Searching for the "Big Five" in a Greek context: the NEO-FFI under the microscope

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Abstract

The five-factor inventory (FFI) is a commonly used personality test based on the NEO-personality inventory revised. It has been translated into several languages and validated in a number of countries. Using a sample of 1204 individuals, the present study evaluates the psychometric properties and factor structure of the Greek FFI and provides normative information for its use with Greek populations. Convergent validity is also assessed by studying the relationship between the five scales of the FFI and the Brief Symptom Inventory. Results show that although the factor scales had acceptable internal consistency, they were highly intercorrelated. Exploratory factor analyses failed to reproduce the appropriate factor structure, yielding instead numerous fragments of the five dimensions. Confirmatory factor analyses also failed to lend support to the five factor model of personality as measured by this instrument. Based on these results, the use of the instrument is recommended only with serious caution in this cultural context. Further research ought to decipher whether the failures to reproduce the five factor model using the FFI in this and other cultures represents a challenge to the universality of the theory, or merely a shortcoming of the specific instrument.
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1. Introduction

One of the most popular conceptions of personality today, which rests on the assumption of a specific number of underlying personality dimensions, is the five factor model. A significant body

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of research supports the presence of five orthogonal dimensions of personality, which apparently also exist in the trait adjectives people use in their daily lives to describe others or themselves (Goldberg, 1993). The "Big Five" dimensions that have emerged from factor analyses of peer and self-ratings of personality descriptors are neuroticism, extraversion, openness to experience, conscientiousness and agreeableness. They have been replicated in several countries including Korea, France, Estonia and Finland (e.g. Pulver, Allik, Pulkkinen, & Hamalainen, 1995; Rolland, Parker, & Stumpf, 1998; Spirrison & Choi, 1998) using various personality inventories (Piedmont, McCrae, & Costa, 1991).

The most popular assessment instrument for these five dimensions is Costa and McCrae's NEO-personality inventory revised (NEO-PI-R), which consists of 240 items that result in the five factors and a number of factor facets. Because of its length, a briefer version of the instrument, the NEO-five factor inventory (NEO-FFI), was created (Costa & McCrae, 1992a) with 60 items. To derive each of the factor scales of the NEO-FFI, 12 items from the 1986 administration of the NEO-PI, were selected for their high positive loading on the corresponding trait. The brief instrument has adequate internal reliability and correspondence with the full scale (McCrae & Costa, 1989) and thus has been used widely for research and clinical purposes. It shows good convergent validity with other personality instruments, correlates with ratings provided by others of the target's personality (Kurtz & Sherker, 2003; Parker & Stumpf, 1998), and appears to be a valid measure of genetically/biologically based personality dimensions (Riemann, Angleitner, & Strelau, 1997).

In spite of its widespread use and the increasing acceptance of its external validity, research carried out so far in a number of countries using exploratory and confirmatory factor analyses (CFA), has called into question the factor structure of the NEO-FFI with some studies finding fewer than five factors (Ackerman & Heggestad, 1997; Ferguson & Patterson, 1998), others finding as many as eight (Yoshimura, Ono, Nakamura, Nathan, & Suzuki, 2001) and yet others finding weak fit indices for a five factor solution (Mooradian & Nezlak, 1996). This is not surprising given that even the long version of the instrument has not fared well when subjected to CFA (e.g. Parker, Bagby, & Summerfeldt, 1993).

Concern regarding the use of the FFI has surfaced both in English and non-English speaking countries. In a British study, Egan, Deary, and Austin (2000) found that although British norms corresponded favourably with American, the factor structure of the NEO-FFI was less satisfactory. Factors N, A and C appeared reliably, while many of the items of factors O and E did not load adequately on the expected factors. In a Canadian sample of female college students, Holden and Fekken (1994) found acceptable support for the five factors with exploratory factor analysis, but failed to obtain a five factor solution with CFA. Even with an American sample, Tokar, Fischer, Snell, and Harik-Williams (1999) failed to obtain satisfactory orthogonal or oblique factor solutions with CFA. Hence, the utility of the NEO-FFI in measuring the "Big Five" dimensions needs to be evaluated cautiously even with regards to English speaking cultures where no translation of the instrument was required.

The need to empirically validate this instrument is even more pressing in non-English speaking nations where the questionnaire requires translation. In a study carried out in Germany, Schmitz, Hartkamp, Baldini, Rollnik, and Tress (2001) examined the psychometric properties of the German NEO-FFI among a group of psychosomatic patients and a reference group of personality disorder patients. Their findings are of concern to FFI users: First, the five dimensions were not orthogonal (the same concern was raised by Church & Burke (1994)). Secondly, CFA failed to