Incremental validity of the Mayer–Salovey–Caruso Emotional Intelligence Test Version 2.0 (MSCEIT) after controlling for personality and intelligence

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ABSTRACT

This study examined the incremental validity of the Mayer–Salovey–Caruso Emotional Intelligence Test Version 2.0 after controlling for general cognitive ability and the Big 5 personality factors. The criterion measures used were academic achievement, psychological well-being, peer attachment, positive relations with others, and alcohol use. Results of these analyses suggest that emotional intelligence (EI) explains a significant and moderate to large amount of unique variance for alcohol use and positive relations with others after controlling for cognitive ability and personality. Implications of these results for theory and future research on the ability model of EI are discussed.

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1. Introduction

Of the theories of emotional intelligence (EI) that have been proposed over the past decade, none has attracted as much attention in the research literature as Mayer and Salovey's (1997) ability model. In their model, EI consists of the ability to accurately perceive emotions, use emotions to facilitate thought, understand one's own emotions and those of others, and manage emotions to promote adaptive behavior and personal growth. Mayer, Salovey, and Caruso (2002) developed the Mayer–Salovey–Caruso Emotional Intelligence Test Version 2.0 (MSCEIT) to measure overall EI and each of the four branches of the ability model. They 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).

Mayer, Salovey, Caruso, and their colleagues have demonstrated that the MSCEIT can be objectively scored and its constructs reliably measured (for a review, see Mayer, Salovey, & Caruso, 2004). The pattern of correlations (convergent and discriminant) that have been reported between the MSCEIT and other measures are generally logical and consistent with theory. For example, moderate but significant correlations have been found between the MSCEIT and measures of cognitive ability and the Big 5 personality dimensions, suggesting that EI is related to but distinguishable from intelligence and personality (e.g., Bastian, Burns, & Nettelbeck, 2005; Brackett & Mayer, 2003; Brackett, Mayer, & Warner, 2004). In addition, scores on the MSCEIT have been found to correlate with important behavioral outcomes. For example,

positive correlations have been reported with academic achievement (Lyons & Schneider, 2005; Zeidner, Shani-Zinovich, Matthews, & Roberts, 2005), psychological well-being (Brackett & Mayer, 2003; Lopes, Salovey, & Straus, 2003), and peer attachment (Lopes et al., 2003; Lopes, Brackett, Nezlek, Schütz, Sellin, & Salovey, 2004), among others; and negative correlations have been reported between the MSCEIT and deviant (e.g., physical altercations, vandalism) and maladaptive behavior, such as cigarette, drug, and alcohol use (e.g., Brackett et al., 2004; Trinidad & Johnson, 2002). Mayer et al. (2004) asserted that the evidence substantiates the validity of the MSCEIT as a measure of EI and the importance of EI as a psychological construct.

Despite the extensive amount of research on the ability model that has been conducted, Brody (2004) recently argued that "there is no convincing evidence that the MSCEIT provides incremental predictive validity over and above standard measures of intelligence and personality for important socially relevant outcomes" (p. 237). As he noted, a number of the studies supporting the incremental validity of the MSCEIT have not been published in peer-refereed journals (e.g., Formica, 1998; Rubin, 1999). Brody also argued that, when the MSCEIT has been found to explain a significant amount of variance beyond personality or intelligence, the amount of variance that is accounted for by EI is often "trivial". Finally, few of the published studies examining the incremental validity of the MSCEIT have included measures of both personality *and* intelligence. In evaluating EI's predictions, more can be learned by controlling for commonly used measures of socio-emotional traits such as the Big 5 and cognitive variables such as IQ to ascertain the unique contribution of EI to real-world outcomes. If EI does not explain a nontrivial amount of variance after controlling for personality and intelligence, then its importance and utility as a psychological construct is questionable.

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A number of studies published in peer reviewed journals have examined the incremental validity of the MSCEIT with a variety of outcome measures, several of which were published after Brody's (2004) review (Barchard, 2003; Bastian et al., 2005; Brackett & Mayer, 2003; Brackett et al., 2004; Lopes et al., 2003; Lopes et al., 2004; Lyons & Schneider, 2005; Mestre, Guil, Lopes, Salovey, & Gil-Olarte, 2006; Márquez, Martin, & Brackett, 2006; Rode, Mooney, Arthuad-Day, Near, Baldwin, & Rubin, 2007; Rode, Mooney, Arthuad-Day, Near, Rubin, & Baldwin, 2008). Nonetheless, at the current time, only a small number of studies have used standard measures of both intelligence *and* personality as controls in the same study (e.g., Bastian et al.; 2005; Rode et al., 2007; Rode et al., 2008). In addition, although several studies claim to have investigated the incremental validity of the MSCEIT, they either used tasks with unsubstantiated validity to measure intelligence or personality, did not control for both personality and intelligence in the same analysis, or used performance on a brief verbal measure to estimate cognitive ability. Brief measures of verbal ability are not satisfactory estimates of general cognitive ability, or psychometric *g* (see Jensen, 1998). Because the *g* factor explains the majority of variance in performances that can be predicted from tests (e.g., Thorndike, 1985; Thorndike, 1986), determining the incremental validity of EI after controlling for *g* is necessary to determine its incremental predictive validity.

