

EXAMINING THE RELIABILITY AND VALIDITY OF THE EMOTION-BASED DECISION-MAKING SCALE

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Abstract

The purpose of this study was to evaluate the reliability and validity of the Emotion-Based Decision-Making Scale (EBDMS; Barchard, 2001). This scale was designed to measure the tendency to make decisions based upon emotions, one aspect of Emotional Intelligence as defined by Mayer, Caruso, and Salovey (2000). The 149 university students who participated in this study completed the EBDMS twice, one week apart, so we could assess both internal consistency and test-retest reliability. To assess convergent, discriminant, and predictive validity, Tett's Intuition vs. Reason Scale (Tett, Wang, Gribler, & Martinez, 1997), the International Personality Item Pool Activity Level Scale (Goldberg, 1999), and a familial accord item were administered to each participant once and correlated with the EBDMS scores. The EBDMS had moderate internal consistency and test-retest reliability, and strong convergent validity and discriminant validity, but poor predictive validity for a single-item measure of quality of familial relationships. Item analyses revealed that item 2 reduced internal consistency and lacked convergent validity, and should probably be revised.

Introduction

Peter Salovey and John D. Mayer introduced the construct of Emotional Intelligence (EI) to the psychological community in 1990, defining it as "the subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them, and to use this information to guide one's thinking and actions" (p. 189). Since that time, many researchers have offered alternative definitions of Emotional Intelligence, particularly after the mainstream popularity of Daniel Goleman's book, *Emotional Intelligence: Why It Can Matter More Than IQ*, in 1995. Several new models of EI have been proposed over the last 10 years, including a revised version of the original definition. Mayer, Caruso, & Salovey's (2000) newer, intelligence-based model states that cognizance and emotions work in collaboration with one another to elicit behaviors from one of four categories: identification of emotions, functional application of emotions, understanding emotions, and managing emotions (Caruso, 2003).

Emotion-based decision-making falls under the second category of the Mayer, Caruso, & Salovey (2000) model, and contrary to what "logic" would indicate, the ability to use emotions when making decisions is a prerequisite for sound judgment in human beings. A series of recent studies from the University of Iowa have provided strong support for this "link between the abnormalities in emotion and feeling of [certain] patients and their severe impairment in judgment and decision-making in real-life" (Bechara, 2004, p. 31). As an example, consider the case of "Elliot," a patient who had lost the ability to make even the most simple of decisions after neurosurgery damaged the pathway between his amygdala and prefrontal lobes. Goleman (1995) explains that while "Elliot's" cognitive abilities remained intact, his emotional faculties were severely impaired, leaving him unable to prioritize his options when faced with a choice.

This level of emotion-based decision-making seems to function primarily on a subconscious level, as indicated by studies where participants showed physiological reactions to stimuli before perceiving them consciously (Goleman, 1995). Indeed, as of yet, the most effective measures of the role emotions play in decision-making have consisted of ability-based comparisons between people with neurological trauma to the

amygdala, prefrontal or ventromedial cortex, and control groups consisting of people without neurological trauma (Bar-On, Tranel, Denburg, & Bechara, 2003).

Some researchers have posited that once emotion-based decision-making becomes a conscious choice of emotion over logic, it is less a matter of true EI, and more a matter of personality (Caruso, Mayer, & Salovey, 2002). Consequently, there is strong debate as to whether a self-report scale can act as a valid measure of emotion-based decision-making. One could assert that personality and EI are still related, however, since people with higher levels of EI might be more inclined to “go with their instincts” as a result of past experiences where intuitive decisions have proven to be beneficial.

The purpose of this study was to examine the reliability and validity of a new self-report measure of the tendency to rely on emotions when making conscious decisions, the Emotion-Based Decision-Making Scale (EBDMS; Barchard, 2001). We examined internal consistency, test-retest reliability, convergent validity, discriminant validity, and predictive validity. Item analyses were also conducted for internal consistency, test-retest validity, and convergent validity in order to identify any problematic items.

Methods

Sample

The sample consisted of 149 university students (95 females, 54 males) who received course credit in their undergraduate psychology classes in return for participation in this study. The ages of the participants ranged from 18 to 57 years (mean 19.6, standard deviation 3.9). The ethnic breakdown of the participants was as follows: 78 Caucasian, 21 Hispanic, 17 Asian, 15 African-American, 10 Pacific Islander, 2 Native American, and 6 other.

Measures

The Emotion-Based Decision-Making Scale (EBDMS) attempts to measure a person’s tendency to rely upon emotions and “gut reactions” in making decisions (Barchard, 2001). It has 10 items that use a 5-point Likert response scale. Five items are reverse-coded. Tett’s Intuition vs. Reason Scale (Tett, Wang, Gribler, & Martinez, 1997) measures the degree to which emotions and “gut reactions” dictate a person’s decisions, as opposed to logic. It has 12 items that use a 6-point Likert response scale. The International Personality Item Pool Activity Level Scale (Goldberg, 1999) measures a person’s activity level. It has 10 items (5 positively keyed, 5 negatively keyed) that use a 5-point Likert response scale. Familial accord is the level of harmony existing in a person’s familial relationships. It was measured with a singular self-report item using a 5-point Likert response scale.

