Introducing the Developing Emotional Competency Questionnaire ®:

An Emotional Intelligence Measure for Organizational Consultation

Abstract

This paper introduces the Developing Emotional Competency Questionnaire® (DECQ), a measure of Emotional Intelligence (EI) designed to support EI development within organizational consultations. Strategically, our approach demonstrates how to balance psychometric concerns with practical utility aims in applied research. Supporting its content validity, the DECQ® structure and interpretation is based on Goleman's (1995) EI competency model, and experience in organizational consultation suggests that using these 25 characteristics might be best for communication and instruction. We espouse the view coaching and communication must be straightforward, specific, and understandable to ensure effectiveness. Archival, de-identified data from 1096 clients undergoing organizational consultations were used to maximize ecological, validity and generalizability. Psychometric evidence and descriptive data relevant to internal consistency reliability, factorial validity, interpretive structure, and normative foundation are presented. Confirmatory Factor Analysis findings suggest that the 25-factor model would be most likely to provide the best fit when compared to the single factor, 2-factor, and 5-factor models. Overall, the findings support the reliability of all scales. Relevant to validity a comparison between self-report and third-party reports about EI of the corporation or organization revealed, as expected, that clients rated themselves more highly than the organization at large. Although additional research is needed, results support the use of the DECQ® as a tool in identifying self-perceived EI strengths and weaknesses as a way to target interventions. Balancing technical, psychometric concerns with applied utility concerns leads to

the conclusion that the 25-characteristic model should be the focal model for the DECQ® applications.

Introduction

The *Developing Emotional Competency Questionnaire*® (*DECQ®;*Wilke, Wilke, & Viglione, 2018) was designed as a tool to measure Emotional Intelligence (EI) and its subcomponents. As the name suggests, its goal is a practical one, to support intervention to develop EI in organizations and the workplace. By identifying EI strengths and weaknesses accurately, a psychometrically sound DECQ® could guide the mentoring and consultation with the human talent and their teams so as to improve organizational well-being, productivity, and profitability.

EI & Workplace Productivity

Researchers have suggested that, relative to general intelligence, EI is a better way to conceptualize and predict an individual's performance within the workplace (Bar-On, 1998; Caruso & Salovey, 2004; Goleman, 1997). Every individual has unique personality characteristics and interpersonal skills and in most organizations, individuals interact with others multiple times throughout the day. These interactions may be limited to simple greetings or electronic communication but could be as complex as working in a team on a project. EI research has suggested that the more dysfunction within these interactions, the less productivity within the workplace. Druss, Schlesinger and Allen (2001) completed a study with over 6,200 employees of several major companies that focused on the negative impact that can occur in productivity. They found that team performance in the workplace significantly decreased when an employee was emotionally depressed. Employees who presented significant emotional problems during this study disrupted the productivity of their workplace.

In a complementary study, Barsade (2002) described a "ripple effect" of a positive personality in the workplace, in which a team member who had a positive outlook and

motivation influences other team members to share their emotional state. This positive emotional contagion spread throughout the company and increased productivity. The ability to accurately measure an individual's EI would be greatly beneficial to many businesses and organizations because this information would allow them to identify which employees could benefit from extra training (Caruso & Salovey, 2004; Cherniss & Goleman, 2001;Goleman, 2002; Joseph & Newman, 2010; Newman, Joseph, & MacCann, 2010).

Many studies have shown that delays and waste in occupational situations are related to human factors. These delays and waste range from employees being distracted from working to mismanagement of personnel by project managers. In a report completed by the Standish Group (2009), the most significant causes of project failure in the United States were a lack of goals and a lack of involvement by managers who were in charge of the projects. The ability of project managers and executives in companies to create a cohesive team with their employees can dramatically improve the performance of that team (Goleman, 1997). Most of the time that managers and leaders spend working on projects involves interactions with other people. A study completed by Kerzner (2004) found that in the most complex projects in companies, leaders spent as much as 90% of their time on interpersonal communication. Therefore, the better a manager or leader is in perceiving, understanding, and effectively managing the emotional behaviors of themselves and others, the more likely they are to be successful in their endeavors and have greater productivity (Bar-On 1998; Gardner, 1983; Goleman 1995).