Results of the most recent incremental validity studies that used standard measures to control for both personality and general cognitive ability are consistent with Brody's (2004) review. For example, Bastian et al. (2005) found that scores on the MSCEIT accounted for a significant increment of variance ($\Delta R^2 = 6\%$) in only one of five life skills assessed (viz., Anxious Thoughts) after controlling for the Big 5 and *g*. Results of Rode et al. (2007) indicated that the MSCEIT accounted for a statistically significant yet minimal amount of unique variance in public speaking effectiveness ($R^2 = 1\%$), but did not explain additional variance in group behavior effectiveness and academic performance. Last, Rode et al. (2008) found that overall EI did not explain a statistically significant increment of variance in GPA or life satisfaction after controlling for *g*, the Big 5, and long-term affect.

Although results of these studies are consistent with Brody's (2004) critique, the range of outcome measures used by Bastian et al. (2005) and Rode et al. (2007, 2008) is limited, particularly concerning maladaptive behavior. One could argue that EI may lack substantial incremental validity for the specific criteria examined in these studies, but it may explain a significant and nontrivial amount of variance in other important and socially relevant real-world outcomes that were not examined. The aim of this study, therefore, was to examine the incremental validity of the MSCEIT after controlling for both general cognitive ability and personality using standardized measures with known psychometric properties using external criteria of both prosocial and maladaptive behaviors not examined by Bastian et al. (2005) or Rode et al. (2007, 2008) is limited.

2. Method

2.1. Participants

Participants were 150 undergraduate students from over 30 fields of study at a 4-year public university in North Central Florida (62 frosh, 43 sophomores, 24 juniors, and 21 seniors; 40 men and 110 women). Participants volunteered to participate to earn research credit or extra credit in an undergraduate course. Age of participants ranged from 17 to 36 years ($M = 19.7$, $SD = 2.1$). Regarding race/ethnicity, 68.7% of the participants identified themselves as White/Non-Hispanic, 14.7% as African American, 9.3% as Hispanic American, 5.3% as Asian American, 1.3% as Other, and

0.7% as Native American. All participants were treated in accordance with the "Ethical Principles of Psychologists and Code of Conduct" (American Psychological Association., 2002).

2.2. Instruments

2.2.1. Emotional intelligence

The Mayer–Salovey–Caruso Emotional Intelligence Test Version 2.0 (MSCEIT; Mayer et al., 2002) was used to measure EI. The MSCEIT consists of 141 items measuring the ability to solve emotional problems. The MSCEIT has eight subtests that are intended to measure the four branches of the ability model (i.e., perceiving emotions, using emotions, understanding emotions, and managing emotions) with two subtests per branch. Perceiving emotions is comprised of the faces and pictures subtests. These subtests measure the ability to perceive and appraise emotions in faces and pictures/designs. Examinees must identify the intensity of emotion expressed in several images of faces and designs using the following emotions: anger, sadness, happiness, disgust, fear, surprise, and excitement. Using emotions consists of the sensations and facilitation subtests. On these tasks, examinees must identify specific emotions that may affect one's behavior or performance on cognitive tasks. Specifically, examinees must generate emotions or moods and match them with sensations, behaviors, or tasks that typically accompany them. Understanding emotions is measured by the blends and changes subtests. On the blends subtest, examinees must demonstrate an understanding of how individuals may experience several emotions simultaneously, and how some emotions, when combined, form other emotions. The changes subtest asks respondents to identify how emotions change over time. Finally, managing emotions is measured by the emotion management and emotional regulation subtests. These tasks provide examinees with social situations and require them to select the most appropriate social response to achieve desired outcomes (Mayer, 2001).

The overall EI score has a mean of 100 and standard deviation of 15. Reported split-half reliabilities range from 0.79 to 0.91 for the four factors, and 0.91 for Overall EI (Mayer et al., 2002). Test-retest reliability was 0.86 for Overall EI after three weeks (Brackett & Mayer, 2003). Results of recent confirmatory factor analysis research has raised questions about the factor structure of the MSCEIT, however (Gignac, 2005; Palmer, Gignac, Manocha, & Stough, 2005; Rossen, Kranzler, & Algina, 2008). These results suggest that the MSCEIT does not measure all the constructs it was intended to measure, with the exception of overall EI. Therefore, given the lack of agreement in the literature about the constructs measured by the first-order factors of the ability model, only the overall EI score was used in this study.

The MSCEIT can be scored using either the consensus-based or expert-rating scoring method. The correlation between these two methods for the overall EI score is .98 (Mayer et al., 2002), indicating that scores obtained from either scoring method are virtually identical. The consensus scoring method was used in this study.

2.2.2. Personality

The traits from the "Big 5" were measured with the International Personality Item Pool (IPIP; Goldberg, 1999). The IPIP consists of 100 items measuring the Big 5 personality dimensions (extraversion, agreeableness, conscientiousness, emotional stability, and openness to experience). Goldberg reported high internal consistencies for the scales: extraversion ($\alpha = 0.91$), agreeableness ($\alpha = 0.88$), conscientiousness ($\alpha = 0.88$), emotional stability ($\alpha = 0.91$), and openness to experience ($\alpha = 0.90$). Criterion-related evidence of validity has been established with the NEO-PI-R (Costa & McCrae, 1992), with correlations ranging from 0.88 to 0.93. Results of confirmatory factor analysis also support the internal structure of the IPIP (Lim & Ployhart, 2002).