



Confirmatory factor analysis of the Mayer–Salovey–Caruso Emotional Intelligence Test V 2.0 (MSCEIT)

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Abstract

Gignac (2005) and Palmer, Gignac, Manocha, and Stough (2005) recently raised important issues concerning the construct validity of the Mayer–Salovey–Caruso Emotional Intelligence Test Version 2.0 (MSCEIT; Mayer, Salovey, & Caruso, 2002). This study sought to further examine the constructs measured by the MSCEIT by replicating and extending their research through confirmatory factor analyses (CFA) of the following models: (a) a one-factor model reflecting general emotional intelligence (EI); (b) an oblique two-factor model reflecting the Experiential and Strategic areas; (c) an oblique four-factor model reflecting the four branches or scales of the ability model; (d) an oblique three-factor model reflecting the Perceiving Emotions, Understanding Emotions, and Managing Emotions factors; (e) a general factor model with a nested orthogonal Perceiving Emotions factor and oblique Understanding Emotions and Managing Emotions factors; and (f) a hierarchical model reflecting the MSCEIT's implied theoretical structure, with oblique first-order factors reflecting the four branches, two oblique second-order factors, and a third-order general EI factor. Results of these analyses replicate those of Gignac (2005) and Palmer et al. (2005), suggesting that the MSCEIT does not measure all the constructs intended by its authors. Further refinement of the test, underlying theory, or both, is needed, with particular emphasis on the Using Emotions factor. Published by Elsevier Ltd.

Keywords: Emotional intelligence; MSCEIT; CFA; Factor analysis; EI

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1. Introduction

The Mayer–Salovey–Caruso Emotional Intelligence Test Version 2.0 (MSCEIT; Mayer, Salovey, & Caruso, 2002) is the most recent operationalization of Mayer and Salovey's (1997) ability model of emotional intelligence (EI). Mayer, Salovey, Caruso, and their colleagues have conducted an extensive program of research on the validity of the MSCEIT and its predecessors, the MSCEIT Research Version 1.1 (MSCEIT V1.1) and the Multi-Factor Emotional Intelligence Scale (MEIS; Mayer, Caruso, & Salovey, 1999). Several of these validity studies have examined the internal structure of the batteries of tasks intended to measure the ability model of EI (Ciarrochi, Chan, & Caputi, 2000; Mayer et al., 1999; Mayer et al., 2002; Roberts, Zeidner, & Matthews, 2001). Research on the internal structure of a test is a particularly important aspect of construct validity because it determines the extent to which the observed scores on a test covary among themselves and how they covary with the underlying theoretical structure of the test.

Results of factor analytic research on the MSCEIT precursors (i.e., MEIS and MSCEIT V1.1) led Mayer, Salovey, Caruso, and their colleagues to conclude that one-, two-, and four-factor models of the structure of EI provided a good fit to the data (e.g., Mayer et al., 1999). Mayer, Salovey, Caruso, and Sitarenios (2003) attempted to replicate these findings on the MSCEIT using confirmatory factor analysis (CFA) with a sample of 1985 adults. Based on their results, Mayer et al. (2003, p. 103) asserted that each of these three models provided a viable fit to the data, but that the fit of the four-factor model was “markedly superior to the other models”.

Gignac (2005), however, after noting what appeared to be errors in Mayer et al.'s (2003) analyses, attempted to replicate their results by reanalyzing a correlation matrix published in their article. Results of Gignac's analyses indicated that the fit provided by the one- and two-factor models were not acceptable. For both models, the Tucker–Lewis-Index (TLI) was less than .90 and the root-mean-square error of approximation (RMSEA) was greater than .05. As Gignac further noted, Mayer et al. (2003) constrained the covariances to equality between the Perceiving Emotions and Using Emotions factors, and between the Understanding and Managing Emotions factors due to the high covariance between the Perceiving and Using Emotions factors in their best fitting four-factor model. Gignac therefore examined a four-factor model without the equality constraints. Results of this analysis revealed a nonpositive definite matrix solution, indicating that this model was also unacceptable. Gignac also found a correlation of .97 between the Perceiving Emotions and Using Emotions factors, suggesting that these two constructs were indistinguishable. In fact, he found that the fit provided by a model with the correlation constrained to 1.0 was no worse fitting than the unconstrained four-factor solution that corrected for the non-positive definite matrix. In sum, results of Gignac's (2005) reanalyses of Mayer et al.'s (2003) data raised serious concerns about the factor structure of the MSCEIT.

Palmer, Gignac, Manocha, and Stough (2005) recently conducted an independent examination of the factor structure of EI with a diverse sample of 450 adults in Australia. Although they administered the MSCEIT V1.1, which consists of 292 items and 12 subscales, the test publisher (Multi-Health Systems) scored only the data for the 141 items that were ultimately used in the MSCEIT. Results of these analyses revealed that the one-factor model of EI provided a poor fit to the data. However, for this model, all of the tasks loaded significantly on the general factor, suggesting the presence of a general EI construct. The two-factor model reflecting the Strategic and Experiential areas also provided a poor fit to the data. In contrast to these results, the fit

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