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How Faculty Members' Personality traits Influence their Education-Research Performance

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Abstract

The purpose of this study was to investigate the relationship between personality traits and education-research performance of faculty members. A survey was conducted among 321 faculty members in Tehran University, Iran. The research instrument included: personal and professional features, items related to personality traits, and items related to self-evaluation of education and research performance. Reliability and validity of the instrument were determined through opinions of faculty members and application of Cronbach's Alpha, respectively. Data were analyzed descriptively and inferentially using SPSS/Windows. Findings showed that neuroticism had a negative and significant effect on education and research performance. Openness to experience, agreeableness, and conscientiousness had positive and significant effects on research performance. Extraversion and agreeableness had positive and significant effects on education performance. Finally, results showed that agreeableness had the most effect on educational performance and neuroticism had the most effect on research performance.

Keywords: *personality traits, education performance, research performance, faculty member*

creative, and motivated manpower for different economic activities of their countries. Faculty members are the major pillars in universities and in the teaching and learning process. They are expected to make substantial contributions to educating their students, as well as to make contributions to their field and university (Sampson et al., 2010). In other words, faculty members are expert human resources responsible for teaching and dissemination of knowledge, thus, the quality and development of knowledge significantly depends on faculty members' performance (YaminiDozi Sorkhabi & Bahrami, 2009 as cited in: Rakhshani & Shams, 2014). Education and research are two important functions of faculty members in universities (Rakhshani & Shams, 2014) and it is obvious that studying the education and research performance of faculty members and their determinants can serve as a contributing factor in enhancing the performance of faculty members. Different factors influence job performance, such as transformational leadership (Nemanich & Keller, 2007; Jalali & Rooholahi, 2015), organizational commitment (Derakhshide & Kazemi, 2014; MasoodiAsl et al., 2012), personality traits (Rothmann & Coetzer, 2003; Ahmad et al., 2014), conscientiousness (Alirezaee et al., 2013), etc. Rahimi (2007) stated that scientific cooperation among faculty members would result to an increase in their scientific-research output. It can be said that among the factors influencing job performance, personality traits are more important than other factors, due to their considerable stability (Cooper & Robertson, 1995, as cited in: Rahmani Dotalabadi et al., 2016) and they can be used to predict individuals' behaviors and job performance (Witt, 2002).

Since assessing faculty members' performance is an important tool to improve the quality of higher education and considering that faculty members' evaluation of their performance can lead to greater quality, and also due to the importance of personality traits, in this study the relationship between faculty members' personality traits and evaluation of their educational and research performance was studied. The specific objectives of the research were to study: (1) faculty members' personality traits (2) faculty members' self-evaluation of educational and research performance (3) relationship between faculty members' personality traits and educational and research performance.

Brief literature review

Personality refers to a pattern of relatively permanent traits that give consistency and individuality to an individual's behavior (Feist & Feist, 2009). In other words, among various characteristics, what helps people to better explain themselves and

Introduction

Educated manpower is vital in today's world and that is why universities and higher education institutions have an important responsibility to educate skillful,

