

Big Five and Organizational Commitment – The Case of Turkish Construction Professionals

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Abstract Relationship between personality traits, demographic characteristics, and organizational commitment of construction professionals is discussed in this paper. The discussion is based on statistical analysis of data collected from 922 Turkish professionals. Results show that agreeableness and conscientiousness personality traits are correlated with all of the organizational commitment scales; positively with affective commitment and normative commitment, and negatively with continuance commitment. Marital status and age are two important demographic characteristics on organizational commitment levels. The results are likely to affect both the human resource management approaches of construction firms and related academic researches in the future.

Keywords Big Five Personality Traits, Organizational Commitment, Construction Industry Professionals, Human Resource Management

1. Introduction

Construction is one of the leading industries that have the highest employee turnover rates in the world (http://www.nobsco.com/survey/us_monthly_turnover_0806.cfm, 2012). Thus, one of the prominent trends of construction organizations is the attention placed on organizational commitment of employees in order to avoid such employee turnover. Specific consideration is given to the selection of ‘right’ employees with ‘right’ personalities which fits to project based production environment.

However, there is very limited number of research related to the relationship between personality traits and organizational commitment of construction professionals that may support selection decisions of company/human resource managers. The prevailing literature on other industries show that the relationship between personality and organizational commitment of employees varies for different professional groups, different industries, and different cultures (Furnham et al. (2002); Judge et al. (2002); Naquin and Holton (2002); Uyan (2002); Erdheim et al. (2006); Mount et al. (2006); Graziano et al. (2007); Ho Hung (2007); Şengül (2008); Zimmerman (2008); Furnham et al. (2009), Matzler and Renzl (2010); Aydoğmuş (2011); Kutlay (2011); Demir (2012); Panaccio and Vandenberghe (2012)). Thus, the aim of this article is to focus on an industry that has been understudied with regard to personality traits and

organizational commitment of its employees with a special focus on Turkish construction professionals. The findings of the research are expected not only to be a guide to construction organizations in personnel selection, but also to be a benchmark for future researches on cross cultural comparisons as suggested by Meyer et al. (2002).

2. Big Five and Organizational Commitment Scales

2.1. Big Five Model

The “Five Factor Theory” or the so called “Big Five” has been developed by Norman (1963). Since then, it has been one of the most widely used (Goldberg 1990; Somer and Goldberg 1999; Chernyshenko 2001; Kokkonen and Pulkkinen 2001; Somer et al. 2002; Storm and Rothmann 2003; Bühler and Land 2004; Tomic et al. 2004; Tichon 2005; Bakker et al. 2006; Demirkan 2006; Şimşek 2006; Kokkinos 2007; Morgan 2008; Kim et al. 2009; Lent 2010; Swider and Zimmerman 2010 and Zopiatis et al. 2010) personality trait measurement theories due to its ability in responding the modeling requirements of the personality traits of different individuals from all age groups in a short period of time. The model declares that personality consists of five relatively independent dimensions which provide a meaningful taxonomy for reflecting the individual differences. The dimensions are as follows (Goldberg, 1990):

- (1) Extraversion: This dimension can be described as “the interest to the outer world” and includes some features like friendliness, loving people, being

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assertive, and excitement seeking, being energetic, and thinking positive.

- (2) Agreeableness: reflects individual differences related to collaboration and social compliance. Agreeable individuals are respectful, friendly, helpful, and generous and get along with others easily as they have an optimistic view of human nature.
- (3) Conscientiousness: includes some personality traits like being analytical, responsible, prudent, patient and working hard and is about controlling, organizing and managing one's instincts.
- (4) Neuroticism: includes features like anxiety, anger, hatred, depression, inconsideration, and thoughtlessness.
- (5) Openness to Experience: expresses an individual's tendency to be open to different beliefs, viewpoints, and experiences.