The purpose of this paper is to describe the creation and development of the DECQ® and to investigate the psychometric support relevant to the DECQ®'s reliability, validity, factor structure, and normative reference groups. In turn, this psychometric foundation provides support for the application of the DECQ® in the workplace. Because the DECQ® is meant to be an

organizational, intervention tool, balancing scientific and applied aims is important (Leonard, 2017). As in any instructional or coaching endeavor, the concepts, procedures, or behaviors being communicated have to be specific, well-defined, anchored. Indeed, when sharing test results with clients, the mathematical and conceptual rationale for the results should be straightforward, and the specific EI intervention target must be clear and understandable so as to maximize motivation and self-efficacy. Thus, we agree with Ackley, who wrote in a recent review (2016) on EI practical issues and training applications that consultants must speak to "clients about EI in plain language" (p. 270). It is easier for organizational clients to understand (a) intervention goals defined concretely and specifically by four DECQ items than (b) high level, intellectualized abstractions defined by, for example, 20 items. In terms of communicability and utility, more factors with fewer items might be favored or fewer factors with more items within organizational intervention.

Emotional Intelligence and the DECQ®

The concept of EI was brought to the forefront of popular culture by Daniel Goleman's book Emotional Intelligence (1995). Again, according to Ackley (2016), "Goleman, though he gets criticized by some psychologists for lack of scientific rigor, wrote about EI in ways that our clients could understand." (p. 270). Goleman (1998) defined EI as "the capacity for recognizing our own feelings and those of others, for motivating ourselves, and for managing emotions well in ourselves and in our relationships" (p. 317). EI is a broadly defined construct that is related to perceiving and understanding emotions in oneself, as well as in others. Mayer and Salovey (1997) stated that the fundamental dimensions of EI include "the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional meanings, and to reflectively regulate emotions so as to promote both better emotion and

thought" (Mayer & Salovey, 1997, p.3).While many constructs of EI include these dimensions, definitions of EI differ broadly among researchers (Matthews, Roberts & Zeidner, 2003).

Beginning in the early 1990's, two central theories of EI have become the most widely used, the Ability Model and the Mixed Model. The Ability Model proposes that individuals vary in their ability to process information of an emotional nature and in their ability to relate emotional processing to a wider cognition. Ability measures follow the model of IQ measures by having individuals participate in a task and then calculating a score based upon their performance. The Mixed Model argues that EI competencies are not innate talents, but rather learned capabilities that must be worked on and developed to achieve outstanding performance (Byrne et al., 2007).

Much of the current research has focused on the measurement of EI. These two theories have different constructs of EI, and therefore the measurements used to test individual EI differentiates as well. The Ability Model, as advocated by Mayer and Salovey, defines EI as an ability much like cognitive intelligence. The Mixed Model, as supported by Bar-On and Goleman, uses a trait concept of EI. This main difference between the two models has created some confusion in the field about what the real construct of EI is, as well as generated criticism for how each model measures EI. However, research has continued to show support for both models regardless of their theoretical differences of emotional intelligence (Caruso & Salovey, 2004; Joseph & Newman, 2010; Conte, 2005).

Ability Model. As mentioned before, the Ability Model contends that emotional intelligence is an ability, much like cognitive intelligence, but it involves utilizing emotions to develop and sustain interpersonal relationships (Cartwright & Pappas, 2008). The most popular conceptualization of the Ability Model of EI was offered by Salovey & Mayer (1990). They

defined Emotional Intelligence as an intellectual capability for understanding emotions (Sahar-Khiz, 2011). Their ideas on EI derive from intelligence theory that EI uses higher functioning cognitive abilities to perceive, understand and manage emotional encounters (Mayer et al., 2001). Mayer's and Salovey's first conceptualization of EI consisted of three skills: the ability to recognize and express emotion, the ability to then communicate and control the emotions an individual was feeling, and the ability to use emotion to impact emotional situations. This initial definition of EI by Mayer and Salovey was later updated to include a fourth concept, thinking about feelings (Mayer, Salovey, & Caruso, 2002). They felt that including this concept was necessary because the use of cognition to control feelings and emotions was an essential component to EI.

