

ASSESSING EMOTIONAL INTELLIGENCE: A LITERATURE REVIEW

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ABSTRACT

The purpose of the literature review is to examine the empirical evidence associated with emotional intelligence (EI) measurement. A search of the periodical database PsychINFO and a Google Internet search produced studies associated with ability model, mixed model, and trait model approaches to assessment. The key search term 'assessing emotional intelligence' was not limited by date of publication. The emotional intelligence tests selected for review include the Bar-On Emotional Quotient Inventory, Emotional & Social Competence Inventory, Emotional & Social Competence Inventory – University Edition, Genos Emotional Intelligence Inventory, Group Emotional Competency Inventory, Mayer-Salovey-Caruso EI Test, Schutte Self-Report Emotional Intelligence Scale, Trait Emotional Intelligence Questionnaire, Work Group Emotional Intelligence Profile, and Wong and Law Emotional Intelligence Scale. Emotional intelligence testing is applicable to both business and academic related performance to measure leadership ability and assess behavior. Theory links high emotional intelligence to enhanced performance, better outcomes, and improved mental status. Criticism of emotional intelligence testing is linked to consensus-based assessment and self-report measures. The complex constructs of emotional intelligence require a multifaceted approach of more than one measure and consideration of personality measures.

Keywords: *assessing emotional intelligence*

Assessing Emotional Intelligence

The purpose of this literature review is to consider the empirical evidence associated with the various tests measuring emotional intelligence (EI). A literature search was conducted of the PsychINFO periodical database and a Google Internet search using the key search term 'assessing emotional intelligence' to retrieve data not limited by time of publication. For the purpose of this review, the selected tests include the Bar-On Emotional Quotient Inventory, Emotional & Social Competence Inventory, Emotional & Social Competence Inventory – University Edition, Genos Emotional Intelligence Inventory, Group Emotional Competency Inventory, Mayer-Salovey-Caruso EI Test, Schutte Self-Report Emotional Intelligence Scale, Trait Emotional Intelligence Questionnaire, Work Group Emotional Intelligence Profile, and Wong and Law Emotional Intelligence Scale.

BarOn Emotional Quotient Inventory (BarOn EQ-i)

Ekermans, Saklofske, Austin, and Stough (2011) examined the measurement invariance of the Bar-On EQ-i 133-item self-report inventory in two general workplace samples (350 Australians and 356 South Africans) and two university student samples (350 Canadians and 238 Scots). Although the Bar-On EQ-i is widely used and translated into 29 languages, scant research supports the validity of the factorial structure. The student sample was more homogenous than the workplace sample ruling out sample-specific differences. The Bar-On EQ-i used in the study measured emotional intelligence on five subscales (Intrapersonal, Interpersonal, Adaptability, Stress Management, and General Mood) with a five-point Likert in English only. Cronbach's alpha estimated internal consistency and a two-way analysis of variance (ANOVA) detected item bias. Internal consistency results aligned with previous research and supported reliability in other cultural constructs. Method bias and response bias were not observed in the data. Ekermans et al. (2011) reported the following limitations of the study to include the cultural distance of the two samples, similar linguistic backgrounds, and lack of gender stratification among the workplace samples.

Palmer, Manocha, Gignac, and Stough (2003) conducted a study to examine the Bar-On EQ-i factor analytic methodology using exploratory factor analyses. The 377 participants (103 males, 270 females, 4 unreported) ranged in age from 15 to 79 with a mean age of 39.44 years. Despite a disproportionate number of females, the age, ethnicity, and education of the sample is representative of the population. Researchers hypothesized significant differences in emotional intelligence results related to age and gender. Findings revealed a positive correlation between age and emotional intelligence and gender and emotional intelligence, however small in magnitude. Palmer et al. (2003) reported the most important finding of the study supports the use of Bar-On EQ-i in clinical practice as a general index for psycho-diagnostic assessment.

Dawda and Hart (2000) conducted a study in 1997 to evaluate the reliability and validity of the Bar-On EQ-i in examining the relationship between emotion and personality. The sample consisted of 243 university students composed of 118 males and 125 females, aged 17 to 47 years old. The study utilized posters as a recruitment tool and offered either course credit or a stipend for participation. Only English as a first language subjects brought up in North America participated to control culturally different emotional expression. The questionnaire consists of a 133 item self-report inventory scored on a five-point scale. Research supports the validity, internal consistency, and test-retest reliability of the Bar-On EQ-i. Visual inspection of the questionnaires produced a substantially low omission rate. Both Positive Impression Index and extreme item endorsement were positively correlated with EQ-i scores. Internal consistency was excellent as assessed by Cronbach's alpha.

