

The Factor Structure of Tett's Self-Report Questionnaire of Emotional Intelligence
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ABSTRACT

Tett and his associates (Tett, Wang, Gribler, & Martinez, 1997) created a self-report measure of Emotional Intelligence, called the Self-Report Questionnaire (SRQ). This measure was based upon Salovey and Mayer's (1990) model. They defined Emotional Intelligence as the ability to "understand and express [your] own emotions, recognize emotions in others, regulate affect, and use moods and emotions to motivate adaptive behaviors" (p. 200). The SRQ was carefully constructed to produce scales that have high internal consistency and discriminant validity, that are balanced for positively- and negatively-keyed items, and that are only minimally influenced by socially-desirable responding. The purpose of the current research was to examine the factor structure of this measure, compare the obtained factors to the original 12 subscales, and suggest revisions to the questionnaire.

This study included 416 psychology students. Item-level data was subjected to a principal components analysis with oblique rotation. Twelve factors were extracted. Four of the scales did not re-emerge during this factor analysis. One scale was divided between two different factors. Another scale had only four items that were salient. Finally, two of the scales combined on a single factor. Thus, it appears that the SRQ has poor factorial validity. Suggestions for modifications to the scale are given.

INTRODUCTION

Peter Salovey and John Mayer (1990) described Emotional Intelligence as follows: “People who have developed skills related to Emotional Intelligence understand and express their own emotions, recognize emotions in others, regulate affect, and use moods and emotions to motivate adaptive behaviors” (Salovey & Mayer, 1990, p. 200). They went on to describe ten areas of Emotional Intelligence, and to arrange them into a comprehensive model (see Figure 1). Robert Tett and his associates (Tett, Wang, Gribler, & Martinez, 1997; Tett, Wang, & Fox, 2003) designed a self-report measure of Emotional Intelligence based on the ten areas of Salovey and Mayer’s model (1990). This measure is called the Self-Report Questionnaire (SRQ). The purpose of this paper is to examine the factorial validity of this measure with respect to this model.

Salovey and Mayer’s 1990 Model

Salovey and Mayer (1990) divided Emotional Intelligence into three major sections: appraisal and expression of emotion, regulation of emotion, and utilization of emotion. Within each of these areas, further divisions were made. We will examine each of these three major areas in turn.

Appraisal and expression of emotion includes the ability to express one’s own emotions verbally and non-verbally, the ability to identify emotions based on the non-verbal behaviors of others, and empathy (comprehending emotions in others and associating these emotions with one’s own prior experiences).

Regulation of emotion is comprised of two abilities. First, it includes the ability to regulate or manage emotion in the self. Second, it includes the ability to regulate emotion in others.

Utilization of emotion includes four ways that emotions could be used to facilitate better problem-solving: These are flexible planning, creative thinking, mood-redirection, and motivating emotions. Flexible planning is the ability to look at the positive and negative outcomes in decision-making. Creative thinking can be facilitated by certain emotional states, which may alter the organization and use of information in memory. Mood-redirection is the tendency, when experiencing powerful and often negative emotions, to focus on the information they provide about the self and one’s goals. Finally, emotions can motivate someone to pursue their goals.

Development of SRQ

Tett et al. (1997) designed the SRQ to measure the ten areas described in the Salovey and Mayer (1990) model. In addition, Tett, et al. included subscales to measure two additional areas. The first of these, delay of gratification, was included in Daniel Goleman’s (1995) book on Emotional Intelligence. Goleman defined delay of gratification as “the ability to deny impulse in the presence of a goal” (1995, p. 83). The second of these, emotional appropriateness, was defined by Tett et al. (1997) as the tendency to have emotionally appropriate response to a situation.

The SRQ was carefully designed. Factor analyses and item analyses were used to develop maximally distinct subscales with acceptable levels of reliability and validity, and at most only small relationships with socially desirable responding (Tett et al, 1997). Initial research indicates that the SRQ is reliable and valid (Tett et al, 1997 ; Tett et al, 2003). Coefficient alphas for the subscales are high, ranging from .74 to .87. Correlations between the subscales and the Jackson Personality Inventory-Revised demonstrate acceptable levels of convergent and discriminant validity. Therefore, additional research to refine this scale seems warranted.