Mayer and Salovey's (1997) final definition of EI stated that the fundamental dimensions of EI include "the ability to perceive emotions, to access and generate emotions so as to assist thought, to understand emotions and emotional meanings, and to reflectively regulate emotions so as to promote both better emotion and thought" (p.3). They proposed that EI comprised four main branches: perceiving emotions, using emotions, understanding emotions, and managing emotions. Perceiving emotions refers to how well an individual is able to recognize their own and others' emotional states. The using emotions branch focuses on an individual's ability to regulate the thoughts that emotions or emotional situations may generate. The third branch of understanding emotions measures how well an individual does at comprehending his or her own emotional state as well as those of others. The fourth and final branch of managing emotions refers to the ability of an individual to express emotions and understand the emotions of others so as to communicate better during interpersonal situations (Neubauer & Freudenthaler, 2005; Salovey & Grewel, 2005; Salovey & Mayer1990). This would include being able to identify

certain emotional situations and react in a way that leads to a positive outcome rather than a negative one.

Mixed Model. The Mixed Model conceptualization of EI is different and more diverse than the Ability Model. Mixed Model theorists define EI in terms of personality traits and social behaviors as the fundamental dimensions of EI (Boyatzis, Goleman, & Hay Group, 2001). Rather than focusing on the ability of individuals to utilize EI, the Mixed Model focuses on characteristics of EI, such as motivation, well-being, and leadership, as part of a person's disposition. The major difference between these two models is that the Ability Model compares EI to a cognitive ability, where the Mixed Model believes that EI is a composition of character traits that can be improved with training (Sahar-Khiz, 2011). Unlike the Ability Model, where the Mayer and Salovey conceptualization of EI dominates the theory, there are many different conceptualizations of EI within the Mixed Model. Although each theorist using the Mixed Model is uniform in most ways, there are unique differences in the definitions to describe EI in the Mixed Model (Hanna, 2008).

The two most researched conceptualizations of the Mixed Model come from Bar-On (1998) and Goleman (1997). While both are considered to be Mixed Model theories, there are several distinctions between the two approaches. Both use personality and emotional competency as opposed to abilities within their models (Cartwright & Pappas, 2008).

Bar-On's Model. The foundation of Bar-On's model is a belief that emotional intelligence is just as necessary for people to succeed as general intelligence (Bar-On, 1997). Bar-On's theoretical model derives from Darwin's (Darwin, Cummings, Duchenne, & Murray, 1872) work on the importance of emotion and adaption in survival. Bar-On has also been influenced by Thorndike's (Thorndike & Stein, 1937) social intelligence theory (Bar-On, 2005).

These two theoretical orientations are mirrored in Bar-On's focus on emotional adaption and social behaviors. Bar-On (2000) described his view on emotional intelligence as a wide array of traits that relate to the emotional and social functioning of human well-being. In recent years, the social intelligence of human well-being has become more of a focus in his model (Bar-On, 2006).

Bar-On's model defines EI as "an array of noncognitive capabilities, competencies, and skills that influence one's ability to succeed in coping with environmental demands and pressures" (Bar-On, 1997, p. 14). This model comprises five composite skills of EI that Bar-On theorized to be essential for people to emotionally navigate their environments. These include the ability to understand and express oneself, to understand and relate with others, to manage and control emotions, to solve problems that occur in intrapersonal and interpersonal situations, and to generate a positive mood and self-motivation (Hanna, 2008; Bar-On 2006).

Goleman's Model. Daniel Goleman is often cited as being the most responsible for popularizing the field of EI. While his construct of EI is a Mixed Model, Goleman focuses more on emotional traits than the competencies found in the Bar-On model (Goleman 1995). He asserted that these emotional quotient abilities are more impactful on an individual's success than cognitive intelligence (Goleman 1995). These abilities are not just innate, but they can also be learned and improved upon over the course of a lifetime. Goleman also advocated that moral character was an essential aspect of the concept of emotional intelligence. These conclusions by Goleman are part of the reason his model has received so much attention in the media and global business community. Goleman (1998) defined EQ as "the capacity for recognizing our own feelings and those of others, for motivating ourselves, and for managing emotions well in ourselves and in our relationships" (p. 317).

Goleman's first model comprised of 25 emotional and social skills that were grouped into five main hierarchical branches (Goleman, 1995; Boyatzis, Goleman, and Rhee, 1999). These branches were self-awareness, self-regulation, motivation, empathy, and social skills. Goleman has revised his initial theory several times due to criticism about his model. He eliminated several of the skills that were part of his original 25 down to 18 and merged the motivation and the self-regulation branches to create the self-management branch. This revision focused on the personal and social competencies, as well as emotional management competencies that are theorized to be related to EI (Sahar-Khiz, 2011).