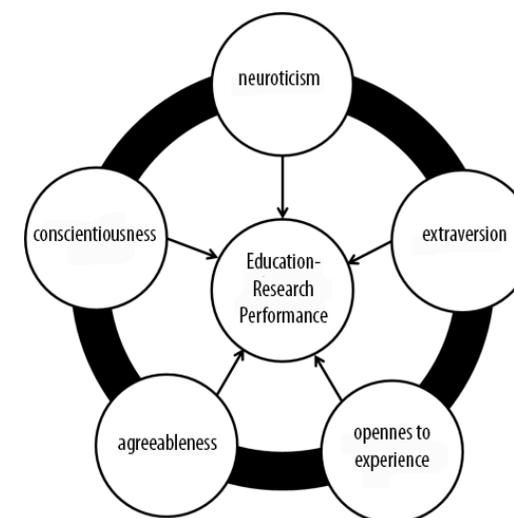
others is personality (Narimani et al., 2007), which is a total of an individual's mental, emotional, physical, and social characteristics (Peabody & Goldberg, 1989). Personality is affected by internal factors (e.g., thoughts, values, and inherited attributes) and external factors (e.g., visible behaviors) (McShane & Von-Glinow, 2003, as cited in: Khonifar et al., 2009). In the history of psychology, the study of personality has been done using different approaches. Some psychologists, such as Cattell, developed new factor analytic techniques to study personality. One of the results of Cattell's application of factor analysis was his discovery of the empirically-derived theory of personality factors. The multidimensional self-report instrument used to measure them is known as the 16 personality factor model (Eliasi, 2009). Eysenck (1985, as cited in: Eliasi, 2009) presented a three-factor model to study personality, which were identified on a spectrum: extraversion-introversion (E), neuroticism-emotional stability (N), and psychoticism (E). The most important traits of the three dimensions of personality are: (1) Extraverts: sociable and crave excitement and change, tend to be carefree, optimistic and impulsive. Introverts: reserved, plan their actions and control their emotions, tend to be serious, reliable and pessimistic. (2) Neurotics: tend to be anxious, worrying and moody, find it difficult to calm down once upset. Stables: emotionally calm, unreactive and unworried. (3) Psychotics: lacking in empathy, cruel, aggressive and troublesome.

Contemporary scholars in the field of personality believe that Eysenck's theory is very simple and has few dimensions, and at the same time, Cattell's theory is very complex and has many factors. In recent decades, the taxonomy of personality that has received the most attention is a five-factor model. McCrae and Costa (1987) presented a model of personality that is known as the five-factor model of personality. Accordingly, the five dominant personality traits are: neuroticism (the tendency to experience negative moods, such as anxiety and depression), extraversion (inclination to be sociable), openness to experience (creativity and appreciation of esthetic experiences), agreeableness (the quality of one's interpersonal interactions), and conscientiousness (the amount of persistence and motivation in goal-directed behaviors) (Besser & Shackelford, 2007; Weisberg et al., 2011). McCrae and Costa, in their research, concluded that the basic factors of personality had good stability, so that those in their childhood had a high or low score in these factors, retained the same characteristic in the next six years. Today, the five-factor model is a widely accepted construct describing personality variation (Rahmani et al., 2016).

Morris et al. (2004, as cited in: Eliasi, 2009) examined a broad range of managers' personality traits and their relationship with job performance. They found that

the factors predicting managers' performance were: responsibility, self-esteem, progression, and extraversion. In a study of the relationship between personality traits and job success, Samans (2006) found that two factors of conscientiousness and extraversion were good predictors of job success. Kark et al. (2003) found that there was a strong relationship between conscientiousness and job performance. The conceptual framework of research is shown in Figure 1.

Figure 1. Conceptual framework of research



Method

Population and sample

The statistical population of the study consisted of the faculty members of the University of Tehran (N= 1951). A sample of 321 faculty members was randomly selected using a random sampling method (Krejcie and Morgan Table).

Instruments

Data were collected from the target group by means of a questionnaire. The first section of the questionnaire contained the respondents' demographic characteristics and the remaining sections consisted of questions related to personality traits and self-evaluation of education and research performance. Several rating instruments were developed to measure the Big Five dimensions of personality traits. The most comprehensive instrument was Costa and McCrae's (1992) 240-

item NEO Personality Inventory, which measured the Big-Five domains. The inventory was too lengthy for many research purposes, and to answer the need for a short instrument measuring the prototypical components of the Big Five personality traits, John et al. (1991) constructed the Big Five Inventory (BFI, as cited in: John & Srivastava, 1999), which is composed of 44 items. The items of BFI were rated on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). To assess the faculty members' self-evaluation, an inventory was developed, divided into two sections: (a) assessment of educational performance and (b) assessment of research performance, each category containing 8 items, on a 5-point scale ranging from 1 to 5.

