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Psychometric properties of the Greek version of the Test Anxiety Inventory

Georgia Papantoniou¹, Despina Moraitou², Dimitra Filippidou³

¹University of Ioannina, Ioannina, Greece;
²Aristotle University of Thessaloniki, Thessaloniki, Greece.
Email: gpapanto@uoi.gr, demorait@psy.auth.gr, d-fil@hotmail.com
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The present study examined the psychometric properties of the Greek version of Spielberger (1980) self-report measure of test anxiety, the Test Anxiety Inventory (TAI). The total sample consisted of 231 undergraduate students (124 male, 107 female). The results verified the well established two-factor structure for the TAI. The two factors represented the Worry (TAI-W) and Emotionality (TAI-E) subscales, respectively. Furthermore, on the basis of the confirmatory factor analyses, using either the set of 20 items or the set of 16 items, we found convincing support for the existing relationship between the two subscales of the Test Anxiety Inventory. The internal consistency of the twenty-item TAI-T scale and for the eight-item Worry and Emotionality subscales ranged from Cronbach's $\alpha = .81$ to .94. The G-TAI and its subscales showed differential statistically significant relationships with a self-report measure of cognitive interference.

Keywords: Psychometrics, Test Anxiety, Greece

Introduction

Education is vital for every country in the world, and Greece is not an exception as a strong and effective education can help boost the development of the country. As testing is a common practice in contemporary society, like Greek society, for making important decisions about an individual's status in school, college, and work (Lowe, Lee, Witteberg, Prichard, Luhr, Cullinan, Mildren, Raad, Cornelius, & Janik, 2008; Zeidner, 1998), it is no wonder that test anxiety is a significant educational problem affecting many of students in our schools and colleges.

Students with test anxiety feel tense, fearful and worried in evaluative situations (Spielberger, Gonzalez, Taylor, Anton, Algaze, Ross, & Westberry, 1979; Spielberger & Vagg, 1995). Research relating test anxiety to academic performance has established that high levels of test anxiety are associated with lower levels of students' learning and performance (Sub & Prabha, 2003). Often test-anxious students at all levels of education perform more poorly on standardized tests (Everson, Millsap, & Rodriguez, 1991) and receive poorer grades (Chapell, Blanding, Silverstein, Takahashi, Newman, Gubi, & McCann, 2005) than they ought to because anxiety and other test-taking deficiencies interfere with their performance, either directly or indirectly (Efklides, Papadaki, Papantoniou, & Kiosseoglou, 1997, 1999; Lowe et al., 2008; Metallidou & Vlachou, 2007).

In order to assess individual differences in test anxiety, Spielberger developed the Test Anxiety Inventory (TAI; Spielberger, 1980) which is a self-report instrument. The TAI is one of the most widely used of the test anxiety inventories as it has been translated or adapted for many populations (see Ware, Galassi, & Dew, 1990).

Spielberger had two major goals in developing the TAI: (1)

to construct a brief, valid self-report measure of the test anxiety which was highly correlated with other measures of the construct and (2) to use factor analytic procedures to measure the emotionality and worry components of the test anxiety identified by Liebert and Morris (1967). Emotionality refers to perceived autonomic reactions (physiological arousal) evoked by evaluative stress (Spielberger & Vagg, 1995), whereas worry refers to cognitive concerns about the consequences of failure (Morris & Liebert, 1969). Worry tends to be associated with performance decrements on cognitive and intellectual tasks, but emotionality is not (see Hembree, 1988; Hong, 1998; Spielberger et al., 1979; Van der Ploeg, 1984).

For the TAI's original development, exploratory factors analytic procedures (principal axis factoring with varimax rotation) have been used by its constructors. According to them, the TAI consists of 20 items, and contains two subscales measuring worry and emotionality. Each subscale is defined by eight items, with the remaining four (1, 12, 13, & 19) items not ordinarily included in subscale scores as the results did not indicate clear patterns favoring either subscale (Spielberger et al., 1979).