Big Five Inventory (BFI), developed by John et al. (1991), is one of the latest and the shortest form of questions (44 items in total) that is designed to measure the Big Five dimensions.

2.2. Meyer and Allen's Organizational Commitment Model

Meyer and Allen (1991) developed a three-component (affective, normative and continuance commitment) model in order to characterize an individual's psychological attachment to the organization. While affective commitment (AC) reflects commitment based on emotional ties the employee develops with the organization, continuance commitment (CC) reflects commitment based on the perceived costs, both economic and social, of leaving the organization and normative commitment (NC) reflects commitment based on perceived obligations towards the organization. The differences between these three components; AC, CC and NC can be summarized as employees' will to work in an organization because they 'want to', they 'need to', or they 'ought to', respectively (Allen and Meyer (1996)).

This model has been widely used to predict important employee outcomes like turnover and citizenship behaviors, job performance, absenteeism, and tardiness of various professional groups (Meyer and Allen 1991; Meyer et al. 2002; Wasti 2003; Laka-Mathebula 2004; Lingard and Lin 2004; Çakar and Ceylan 2005; Ersoy 2007; Sürvegil 2007; Chang 2008; Şengül 2008).

3. Previous Studies and Hypotheses of the Current Research

3.1. Big Five and Affective Commitment (AC)

Literature findings show that there is a consensus on the relationship between conscientiousness personality trait and AC of individuals. As Barrick and Mount (1991) determined, conscientiousness showed consistent relations with all job

performance criteria and organizational commitment for all professional groups. For the remaining personality dimensions, the estimated true score correlations varied by professional group and criterion type. Rousseau & MacLean Parks (1993) claimed that conscientious individuals tended to form relational contracts with the organization which not only included purely economic exchange, but also included terms for loyalty or growth in an organization and this type of psychological contracts were positively related to AC. Researchers like Cropanzano, James, & Konovsky, 1993; Williams et al. 1996 additionally assumed that extroverted individuals should also have high AC as AC fundamentally represented an employee's positive emotional reaction to the organization and positive emotional reaction was one of the prominent characteristics of extraverts. Similar arguments on agreeableness and AC were supported by Organ and Lingl (1995), DeNeve and Cooper (1998) and Judge et al. (2002) who linked agreeableness with emotional warmth and suggested that such emotion might encourage an employee's social identity with their work environment, thereby encouraging their sense of belonging and identification with the values and goals of the organization.

The above summarized suggestions about the positive relation between AC and the personality traits of; conscientiousness, agreeableness and extraversion were then supported by various empirical results obtained by Judge et al. (2002), Naquin and Holton (2002), Bozionelos (2004), Watrous and Bergman (2004), Raja et al. (2004), Erdheim et al. (2006), Gelade et al. (2006) and Kumar and Bakhshi (2010). These researchers also determined an expected negative relationship with AC and neuroticism which was described as the main source of negative affectivity. Based on these findings, it was posited in the present research that:

Hypothesis 1: Extraversion, agreeableness and conscientiousness will positively relate to AC of construction professionals.

Hypothesis 2: Neuroticism will negatively relate to AC of construction professionals.

Unlike other four traits, openness to experience was the only trait that commonly showed a very weak correlation with AC (Abu Elanain, 2008; Barrick and Mount, 1991; Matzler and Renzl, 2010). DeNeve and Cooper (1998) described openness to experience as a "double-edged sword" that influenced an individual to feel both the good and the bad more deeply, leaving its directional influence on affective reactions like AC unclear. However, Lounsbury et.al (2003) found a significant correlation between openness to experience and AC for employees like construction workers whose work involved completing projects or meeting deadlines. Related hypothesis was thus based on Lounsbury et al. (2003)'s proposal; accepting the positive relationship between openness to experience and AC for construction professionals.

Hypothesis 3: Openness to experience will positively relate to AC of construction professionals.