Exhibiting good structural properties, the Bar-On EQ-i draws upon a wide range of emotional constructs. Study limitations include the lack of correlation between the interpersonal scale and other composite scales. Dawda and Hart (2000) suggested future research include a multi-method approach, establishing a

clear relationship between emotional intelligence and other constructs, and clearly defining the decision-making validity of emotional intelligence.

Emotional & Social Competence Inventory (ECSI)

Boyatzis (n.d.) reported on the findings of a pilot study with 116 participants (79 Americans and 37 British) and 1022 raters (810 Americans and 212 British) to revise the Emotional Competence Inventory to include social and emotional intelligence competencies. Raters completed the pilot ECSI and provided feedback on the whole instrument and individual questions. The pilot study contained eight items per competency as opposed to six items per competency in the final ECSI, which allowed for choosing the top six items, eliminating the inferior items, and maintaining one reverse-scored item per competency. Statistical analysis of the pilot study achieved the psychometric standards necessary to reaffirm a focus on the relationship between behaviors that are observed, recognized, and distinct. Boyatzis (n.d.) stated the statistical rigor of ECSI is critical for further studies and tracking of feedback data.

Emotional & Social Competence Inventory – University Edition (ECSI-U)

Oaklands College (2010) in Hertfordshire, United Kingdom presented a case study for a one-year project to turn students into expert learners by increasing the number of level three learners through achieving a distinction grade in 16-18 programs. The project aim was to promote staff and student development through cooperative teaching and learning strategies. The ECSI-U is widely used in universities to foster self-awareness, self-management, relationship management, and social awareness necessary for personal growth and independent learning. Participants included a representative sample of 35 students. The project consisted of three staff/student sessions. Session one focused on EI self-assessment (using ECSI-U), learning reflection (using Boyatzis' model of intentional change), and assistance in formulating an individual action plan. In session two, staff and students collaborated on teaching/learning strategies and course modifications. Session three included a follow-up EI self-assessment, feedback exchange and information sharing about improvements, and how the ECSI-U workbook contributed to the development process. At the end of the project, the group of students using the ECSI-U improved from pass/merit to merit/distinction. Oaklands College (2010) asserted the use of ECSI-U provided equal opportunity for all students despite achievement level to develop awareness of and capacity for improvement in personal, social, and learner skills.

Genos Emotional Intelligence Inventory (Genos EI)

Palmer, Stough, Harmer, and Gignac (2009) stated the Genos EI 70-item multirater assessment was designed for use in the workplace as a learning and development tool by human resources and occupational psychologists. The Genos EI, which was formulated from a factor analytic study, measures 70 EI behaviors and is widely used in both research and commercial applications as a tool for employee selection and learning and development programs. Three benefits of the Genos EI are a simple seven-factor model, high workplace validity, and ability to

predict typical workplace EI per individual. Proven internal consistency reliability has been demonstrated with large samples and diverse populations. Support for factorial validity is based on competing factor analytic models derived from a sample of 4775 self-reports and 6848 rater reports. Research derived from empirical investigation supports concurrent validity. Palmer et al. (2009) suggested future research examine a shift in performance measurement that is process oriented rather than outcome oriented and a multi-measurement approach to determining EI rather than a single inventory.

Group Emotional Competency Inventory (GEC)

According to Emmerling (2015), Vanessa Druskat and Steven Wolff developed the GEC. The GEC is aimed at developing emotional competence at the group level through establishing group norms, which are effective in facilitating positive engagements, behaviors, and processes. The GEC contains 57 items, which measure nine dimensions of group EI. Feedback from 150 teams on nine group norms illustrates team effectiveness through identification of strengths, weaknesses, and improvements. Emmerling (2015) noted studies supporting reliability and validity.

Druskat and Wolff (2001) reported three critical components of group effectiveness are trust among group members, an awareness of group identity, and a feeling of group efficacy. Teams function at three levels of interaction: team to individual, team to team, and team to outside entities. The norms that create EI are classified as individual, group, and cross-boundary. Druskat and Wolff (2001) suggested the GEC aids in identifying group norms that enhance EI, cooperation, collaboration, and performance.

Mayer-Salovey-Caruso EI Test (MSCEIT)

Brannick, Wahl, and Goldin (2011) reported on a sample of 183 first- and second-year medical students from a southeastern United States university administered a web delivered MSCEIT. The sample consisted of 75 males and 108 females with a mean age of 23.7 years. The ethnic composition consisted of 28 Asians, 7 Blacks, 19 Hispanics, and 112 Whites (17 unreported). Participation was voluntary and the sample was divided into two groups. Group one received lunch. Group two received a feedback session. Scoring was based on the general reference group and two sets of confirmatory factor analysis (CFA). Only faces and pictures scored acceptable for internal consistency reliability. Factor analysis did not support the MSCEIT factor structure. Brannick et al. (2011) suggested the medical student sample is a highly selective, atypical population that could contribute to the overall results.