There are conflicting views of the factor structure of the TAI as regards (a) the necessity of the 20-item TAI, and (b) the interrelations of the two components of test anxiety. Despite Spielberger and colleagues (Spielberger, Gonzalez, Taylor, Algaze, & Anton, 1978; Spielberger et al., 1979) having reported correlations between the Worry and Emotionality subscales of .71 for males and .64 for females, most studies of the factorial structure of the TAI using exploratory factor analysis, have employed orthogonal rotations (e.g. varimax) following a principal factor extraction (Hedl, 1984; Schwarzer & Kim, 1984; Spielberger et al., 1978, 1979; Van der Ploeg, 1983). On the other hand, most researchers that used confirmatory factor analysis have established a two-factor oblique model of the 16-item TAI, composed of correlated Worry and Emotionality

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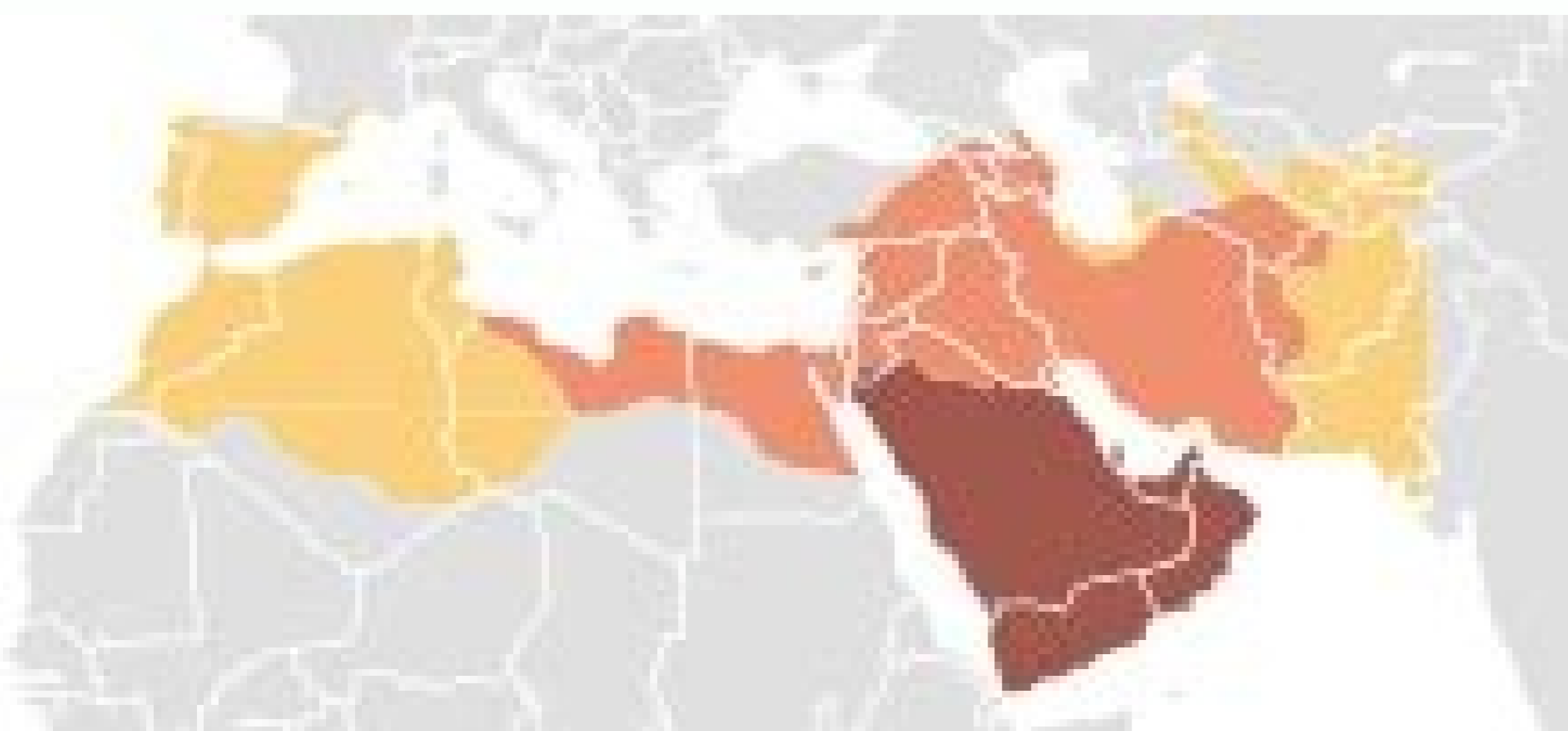
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