3.2. Big Five and Continuance Commitment (CC)

Due to the project based production in construction industry, it is common for professionals to move from one firm (or project) to another and only few maintain consistent employment with one particular firm for an extended period of time (Park *et al.*, 2014). Thus, one does not expect CC to be affected by the personality traits of professionals, but to be affected by the working environment (for example CC would increase during recession). However, empirical findings related to different professional groups confirmed that higher levels of networking intensity of extroverts helped them to develop alternative employment opportunities more than introverts and weakened their CC regardless of the working environment (Wanberg *et al.* 2000, Zimmerman 2008). Similar findings on openness to experience was also determined by McCrae and John 1992; Boudreau *et al.* 2001, Naquin and Holton 2002; Erdheim *et al.* 2006, Cui 2010 and Kumar and Bakhshi 2010). So, it was considered to be acceptable to hypothesize that high extraversion and openness to experience traits should result in low CC for construction professionals regardless of the working environment. The following hypothesis was thus proposed:

Hypothesis 4: Extraversion and openness to experience will negatively relate to CC of construction professionals.

Unlike empirical research findings related with conscientiousness and AC, findings on the relationship between conscientiousness and CC were not in good agreement for all professional groups. Some like McCrae and John (1992); Organ and Lingl (1995); Naquin and Holton (2002); Erdheim *et al.* (2006) and Kumar and Bakhshi (2010) revealed a strong positive correlation between conscientiousness and CC. These researchers stated that because of conscientious employees' "greater job involvement tendency", they were more likely to obtain satisfying work rewards and because of the probable costs of leaving the current organization it was reasonable to believe that they should have greater levels of CC. Meanwhile Leung *et al.* (2010) proposed that such "greater job involvement tendency" of conscientious professionals in construction industry provoked intention to quit and kept them away from CC. Leung *et al.* (2010)'s proposal shaped the hypothesis of the present research as;

Hypothesis 5: Conscientiousness will negatively relate to CC of construction professionals.

Research on the relationship between neuroticism and CC reported results which were in good agreement with each other. Meyer and Allen (1997) stated that neuroticism would develop out of an employee's fear of the costs linked with leaving his/her current position and would be positively related with CC. Meta analysis conducted by Meyer *et al.* (2002) also suggested that neuroticism was a personality trait which was negatively related to job performance and CC mediated this relationship. Erdheim *et al.* (2006) also supported the fact that CC was positively related with

neuroticism personality trait as neurotics who generally felt more apprehensive about facing a new work environment that could provide even harsher experiences tended to have CC. Based on these results, the following hypothesis was posited:

Hypothesis 6: Neuroticism will positively relate to CC of construction professionals.

3.3. Big Five and Normative Commitment (NC)

Allen and Meyer (1990) proposed that there was a significant relationship between AC and NC, as the feelings of desire ('want to' stay) in the organization may be meaningfully linked to the feelings of obliging to maintain membership ('ought to' stay). This proposal was also supported by Leung and Chan (2007) who investigated the major antecedents of organizational commitment for construction professionals. Spagnoli and Caetano (2012) also determined a strong positive relationship between AC, NC and openness to experience. Meanwhile, empirical studies undertaken by researchers like Wiener (1982), Watrous & Bergman (2004), Erdheim *et al.* (2006) and Kumar and Bakhshi (2010) in a way ruled out such a relationship by determining a strong positive relationship between NC and neuroticism. Kumar and Bakhshi (2010) additionally determined a strong negative relationship between NC and openness to experience. Despite of these empirical findings, hypotheses of the present research were based on the proposal of Allen and Meyer (1990) and the Hypothesis 1, 2 and 3 of the present research were adapted for NC. Thus, the suggested hypotheses were:

Hypothesis 7: Extraversion, agreeableness, conscientiousness and openness to experience will positively relate to NC of construction professionals.

Hypothesis 8: Neuroticism will negatively relate to NC of construction professionals.

