores of four age groups. Younger age groups tend to place great importance on 'advancement' while 40 years of age and above receive the lowest scores in this context. They tend to believe that having an opportunity for advancement to high-level job is so important. Respondents between 30–39 and 50 years of age and above have higher scores on 'physical conditions' than the other age groups. Both age groups place a high degree of importance on having sufficient time left for their personal and family life. Younger respondents

Table 6 Results of ANOVA for sum of squares and significances

Work goals		Sum of squares	df	Mean square	F	Sig.
Personal time	Between groups	1.501	3	0.500	1.394	0.249
	Within groups	38.391	107	0.359		
	Total	39.892	110			
Challenge	Between groups	0.290	3	0.097	0.314	0.815
	Within groups	32.953	107	0.308		
	Total	33.243	110			
Stress-free	Between groups	2.097	3	0.699	0.615	0.607
	Within groups	121.596	107	1.136		
	Total	123.694	110			
Physical conditions	Between groups	4.444	3	1.481	2.923	0.037*
	Within groups	54.223	107	0.507		
	Total	58.667	110			
Manager	Between groups	2.552	3	0.851	1.744	0.162
	Within groups	52.204	107	0.488		
	Total	54.757	110			
Employment Security	Between groups	2.436	3	0.812	1.697	0.172
	Within groups	51.203	107	0.479		
	Total	53.640	110			
Freedom	Between groups	0.454	3	0.151	0.470	0.704
	Within groups	34.483	107	0.322		
	Total	34.937	110			
Cooperation	Between groups	0.432	3	0.144	0.325	0.807
	Within groups	47.460	107	0.444		
	Total	47.892	110			
Consulted	Between groups	1.346	3	0.449	1.111	0.348
	Within groups	43.212	107	0.404		
	Total	44.559	110			
Contribute to company	Between groups	0.507	3	0.169	0.247	0.863
	Within groups	73.223	107	0.684		
	Total	73.730	110			
Earnings	Between groups	2.602	3	0.867	1.853	0.142
	Within groups	50.100	107	0.468		
	Total	52.703	110			
Country	Between groups	1.223	3	0.408	0.463	0.709
	Within groups	94.254	107	0.881		
	Total	95.477	110			
Desirable area	Between groups	2.252	3	0.751	0.692	0.559
	Within groups	116.090	107	1.085		
	Total	118.342	110			
Advancement	Between groups	12.846	3	4.282	5.590	0.001*
	Within groups	81.965	107	0.766		
	Total	94.811	110			
Variety	Between groups	18.839	3	6.280	5.139	0.002*
	Within groups	130.746	107	1.222		
	Total	149.586	110			
Prestige	Between groups	0.591	3	0.197	0.168	0.918
	Within groups	125.319	107	1.171		
	Total	125.910	110			
Helping	Between groups	1.407	3	0.469	0.499	0.684
	Within groups	100.557	107	0.940		
	Total	101.964	110			
Clear job	Between groups	5.308	3	1.769	2.512	0.062
	Within groups	75.359	107	0.704		
	Total	80.667	110			

Notes: 1=of utmost importance, 5= of very little or no importance; *p<0.05; **p<0.001.

Table 7 Test of homogeneity of variances and post hoc test results

Work Goals	Levene statistic	Sig.	LSD (age groups)	Sig. (age groups)
Personal time	3.603	0.016*	(30–39) – (50+)	0.047
Challenge	0.862	0.463		
Stress-free	0.146	0.932		
Physical conditions	1.031	0.382	(30–39) – (40–49)	0.007
Manager	6.639	0.000*	(30–39) – (40–49)	0.056
Employment security	0.895	0.446		
Freedom	1.564	0.202		
Cooperation	0.698	0.555		
Consulted	1.970	0.123		
Contribute to company	0.304	0.823		
Earnings	1.832	0.146		
Country	1.248	0.296		
Desirable area	1.097	0.354		
Advancement	3.611	0.016*	(20–29) – (40–49) (30–39) – (40–49)	0.001 0.000
Variety	1.968	0.123		
Prestige	0.240	0.868		
Helping	1.223	0.305		
Clear job	1.322	0.271		

obtain the highest scores on the work goal of ‘variety’. They are more concerned to have an element of variety and adventure in the job.

Conclusions

Occupational culture and cultural differences are the key factors at both organizational and managerial level. An understanding of occupational, organizational and other subcultures affecting and affected by national culture will reduce or minimize the problems.