The face validity of the questionnaire was confirmed by a panel of experts consisting of the faculty members of Tarbiat Modares University. Cronbach's alpha was used to estimate the reliability of the questionnaire and showed good reliability for the instrument (Table 1).

Table 1. Results of Cronbach's alpha

| Scale | Dimension | Cronbach's alpha |
|----------------------------------|-------------------------|------------------|
| Personality traits | Neuroticism | .84 |
| | Extraversion | .87 |
| | Openness to experience | .85 |
| | Agreeableness | .85 |
| | Conscientiousness | .82 |
| Educational-Research Performance | Educational performance | .81 |
| | Research performance | .86 |

Data analysis

Analysis of data was made in two sections, descriptive and inferential statistics. Statistics such as frequency distribution, percentage, mean and standard deviation were used in the descriptive section. Correlation coefficient, t-test, and regression analysis were used in the inferential analysis section. In applying these statistical techniques, Statistical Package for Social Science (SPSS) was used.

Results

More than half of the respondents were males (69.5% versus 30.5% females). The average age of the faculty members was about 44, with the most frequency of 41 to 50 years old. The respondents' mean work experience was 16 years. About half of the respondents were assistant professors (48.5%), followed by associate professors (28%). The findings showed that over the past five years, the majority of the respondents (85.8%) had written between 1 and 5 Persian articles. Also, 9.9% of the respondents wrote more than 10 Persian articles. Regarding articles in English, the findings indicated that 73.5% of the respondents had written between 1 and 3 English articles. Almost all the respondents participated in at least one national conference. Regarding research projects at the university, the findings showed that the highest frequency was from 1 to 2 projects (63.5%), and the findings regarding research projects outside the university indicated that the highest frequency was also related to 1 to 2 projects (47.6%). The findings concerning writing or translating a book showed that 34.1% of the respondents had written or translated at least one book.

As previously stated, personality traits include five dimensions: neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness. The mean score of neuroticism was 27.23. Also, the mean score of extraversion, openness to experience, agreeableness, and conscientiousness dimensions were 31.99, 36.64, 34.43, and 31.38, respectively. The findings on the respondents' self-evaluation of educational and research performance showed that the mean score on educational performance was 22.82 and on research performance 21.02. The results regarding probable differences in personality traits by gender (Table 2) showed significant differences on neuroticism, extraversion, and conscientiousness between the male and female faculty members. The findings revealed that on extraversion, the male faculty members had a significantly higher score than the female ones, whereas the female members scored higher on the dimensions of neuroticism and conscientiousness compared to the male ones. On openness to experience and agreeableness, the female faculty members got higher scores than the male group. However, these scores were not statistically significant. The results regarding probable differences of educational and research performance by gender showed that in both dimensions of performance, the male faculty members had higher scores than their female counterparts, and this difference in research performance was significant (Table 2).

Pearson correlation analysis was conducted to examine the probable relationships between educational and research performance and personality traits

Table 2. Results of t-test

| Variable | Gender | Mean | SD | t-value | Sig. | |
|----------------------------------|-------------------------|--------|-------|----------------------|---------------------|------|
| Personality traits | Neuroticism | Male | 26.58 | 6.11 | -2.628** | .009 |
| | | Female | 28.72 | 7.59 | | |
| Extraversion | Male | 32.73 | 7.90 | 2.108* | .036 | |
| | Female | 30.28 | 8.88 | | | |
| Openness to experience | Male | 36.10 | 9.23 | -1.290 ^{ns} | .198 | |
| | Female | 37.87 | 8.60 | | | |
| Agreeableness | Male | 34.53 | 7.96 | .233 ^{ns} | .816 | |
| | Female | 34.22 | 7.90 | | | |
| Conscientiousness | Male | 30.56 | 9.01 | -2.349* | .020 | |
| | Female | 32.25 | 8.61 | | | |
| Educational-Research Performance | Educational Performance | Male | 23.05 | 4.32 | 1.009 ^{ns} | .314 |
| | | Female | 22.29 | 4.18 | | |
| Research Performance | Male | 21.45 | 4.82 | 2.015* | .045 | |
| | Female | 20.04 | 4.44 | | | |