Procedures

Each participant completed two one-hour sessions, one week apart. Each participant completed the EBDMS twice, once per session. The remaining measures were administered once to each participant. All measures were administered on the computer under the supervision of trained research assistants.

Statistical Analyses

First, the five items on the EBDMS that needed to be reverse-coded were reverse-coded, and then the total scores on the EBDMS for both session 1 and session 2 were calculated. Next, eight analyses were performed. The internal consistency of the EBDMS was calculated on the data from session 1 using coefficient alpha. The test-retest reliability of the EBDMS was examined by correlating total scores on the EBDMS between session 1 and session 2. The convergent validity of the EBDMS was examined by correlating total scores from session 1 with total scores on the Tett’s Intuition vs. Reason Scale. Discriminant validity was calculated by correlating total scores on the EBDMS from session 1 with total scores the International Personality Item Pool Activity Level Subscale. The predictive validity of the EBDMS was ascertained by correlating total scores from session 1 with the familial accord item. Finally, three item analyses were conducted to determine how internal consistency, test-retest reliability, and convergent validity could be improved.

Results

Reliability

Two types of reliability were examined: internal consistency and test-retest reliability. Internal consistency was moderate. Coefficient alpha was .77, resulting in a standard error of measurement of 2.47. The one-week test-retest reliability of the EBDMS was .70, resulting in a standard error of measurement of 3.09. Both of these are considered moderate to good.

Validity

The EBDMS was evaluated based upon three types of validity: convergent, discriminant, and predictive. Convergent validity with Tett's Intuition vs. Reason Scale was strong ($r = .59, p < .001$). Discriminant validity with the International Personality Item Pool Activity Level Scale was strong ($r = -.15, p = .076$). However, predictive validity with the familial accord item was poor; the correlation was non-significant ($r = -.04, p = .64$).

Item Analyses

Three item analyses were conducted. To determine how internal consistency could be improved, the corrected-item-total correlation and alpha-if-item-deleted were calculated for each item (see Table 1). Item 2 reduced internal consistency, but all other items were adequate. To determine how test-retest reliability could be improved, the test-retest reliability of each individual item was calculated (see Table 2). All items had significant positive correlations. To determine how convergent validity could be improved, the convergent validity of each item with Tett's Intuition vs. Reason Scale was calculated (see Table 2). Item 2 had non-significant correlation, but all other items had statistically significant positive correlations, as would be expected given that the negatively-keyed items were reverse-coded before any analyses were undertaken.

Discussion

The ability to use emotions in the decision-making process is one aspect of Emotional Intelligence. The purpose of this paper was to examine the reliability and validity of the Emotion-Based Decision-Making Scale (EBDMS; Barchard, 2001), a measure of the tendency to make important life decisions based on emotions rather than logic.

In general, results were promising. Internal consistency and test-retest reliability were adequate, and convergent and discriminant validity were good. However, the EBDMS was not able to predict the quality of one's familial relationships. Previous research has found that EI is directly associated with "positive interactions with friends and family" (Brackett & Mayer, 2003, p. 1149), and thus the lack of predictive validity here was disappointing. However, this might have been due to weaknesses in how we measured familial accord (a singular self-report item). Finally, item analyses of internal consistency, test-retest reliability, and convergent validity indicated that item 2 may need revision, but the other items on the EBDMS appear adequate.

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Table 1*Item Analysis for the EBDMS*

Item	Corrected- Item- Total Correlation	Alpha-If- Item- Deleted
1. Listen to my heart rather than my brain.	.53	.74
2. Plan my life based on how I feel.	.21	.78
3. Base my goals in life on inspiration rather than logic.	.43	.75
4. Listen to my feelings when making important life decisions.	.45	.75
5. Believe emotions give direction to life.	.47	.75
6. Listen to my brain rather than my heart.	.63	.72
7. Rarely consider my feelings when making a decision.	.45	.75
8. Plan my life logically.	.29	.77
9. Believe important decisions should be based on logic.	.45	.75
10. Make decisions based on facts, not feelings.	.49	.74

Note. Coefficient alpha for the 10-item test = .77.

Table 2

*One-Week Test-Retest Reliability Correlations for EBDMS Items and
Convergent Validity Correlations Between EBDMS Items and the Tett Intuition vs. Reason
Scale*

Item	Pearson Correlation	
	Reliability	Validity
1. Listen to my heart rather than my brain.	.47**	.36**
2. Plan my life based on how I feel.	.27**	.16
3. Base my goals in life on inspiration rather than logic.	.36**	.39**
4. Listen to my feelings when making important life decisions.	.38**	.27**
5. Believe emotions give direction to life.	.43**	.42**
6. Listen to my brain rather than my heart.	.42**	.42**
7. Rarely consider my feelings when making a decision.	.36**	.33**
8. Plan my life logically.	.49**	.25**
9. Believe important decisions should be based on logic.	.41**	.39**
10. Make decisions based on facts, not feelings.	.45**	.41**

** $p < .01$.