This research is focused on the importance of culture to understanding differences in work values. Therefore, work goals have been the subject of numerous intercultural researches. Similarities and differences in work goals are evaluated empirically for civil engineers and architects involved in the Turkish construction industry.

Substantial agreement among different occupational groups has been found. The results indicate that for both architects and engineers, the characteristics of a preferred job will have four major elements:

- (1) *Freedom*—the importance of having considerable freedom to adopt one’s approach to the job;
- (2) *Challenge*—the importance of having challenging tasks to do, from which a personal sense of achievement can be gained;
- (3) *Contribute to company*—the importance of making a real contribution to the success of the organization; and

- (4) *Employment security*—the importance of having security of employment.

What the results of the research very clearly demonstrate is that the sample placed a higher degree of importance on questions related to individualism (freedom, contribute to company) and masculinity (challenge). This is in contrast with the Turkish social values of collectivism and femininity. This evidence can be interpreted as being a direct result of the nature of the construction industry, from which the sample population was drawn. It is also interesting to note that employment security was ranked second by engineers while architects ranked it fourth. This evidence supports the notion that people in high UAI may have a strong job security need. On the other hand, the higher ranking of ‘employment security’ may be an indication of the greater impact that actual and potential unemployment has had for these groups in the Turkish construction industry in recent years.

Architects and civil engineers reveal both similarities and differences in their work goal rankings. Architects place the highest value on ‘freedom’ and ‘challenge’. In contrast, civil engineers place the highest value on ‘contribute to company’ and ‘employment security’.

A comparison of these results to dimensional culture factors indicates that civil engineers are closer to the collectivist values of Turkish culture than architects working in the Turkish construction industry. This evidence supports the view that the culture of civil engineers differs from the architect’s regarding the femininity culture. Therefore, civil engineers are closer to the Turkish national culture of femininity. It is also

Table 8 Results of Kruskal–Wallis test

Work goals	20–29 N=33	30–39 N=35	40–49 N=28	50+ N=15	Chi-square	df	p
	Mean rank						
Personal time	54.64	51.63	56.11	69.00	4.076	3	0.253
Manager	53.48	59.76	49.77	64.40	3.429	3	0.330
Advancement	50.55	47.44	71.61	58.83	11.972	3	0.007*

clear from the results of the research that the UAI dimension score of civil engineers is lower than that of architects. One of the most important reasons for this result is ‘creativity’. It is very well known that architects always force the borders of ‘creativity’ through their education and working life. This confirms the conclusion that architects generally don’t hesitate to take a risk because of using their creativity. In contrast, civil engineers generally concentrate on the balances without having taking risks through their education and training/working in organizations. Therefore, differences between two occupational groups for the UAI cultural dimension depends on their education in university and the process of training/working in organizations. In particular, occupational groups’ interests relate to the effects of culture on the processes, which affect the dynamics of construction industry. Each profession is greatly affected by the education and training they receive.

Genders exhibit significant differences in their rankings of ‘manager’, ‘cooperation’, ‘consulted’, ‘contribute to company’, ‘variety’ and ‘prestige’. Females in the Turkish construction industry place a high degree of importance on having a good working relationship with their direct superior and being consulted by their superior in her/his decisions. Males are much less concerned about contributing to the success of their company or organization, and more about variety and adventure in their job. Females are more concerned to work in a prestigious, successful company or organization.

The results of comparison by age show that ‘freedom’ and ‘challenge’ are pre-eminent for most of the age groups. On the other hand, young respondents value ‘variety’ and ‘advancement’ more than do their older counterparts. However, physical conditions are important with age. One significant difference was exhibited at the organizational level. Non-managerial employees attribute greater importance than do managers to the work goal of ‘cooperation’. This is useful in shedding light on what motivates employees in different countries. Therefore, occupation levels may have an effect on motivation and may well offset cultural considerations. This finding supports the view that countries with a low masculinity index such

as Turkey tend to place great importance on cooperation, especially within their same culture. Or at least such cultures should be aware of the influences that their (national/local/regional) culture has and vice versa in national and/or international projects, especially when collaborating with other types of cultures.

Culture is not a panacea, but an understanding and comparison of the cultural differences at all cultural levels can have an important effect on the performance of the construction industry at both the strategic and project levels. From this point of view, the results of the research can be used to develop a cultural profiling model for the construction industry that will help to identify potential areas of conflict and harmony between occupational groups. Cultural dimensions have a significant importance for achieving success either in domestic or in international construction projects. As a recommendation, further research could be undertaken on cultural diversities in the construction industry to provide a fuller picture of industry culture and to provide a competitive edge in the global arena with successful projects.

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