^{ns}: Non significant; **: $p < .01$; *: $p < .05$

(Table 3). The results indicated that there were negative and significant relationships between neuroticism and educational performance ($p < .05$) and research performance ($p < .01$). Educational performance had positive and significant relationships with the variable of conscientiousness ($p < .05$) and extraversion and agreeableness ($p < .01$). The findings concerning the relationship between research performance and personality traits showed that this variable had positive and significant relationships ($p < .05$) with the variables of extraversion, agreeableness, and conscientiousness. In addition, a positive and significant relationship was found between research performance and openness to experience ($p < .01$).

Table 3. Results of correlation analysis

| Personality traits | Educational performance | | Research performance | |
|--------------------|-------------------------|------|----------------------|------|
| | r | Sig. | r | Sig. |
| Neuroticism | -.232* | .035 | -.440** | .000 |
| Extraversion | .308** | .007 | .230* | .037 |

| Personality traits | Educational performance | | Research performance | |
|------------------------|-------------------------|------|----------------------|------|
| | r | Sig. | r | Sig. |
| Openness to experience | .190 ^{ns} | .099 | .335** | .000 |
| Agreeableness | .411** | .000 | .284* | .019 |
| Conscientiousness | .295* | .017 | .281* | .021 |

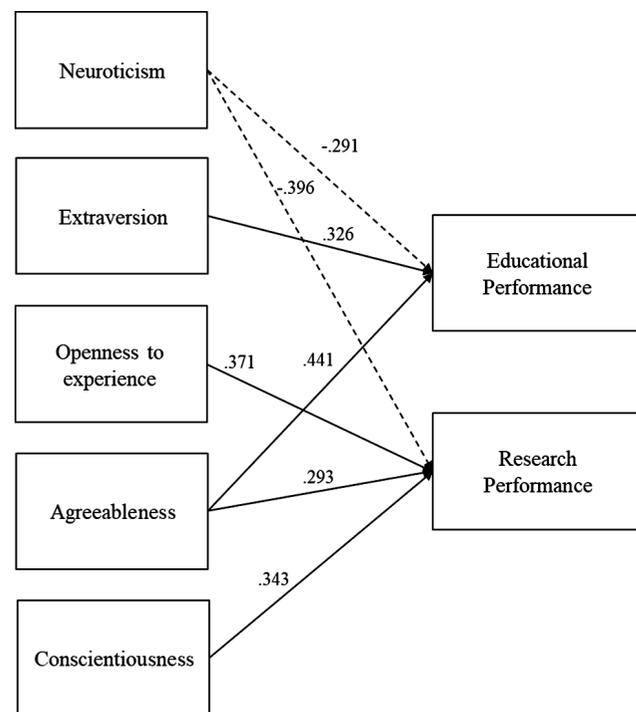
^{ns}: Non significant; **: $p < .01$; *: $p < .05$

Regression analysis was used to find the effect of the faculty members' personality traits on educational and research performance (Table 4). Neuroticism had a negative effect on educational performance and research performance. In contrast, extraversion and agreeableness had a positive effect on educational performance. Also, openness to experience, agreeableness, and conscientiousness had a positive effect on research performance.