4. Method

4.1. Data Collection

A questionnaire survey was undertaken with Turkish construction professionals between January-July 2011 in order to collect data related to their personality traits, organizational commitment, and job satisfaction levels.

4.2. Sample Size

The questionnaire was presented online by using www.surveymonkey.com and was delivered via a Turkish construction professional network and 922 professionals who actively worked on project management of construction projects completed the questionnaire. The sample size of 922 respondents is statistically significant as it fulfills two requirements for significance. Firstly, it is over the minimum sample size prerequisite of 400 for populations with unknown number of individuals (Bademci 2005). Secondly, it is over the sample size of 250 which is described as the

border line for stabilization of correlations for psychology related research (Kelley and Maxwell, 2003, Maxwell et al. 2008 and Schönbrodt and Perugini (2013). The sample size is also significantly larger when compared to the sample sizes of the similar empirical studies for different professional groups (Judge et al. 2002).

4.3. Structure of Questionnaire

The questionnaire had four main sections which included questions related with;

- (1) Demographics of respondents (17 questions),
- (2) Personality traits of respondents (44 questions of Big Five Inventory (BFI) by John and Srivastava (1999), translated to Turkish,
- (3) Organizational commitment of respondents (24 questions of Meyer and Allen (1991)'s Organizational Commitment Questionnaire, translated to Turkish by Karaca (2001), Sürvegil (2007) and Çelik (2013)),
- (4) Job satisfaction of respondents (20 questions of Minnesota Satisfaction Questionnaire, developed by Weiss et al. (1967), and translated to Turkish by Kumaş (2008) and Çelik (2013)) (The results of this section are not included in this article).

A 5-point Likert Scale, ranging from “Strongly Disagree” to “Strongly Agree”, was used for all questions except demographic questions.

4.4. Analysis

Likert Scale questions were analyzed by using the evaluation criteria given in Table 1 (Tekin, 2000). Hypotheses were evaluated by determining inter correlation values between variables. SPSS 17.0 was used to accomplish these analyses.

Table 1. Evaluation Criteria for Likert Scale Questions

Score Interval (Mean)	Evaluation Criteria
1,00 – 1,79	Very low level
1,80 – 2,59	Low level
2,60 – 3,39	Medium level
3,40 – 4,19	High level
4,20 – 5,00	Very high level

5. Results and Discussion

5.1. Internal Consistency of the Scales

Cronbach Alpha coefficient (CAC) was used to determine the internal consistency of the Turkish version of the scales. CAC values being over 0,6 (see Table 1) indicated ‘high’ consistency of the scales (Kalaycı, 2008). In parallel, Kaiser-Meyer-Olkin (KMO) values were calculated in order to identify the fitness of the collected data to the factor structure of the scales. High KMO values ($\geq 0,5$ and close to 1,0) indicated that the structure of the scales were perfectly

fit for the collected data (Table 2).

Table 2. Cronbach Alpha and Kaiser-Meyer-Olkin Values

Scale	Cronbach Alpha Coefficient / Kaiser-Meyer-Olkin (KMO)
Big 5 Personality Traits	0,750 /0,875
Extraversion Scale (8 items)	0,790
Agreeableness Scale(9 items)	0,626
Conscientiousness Scale(9 items)	0,742
Neuroticism Scale(8 items)	0,799
Openness to Experience Scale (10 items)	0,802
Organizational Commitment	0,814/0,865
Affective Commitment (8 items)	0,849
Continuance Commitment (8 items)	0,787
Normative Commitment (8 items)	0,730

5.2. Demographics of Respondents

The gender composition of the sample was 65% male (N = 599) and 35% female (N = 323). Most of the respondents (76%) were between the ages of 25-40 and 54% (N=499) were married. %66 (N=609) worked in small sized construction organizations sized up to 49 employees at most. The respondents actually had two different professional populations; i.e. architects (N= 482) and civil engineers (N= 440). This was an expected result and did not cause any discrepancy for the aim of the research as they all worked as construction managers. Large sample sizes for architects and civil engineers additionally enabled stratified sampling analysis – which is not included in this paper.