Karim and Weisz (2010) conducted a study to test the rigor of the MSCEIT in a cross-cultural context. The aim of the study focused on the psychometric properties of the MSCEIT through a comparison of two groups: a collectivist Pakistani, Eastern culture and an individualist French, Western culture. The participants consisted of 192 graduate university students from two nonnative English-speaking cultures with an average age of 29.46 years. The sample from France consisted of 111 students (49 males and 62 females). The sample from

Pakistan consisted of 81 students (52 males and 29 females). The students (fluent in English) were recruited from management sciences programs that were administered in English and received class credit for participating. The study was tasked with five objectives. First, provide evidence of factorial invariant and discriminant and incremental validity. Results indicated a bias to individualistic cultures. Second, determine if the MSCEIT measures the same construct in both cultures. Results confirmed the same interpretation ability across both countries and cultures. Third, assess discriminant validity. Results revealed problems validating measures using the different methods of ability and self-report. Fourth, assess incremental validity. Results indicated a problem with understanding subjective wellbeing. Fifth, formulate an overall view of gender differences. Results supported previous research that women score higher on emotion-related abilities. Karim and Weisz (2010) noted the following study limitations: using students limits external validity and administering the test in English limits emotional terminology.

Brackett and Salovey (2006) provided a manuscript examining the scoring method, psychometric properties, reliability, and factor structure of the MSCEIT. The MSCEIT is an objective test utilizing consensus and expert scoring, which highly correlate with external criteria. The MSCEIT is reliable at the full scale and four-branch levels with a congruent factor structure at the four-branch level. The MSCEIT reports a full test half split reliability for consensus scoring of .93 and expert scoring of .91. The full-test MSCEIT scored $r(59) = .86$ in test-retest reliability over a three-week period with a college student sample. The MSCEIT factor structure produced good results with both consensus and expert scoring methods for goodness-of-fit indices. Brackett and Salovey (2006) contended the MSCEIT is a reliable measure of EI, exhibits structure and content validity, is incrementally valid for predicting outcomes, and displays discriminant validity with respect to cognitive ability and personality traits.

Schutte Self-Report Emotional Intelligence Scale (SSREI)

Gignac, Palmer, Manocha, and Stough (2005) conducted a confirmatory factor analysis (CFA) to support the four-factor (Optimism, Social Skills, Emotional Regulation, and Utilization of Emotions) model of the SSREI. The instrument is comprised of 33 items, which are five-point Likert scaled. The sample totaled 367 (107 males, 257 females, 3 unreported) aged 15 to 78 from Australia (Victoria and New South Wales) recruited through advertisement. Gignac et al. (2005) reported self-report models, like the SSREI, have certain advantages and disadvantages over ability-based models. The advantages include scoring, reliability, and emphasis on performance. Disadvantages include an influence to socially desirable responses, which could be remedied by improving validity.

Austin, Saklofske, Huang, and McKenney (2004) conducted a study on a revised version of the SSREI to investigate forward-keyed items, factor structure, and the psychometric properties of reversing select items and adding new ones. The participants included 500 Canadian undergraduate university students (329 males, 169 female, 2 unspecified) with a mean age of 22.8 years. The revised version of the SSREI used in the study consisted of 41 items with 20 forward-keyed

items and 21 reverse-keyed items. Internal validity of the revised 41-item version reported similar to the original 33-item version. Inconsistencies in the factor structure of the 41-item version and the 33-item version cannot be explained by item reversal and warrant further investigation. Austin et al. (2004) reported no real advantage of the revised 41-item version over original 33-item version.

Trait Emotional Intelligence Questionnaire (TEIQue)

Andrei, Mancini, Baldaro, Trombini, and Agnoli (2014) evaluated 77 peer-reviewed articles using TEIQue in adults, adolescents, and children samples with cross sectional designs and convenience samples on European participants. The TEIQue is the main EI instrument covering the samples comprehensively. The TEIQue is used to predict an array of health related and social conditions. The review surmised that higher trait EI has a higher sensitivity to affective cues and negative stimuli. In respect to children and adolescents, EI prevails when demands overshadow resources. The authors concluded that TEIQue is effective for evaluating affective differences. Andrei et al. (2014) suggested future research address the relationship between EI and emotional ability and also affect and cognitive conducts.