The purpose of this research is to complete an item-level factor analysis of the SRQ to determine if the subscales match the original Salovey and Mayer (1990) model and if they need revision.

METHOD

Participants

A total of 416 undergraduate students (133 male, 283 female) from the University of Nevada, Las Vegas participated in this study in return for course credit. The mean age was 20.51 (S.D. = 4.95). The ethnic composition of the study was 61.3% Caucasian, 11.8% Asian, 10.6% Hispanic, 9.1% African American, 0.5% Native American, and 6.5% Other.

Measure

Tett's Self-Report Questionnaire (SRQ) was designed to measure twelve aspects of Emotional Intelligence. A 6-item Likert rating scale is utilized. Responses range from 1 "Strongly Disagree" to 6 "Strongly Agree". It has 146 items on 12 subscales. Ten of the subscales were based upon Salovey and Mayer's (1990) model: Recognition of Emotion in the Self; Non-Verbal Emotional Expression; Recognition of Emotion in Others; Empathy; Regulation of Emotion in the Self; Regulation of Emotion in Others; Intuition vs. Reason (Flexible Planning); Creativity; Mood Redirected Attention; and Motivating Emotions. In addition, two additional subscales were included: Delayed Gratification and Emotional Appropriateness.

Procedures

The SRQ was administered along with several other measures. The overall study was divided into two one-and-a-half hour testing sessions, held one week apart. The SRQ was completed during the second testing session. Sessions were supervised by trained test-administrators.

Statistical Analysis

An item-level principle component analysis with an oblique rotation was used to extract twelve factors. Several rotations were examined and the Direct Oblimin rotation with $\delta = 0$ was selected as the one coming closest to the ideal of simple structure. The items associated with each of the resulting factors were then examined, to determine their relation to the original twelve subscales of the SRQ.

RESULTS

Eight of the twelve SRQ subscales were clearly visible in the factor analysis results (see Table 1 for the primary factor pattern matrix and see Table 2 for the matrix of factor intercorrelations). For seven of these subscales, most or all of the items were associated with separate factors. These subscales were: Regulation of Emotion in the Self, Verbal; Empathy; Recognition of Emotion in the Self; Flexible Planning; Motivating Emotions; Mood Redirected Attention; and Non-Verbal Emotional Expression. These seven factors were named after the subscales they appeared to reflect. One additional subscale, Emotional Appropriateness, was partially recovered in the factor analysis. Many of the subscale items were associated with one factor, but the other items from this subscale did not have salient loadings on any factor. Thus, this factor was given the same the name as the subscale, but we do not consider that the subscale was recovered very well in the factor analysis.

Four of the subscales performed poorly in the factor analysis. Items from the Recognition Emotion in Others-Nonverbal and Regulation of Emotion in Others scales were associated with the same factor. Both of these subscales are related to emotions in other people, and therefore we labeled this factor Social Skills.

Items from the Creativity subscale fell on two different factors. The items associated with the first factor appeared to be related to conventionality and that factor was entitled Conventionality. Items on the second factor seemed to be more related to the model's conceptualization of creativity, and the factor was therefore entitled Creativity.

The last problematic subscale was Delay of Gratification. The definition of Delayed Gratification as used by Tett et al. (1997) involved being able to forgo immediate rewards in lieu of achieving a long-term goal. However, the only items from this subscale that fell together on one factor were those items that dealt with money. Therefore, this factor was entitled Miserliness. The other items did not have salient factor pattern matrix coefficients for any of the factors, with the exception of one item that loaded on the Social Skills factor.