5.3. Descriptive Results for Personality Traits and Organizational Commitment Scales

Results in Table 3 show that construction professionals are highly extroverted, agreeable, conscientious and open to experience individuals with medium neuroticism levels. Standard deviation values additionally show there is more homogeneity for the traits of agreeableness, conscientiousness, and openness to experience than extraversion and neuroticism.

Table 3. Descriptive Results for Personality Traits and Organizational Commitment Scales

Variables	Mean	Standard Deviation (SD)	Evaluation
Extraversion	3,45	0,60	High level
Agreeableness	3,81	0,46	High level
Conscientiousness	3,94	0,51	High level
Neuroticism	2,84	0,67	Medium level
Openness to Experience	3,94	0,48	High level
AC	3,25	0,83	Medium level
CC	3,06	0,75	Medium level
NC	2,90	0,64	Medium level

When organizational commitment results are observed it

is seen that all of the commitment levels are medium with NC having the lowest score value and AC having the most heterogeneous (with highest standard deviation) score value for construction professionals. Supporting, Wu and Liu (2006) determined similar results with AC and CC being equal to 3,5417 and 3,1407 for Chinese construction employees, respectively. Meanwhile Chiu and Ng (2013)'s research results showed CC to have the highest score for quantity surveyors in Hong Kong. They determined scale evaluation mean values equivalent to be 3,02; 3,19 and 2,96 for AC, CC and NC respectively.

5.4. Results Related with the Relationship between Big 5 and Organizational Commitment Scales

Table 4 shows the inter correlation values between Big Five personality traits and organizational commitment scales. Hypotheses 1 to 8 are evaluated according to these values.

(1) *Big Five and AC*: Correlation coefficient results presented in Table 4 show that AC of construction professionals is positively correlated with personality traits of; extraversion, agreeableness and conscientiousness and negatively correlated with neuroticism; supporting Hypothesis 1 and 2. The strongest relationship of AC is determined to be with agreeableness. Meanwhile, unlike Lounsbury et al. (2003)'s results, no relationship is determined between openness to experience and AC, resulting in the rejection of Hypothesis 3.

(2) *Big Five and CC*: Results related with CC and Big Five support Hypothesis 4 and 5 as CC is negatively correlated

with extraversion, agreeableness, conscientiousness, and openness to experience with conscientiousness having the strongest relationship. Hypothesis 6 is also supported as a positive correlation is determined between CC and neuroticism personality traits of construction industry professionals.

(3) *Big Five and NC*: Results in Table 3 show that while NC has only a low to moderate relationship with agreeableness and conscientiousness personality traits, it has no relationship with extraversion, neuroticism, and openness to experience personality traits of construction professionals, resulting in the rejection of Hypothesis 7 and 8.

5.5. Additional Results Related with the Relationship between Demographics and Organizational Commitment Scales

Additional to the above discussed relationships, relationships between demographics of respondents and their organizational commitment levels were also examined. Findings are presented in Table 5. The findings lead to the argument that marital status is the main determinant of organizational commitment of construction professionals. While profession and gender has no effect on AC and CC, they are two of the dominant determinants of NC where civil engineers and males have higher NC values. When age factor is analyzed it is seen that AC and NC are the highest for the oldest while CC is the highest for the middle aged professionals.