Table 4. Results of regression analysis

| Dependent variable | Variable | Unstandardized coefficients (B) | t | Sig. |
|-------------------------|------------------------|---------------------------------|--------|------|
| Educational Performance | Constant | 20.16 | 9.198 | .000 |
| | Neuroticism | -.285 | -2.274 | .019 |
| | Extraversion | .364 | 3.747 | .000 |
| | Agreeableness | .452 | 4.698 | .000 |
| | Conscientiousness | .142 | 1.142 | .254 |
| Research Performance | Constant | 18.81 | 8.451 | .000 |
| | Neuroticism | -.644 | -5.433 | .000 |
| | Extraversion | .074 | 1.494 | .136 |
| | Openness to experience | .545 | 3.216 | .000 |
| | Agreeableness | .242 | 2.372 | .016 |
| | Conscientiousness | .325 | 2.254 | .023 |

The results of standardized coefficients (Figure 2) showed that agreeableness had the most effect on educational performance ($\beta = .441$) and neuroticism had the most effect on research performance ($\beta = -.396$).

Figure 2. Personality traits and education-research performance

Note: Solid lines represent positive relationships and dashed lines represent negative relationships

Discussion and conclusions

Considering that human resources are the most important factor in the growth and competitive advantage of organizations, and due to the importance of identifying the reasons for individuals' job performance, the presented study investigated the relationship between faculty members' personality traits and educational-research performance. According to the importance of self-evaluation, which has been mentioned in various studies (Barat & Moire, 2004; Robert & Duroires, 2004), in this study, this method was used to evaluate education and research performance of faculty members. One of the research goals was to examine personality traits of faculty members. The findings indicated that the faculty members had similarities and differences regarding the dimensions of personality

traits. Based on the results, there were significant differences between the male and female faculty members on neuroticism, extraversion, and conscientiousness. In extraversion, the male faculty members had significantly higher scores than the female ones, whereas the female members had significantly higher scores on neuroticism and conscientiousness than the other group. There were no significant differences on openness to experience and agreeableness between the two groups. Accordingly, the null hypothesis, stating that "There is no significant difference between male and female faculty members on neuroticism, extraversion, and conscientiousness," was rejected. In contrast, the null hypothesis, stating that "There is no significant difference between male and female faculty members on openness to experience and agreeableness," was confirmed. The results are consistent with Smith et al. (2008) and Costa et al. (2001). Smith et al. (2008) reported that females had higher scores on neuroticism and conscientiousness than males. Costa et al. (2001) also stated that females had a higher level of neuroticism than males. Self-evaluation findings showed that the male faculty members had significantly better research performance than the other group. Therefore, the null hypothesis, stating that "There is no significant difference between male and female faculty members in educational performance," was confirmed and the null hypothesis, stating that "There is significant difference between male and female faculty members on research performance," was rejected.

Another objective of the study was to investigate the relationship between different dimensions of personality traits and educational and research performance. Neuroticism showed negative and significant correlations with educational performance and research performance. This means that with a decrease in neuroticism, individuals may show better performance. Extraversion, agreeableness, and conscientiousness had positive and significant relationships with educational performance and research performance. Finally, openness to experience showed positive and significant relationships with research performance. Based on the findings, the null hypothesis, stating that "There is no significant relationship between openness to experience and educational performance," was confirmed. In contrast, other null hypotheses were rejected. Asdenia et al. (1395) reported a significant relationship between personality trait and job performance. Finally, the findings of standardized coefficients indicated that agreeableness had the most effect on educational performance (positively) and neuroticism had the most effect on research performance (negatively). It may be concluded that an individual with agreeableness emphasizes interpersonal tendencies and he/she has sympathy with others and is keen to help them. Therefore, his/her educational performance can be improved. The negative effect of neuroticism on research performance can be

described according to the features of this dimension, in which a neurotic person has low self-esteem, usually has a negative attitude toward his/her work, and he/she experiences some stress. Thus, individuals with this feature will have a negative evaluation of their performance. Summing up the findings, it can be said that it is important and necessary to pay attention to personality traits in general and the dimensions of agreeableness and neuroticism in particular, because faculty members' educational and research performance has a significant effect on the quality of universities.

As with any study, it is important to highlight the limitations of this study and the directions for future research. This study was limited by its relevance on self-reported data. In addition, only quantitative methods were used in this study. In further studies, qualitative data can be gathered using interviews and observation to gain an in-depth understanding of faculty members' performance.

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