DISCUSSION

The purpose of this study was to examine the factorial validity of the Self Report Questionnaire (SRQ). Eight of the subscales were fully or partially recovered in the item-level factor analysis, but four of the subscales were not. These latter subscales either combined to form a single factor, broke into two factors, or had items that covered only a small portion of the intended concept. It therefore appears that the SRQ has poor factorial validity. Revisions to the SRQ appear to be needed. In revising the SRQ, two strategies could be taken. First, the subscales could be revised to better reflect the Salovey and Mayer (1990) model. Alternatively, the subscales could be revised to reflect Salovey and Mayer's latest model of Emotional Intelligence, which was described in Mayer and Salovey (1997).

Mayer and Salovey's 1997 Model

In 1997, Mayer and Salovey presented revisions to their model of Emotional Intelligence. They indicated that their original model and definition "seemed vague in places and impoverished in the sense that they talk only about perceiving and regulating emotion, and omit thinking about feelings" (Mayer & Salovey, 1997, p. 10). Therefore, in 1997, Mayer and Salovey proposed a new definition and model of Emotional Intelligence. This new model has four branches: 1) regulating emotions to promote emotional and intellectual growth; 2) understanding and analyzing emotions; 3) using emotions to facilitate thinking, and 4) perception, appraisal, and expression of emotion. Within each branch, Mayer and Salovey describe four abilities (Mayer & Salovey, 1997).

The Relation of the Current Findings to the Mayer and Salovey (1997) Model

The comparison between the current findings and the 1997 model is illustrated in Table 3. The 1997 model is narrower than the 1990 model because it focuses exclusively on cognitive abilities related to emotions. Because of this, four subscales that were included in the SRQ do not correspond to any part of the 1997 model: Creativity, Motivating Emotions, Emotional Appropriateness, and Delay of Gratification. Furthermore, in the current study, three of these subscales were not fully recovered in the item-level factor analysis. We therefore recommend that these four subscales be removed from the next revision of the SRQ.

Several new subscales are needed to measure a new construct in the 1997 model: the ability to understand emotions abstractly. Content to measure the Understanding Branch should reflect abilities such as the following: labeling emotions, understanding the meanings of emotion words, understanding complex feelings, and understanding how emotions change over time.

Finally, the 1997 model continues to distinguish between the ability to recognize emotions in others (which falls in the Perceiving branch) and the ability to regulate others' emotions (which falls in the Regulation branch). However, in our analysis, these two subscales were associated with the same factor. Therefore, the next revision of the SRQ should attempt to further distinguish between the item content of these two subscales.

In summary, this research has demonstrated that there is a poor match between the factor structure of Tett's Self-Report Questionnaire of Emotional Intelligence and the current Mayer, Salovey, and Caruso (1997) model of Emotional Intelligence. Some subscales (and factors) do not correspond to any part of the 1997 model, some aspects of the 1997 model are not reflected in any of the subscales (and factors), and some subscales

need revision to provide separate measurement of the different branches of the 1997 model. Revisions to the SRQ therefore seem necessary. Given the quality of the initial scale development efforts, we are confident that the next revision of the SRQ will further improve this promising measure.

Table 3

Factors compared to Mayer & Salovey (1997) Model of Emotional Intelligence

Branch	SRQ Subscale ¹	Factor
Regulation	Regulation of emotion in self Regulation of emotion in others	Regulation of emotion in self Social Skills
Understanding and Analyzing		
Facilitated Thinking	Mood Redirected Attention Flexible Planning	Mood Redirected Attention Flexible Planning
Perception, Appraisal, and Expression	Recognition of Emotion in the Self Recognition of Emotion in Others Non-Verbal Emotional Expression Empathy	Recognition of Emotion in the Self Social Skills Non-Verbal Emotional Expression Empathy
Not in the 1997 Model	Creativity Motivating Emotions Emotional Appropriateness Delay of Gratification	Conventionality Creativity Motivating Emotions Emotional Appropriateness Miserliness

Figure 1

Salovey and Mayer (1990) Model of Emotional Intelligence

Appraisal and Expression of Emotion	Self	Verbal
		Non-Verbal
	Other	Non-Verbal
		Perception
	Empathy	
Regulation of Emotion	In Self	
	In Other	
Utilization of Emotion	Flexible Planning	
	Creative Thinking	
	Redirected Attention	
	Motivating Emotions	