Table 4. Inter Correlation Values between Big Five and Organizational Commitment Scales

Variables	Extraversion	Agreeableness	Conscientiousness	Neuroticism	Open. to Experience
AC	0,110**	0,146**	0,116**	-0,070*	0,061
CC	-0,076*	-0,066*	-0,096**	0,161**	-0,085*
NC	0,059	0,087**	0,071*	0,034	-0,004

Acceptable association for; *%95 confidence level, ** %99 confidence level (Segall (1994), Charter (1999))

Table 5. Relationship between Demographics and Organizational Commitment of Respondents

OC	Profession	Gender	Age	Marital Status
AC	No relationship	No relationship	Highest: 61+ Lowest: 20-30	Married > Single
CC	No relationship	No relationship	Highest: 41-50 Lowest: 51-60	Married > Single
NC	Civil engineers > Architects	Male>Female	Highest:61+ Lowest:20-30	Married > Single

*Findings based on hypothesis test results with % 95 confidence level.

6. Discussion and Conclusions

Project based production in the construction industry requires construction organizations to work under tight schedules and budgets. Thus, it is vital for the organizations to have the right people in the right place at the right time and complete the projects with by minimizing employee turnover as possible. Organizational commitment of employees is critical, especially for on time completion of projects. Thus, personnel selection process, especially at management level, focuses on hiring the candidates with the right personalities to attain organizational commitment. However, the question arises on about which personality traits are required for organizational commitment of construction professionals. Being such an important concept, however, previous studies on the relationship between personality traits of employees and organizational commitment generally focus on 'non-project based' environments and construction industry has been neglected. Thus, the aim of the present research has been to determine this relationship.

Present research findings show that all of the organizational commitment scales of construction professionals are at medium levels with AC being highest and NC being lowest, rejecting Allen and Meyer (1990)'s proposal - related to the significant relationship between AC and NC- for construction professionals. AC having the highest scale value additionally shows that construction professionals stay in their organizations more because they 'want to' rather than they 'need to' or 'ought to'. This is not an unexpected result as the Turkish construction industry was in bloom, reaching a growth rate of 11.2% during 2011 -the period which the present research was accomplished-. Meanwhile, medium organizational commitment levels revealed during the present research, which are in good agreement with previous construction related studies, may be related to the construction industry's project based production environment. From the professional standpoint, there may be little difference between firms to affect the professionals' organizational commitment tendencies, as the job function is virtually the same between firms (Park et al. (2014)).

Findings related to personality traits show that agreeableness is the most powerful personality trait in its relationship with AC which means that agreeable professionals want to stay more in their current organizations. Comparing to literature findings, this result may be initially found surprising as AC was reported to have a stronger relationship with conscientiousness than other personality traits. However, it is a realistic result for construction professionals as agreeableness reflects individual differences in cooperation and social harmony and this is an important personality trait for construction professionals who work in a human dominated production environment and who should be good at human relationships.

Expectedly, agreeableness and conscientiousness, personality traits are correlated with all of the organizational commitment scales; positively with AC and NC, and

negatively with CC. However, results related to NC of construction professionals are not as expected. As three of the five personality traits, i.e. extraversion, openness to experience and neuroticism have no relationship with NC rejecting Allen and Meyer (1990)'s proposal once again for construction professionals.

Results additionally show that openness to experience is only negatively related to CC of construction professionals and is not related with AC or NC. These results support DeNeve and Cooper (1998)'s discussion on openness to experience as being a "double-edged sword."

Results related to demographics additionally show that marital status is an important factor on all of the scales of organizational commitment. Age is additionally important where the youngest and the oldest have the highest AC, pointing out that the youngest and the oldest individuals tend to work in an organization because they 'want to'; unlike middle-age employees who are devoted to the fulfillment of social needs more (Maslow, 1970).

Literature showed very few published works that are concerned with the relationship between personality traits, demographics, and organizational commitment of construction professionals. Thus, overall, the findings of the current study are expected to be not only a guide to construction organizations in personnel selection, but also to be a benchmark for future researches on cross cultural comparisons. While focusing on the relationship, future researchers should also include the mediating effect of factors like job satisfaction, economic environment, project characteristics, and leadership styles. Finally, we should state that, our future work will be focusing on the mediating effect of job satisfaction on personality traits and organizational commitment of construction professionals in Turkey.

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