Cooper and Petrides (2010) conducted two studies to examine the psychometric properties of the self-report TEIQue utilizing item response theory (IRT). Study one consisted of 1119 participants recruited from universities and the community through word of mouth and advertising. The highly educated sample contained 455 males and 653 females (11 unreported) aged 15 to 89 with a mean age of 32.18 years. Study two consisted of 866 participants recruited under similar circumstances as study one participants. The highly educated sample contained 432 males and 416 females (18 unreported) aged 17 to 80 with a mean age of 26.97 years. Results from the two studies support good psychometric studies for TEIQue and precise measurement across latent trait range. Cooper and Petrides (2010) suggested TEIQue for rapid assessment of EI trait differences and recommended reducing the number of response options because the specificity of responses does not match the ability of participants but not at the expense of validity.

Freudenthaler, Neubauer, Gabler, Scherl, and Rindermann (2008) conducted a study of German-speaking undergraduates to test the robustness, reliability, and validity of TEIQue. The pilot sample consisted of 352 participants (119 males and 233 females) ranging in age from 18 to 44 years. The study concluded the TEIQue is a valid and reliable comprehensive measure of trait EI. Freudenthaler et al. (2008) noted the internal consistencies and four-factor structure were the same as the original TEIQue and other translations.

Work Group Emotional Intelligence Profile (WEIP)

Jordan and Lawrence (2009) conducted three studies to develop a short form of the WEIP consisting of 16 items. Study one consisted of 620 volunteer employees recruited via the internal mail system to participate in a 25-item self-report survey taken from the original 30-item WEIP. A representative sample consisted of 299 males and 321 females ranging in age from 18 to 66 with a mean

age of 40 years. Study two consisted of 217 workers from a wide variety of industries recruited via advertisement that volunteered for a national web survey. The convenience sample consisted of 63 males and 154 females ranging in age from 20 to 65 with a mean age of 36 years. Study three consisted of 560 employees belonging to the same organization as study one, but not part of study one. Volunteers were recruited via normal mail distribution. The surveys were completed at three different times, four months apart. Time one had 325 participants, time two had 263 participants, and time three had 227 participants. Ninety-nine usable surveys from all three time frames consisted of 58 males and 41 females ranging in age from 18 to 62 with a mean age of 40 years. To assure construct validity, study two used model replication analyses and study three used test-retest reliability. Study one demonstrated a good model fit for representing the four distinct self-reported emotional abilities. Study two also supported the four-factor fit, but with some construct empirical overlap. Study three demonstrated test-retest reliability for the four constructs. Internal consistency reliability was high to moderate for all three studies. Jordan and Lawrence (2009) noted the following limitations: reliance on self-report and use of a convenience sample in study two.

Wong and Law Emotional Intelligence Scale (WLEIS)

Libbrecht, De Beuckelaer, Lievens, and Rockstuhl (2014) conducted a study to test the measurement invariance (MI) of WLEIS scores of graduate students from Singapore and Belgium. The WLEIS measures trait EI via a 16-item self-report utilizing a five-point Likert scale. The Singapore sample consisted of 505 students (48.5% male and 51.5% female) with a mean age of 22.0 years. The Singapore participants, fluent in English, completed the original version of the WLEIS. The Belgium sample consisted of 339 students (38.9% male and 61.1% female) with a mean age of 22.7 years. The Belgium participants completed the original version of the WLEIS translated into Dutch/Flemish. Results supported form invariance with only partial support for the scalar invariant model. Libbrecht et al. (2014) suggested future research for improving EI questionnaires focus on a strong theory foundation and improved model fit for the country of use.

Li, Saklofske, Bowden, Yan, and Fung (2012) conducted a study with three Chinese university student groups to test the metric invariance of the WLEIS. The objective was to test the cultural and linguistic effects on participants from Canada and China with English and Chinese versions. The first sample of students was from Beijing and consisted of 680 participants (239 males, 435 females, 6 unidentified) with a mean age of 20.85 years. The second and third samples were from Calgary and were fluent in English. The second group consisted of 151 participants (71 males and 80 females) with a mean age of 23.03 years. The third group consisted of 151 participants (72 males and 79 females) with a mean age of 20.37 years. The first and second groups completed the WLEIS in Mandarin and the third group in English. Li et al. (2012) reported that results confirmed the use of the WLEIS performed equally among all three groups in both languages with operational support for the four-factor model.

CONCLUSION

The concept of emotional intelligence emerged in the mid-1980s. Three main models categorize emotional intelligence measurement: ability model (e.g. MSCEIT), mixed model (e.g. ECSI and ECSI-U), and trait model (TEIQue). Emotional intelligence testing is utilized for academic, business, leadership, and behavior assessment purposes. High emotional intelligence is theoretically linked to improved mental health, learning outcomes, work performance, and leadership skills. Criticism of emotional intelligence surrounds reliance on consensus-based assessment and self-report measures. What is evident in such a newly emerging field with diverse measurement options is the need for additional empirical evidence of the theoretical constructs of emotional intelligence based on continuing research.

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