The DECQ® structure and theoretical foundation are based on previous conceptual, empirical, and assessment research and scholarship (e.g., Cherniss, Extein, Goleman, & Weissberg, 2006; Cherniss & Goleman, 2001; Goleman, Boyatzis, & McKee, 2002; Joseph & Newman, 2010; Mayer, Caruso & Salovey, 2004; Newman, Joseph, & MacCann, 2010; Wolff, 2005). Although some models in the research literature differ in the number of components and factor structure, the DECQ® retains all 25 characteristics derived from Goleman's (1995) EI competency model. From the conceptualization of this model, one author (SR composed the first set of DECQ® items and worked together with another author DV) to refine them and maximize phrasing that might optimize their psychometric characteristics. Thus, content validity is supported by research-based models in the literature with multiple reviews and refinements of DECQ® to maximize psychometric characteristics.

The DECQ has two main core competencies of Emotional Intelligence: Personal Competency and Social Competency. There are then five factors of the DECQ, with 25 emotional intelligence characteristics underneath them. The five factors included are: Self-Awareness, Self-Motivation, Self-Regulation, Social Awareness, and Social Skills. The 25

emotional intelligence skills are categorized under each of the five factors with Self-Awareness consisting of emotional awareness, accurate self-assessment, and self-confidence. Self-Motivation includes self-control, trustworthiness, conscientiousness, adaptability, and innovativeness. Self-Regulation incorporates achievement drive, commitment, initiative, and optimism. Social Awareness comprises empathy, service orientation, developing others[1], leveraging diversity, and political awareness. Lastly, Social Skills consists of influence, communication, leadership, change catalyst, conflict management, building bonds, collaboration and cooperation, and team capabilities. Each of the 25 emotional intelligence components has four questions that are answered using a Likert scale of 1 to 5.

The development of the DECQ® began in the late 1990's when leadership development was in its infancy. During LEADon's work with leaders, their teams and organizations began like most other leadership development efforts with didactic/Socratic attempts to teach content that allowed the participants to make adjustments necessary for organizational success. What we found was that while most had intention to improve, they did not. The application of the skills taught just were not making it into their own lives, their teams and their organizations. It was at this juncture that we began to see our model of leadership development from our clinical and family system origins (Wilke, Wilke & Viglione, 2017). Simply put, until these leaders removed unidentified barriers, themselves, their teams and their organizations would not improve with content, course work, psychodramatic exercises and river rafting trips.

There was something missing to correct the patterns that our eventual model began to evaluate and identify. At this juncture we saw a need in the workplace to help people improve who were not always psychologically savvy and would do so in a palatable way so individuals,

[1] This can be understood as sensing what others need in order to develop.

their teams and organizations (Corporate Family® as LEADon would call it) could internalize and begin to obtain a second order change needed to better facilitate and accomplish their business plans. We utilized a paper format and archived results in Microsoft Excel in this initial form of the DECQ®. Our purpose was for leaders to be able to self-evaluate, using their intuitive skills of assessment and then for us as clinicians to provide feedback with the data collected. We collected the data in a self-report manner, having each individual also report their perspectives on their teams and organizations to the same questions for all three groups. Eventually we began to pursue the idea of having the DECQ® be an online assessment so that individuals could not only take it from anywhere, but they could also access their own results at any time. We fulfilled this transition from paper/Excel to an online format in 2016.

Current Study

With a large sample of clients in the community to maximize ecological validity, we conducted a confirmatory factor analysis (CFA) of the DECQ®. Balancing statistical and applied aims, these and other psychometric findings will ultimately shape our recommendations on how to apply and interpret the DECQ®. Although we recognized the DECQ® might work better without it, we were concerned that a first factor might dominate. Such a factor structure might be associated with self-report method variance (Campbell & Fiske, 1959), impression management in the compelling context of an intervention in the workplace (Paulhus & John, 1998); and expressions of global confidence and self-efficacy (Sedikides, 1993) common to successful employees associated with response style and positive traits and expectations (Daus & Ashkanasy, 2005). In addition, repetitive wording of items to activate the strength-based model might pull for an overall factor. Thus, our expectation of a notable first factor in the CFA

findings should be considered to be a cautious and conservative but not necessarily the desirable, expectation for DECQ® applications in the workplace.

For utility purposes, that is, to support easy communication between consultant and client and to optimize intervention success, the Goleman's (1995) EI competency 25-characteristic model is considered to be the optimal model. This opinion derives from the training experience and opinion of two of the authors (S.W. and R.W). Rather than discussing goals for improvement by referring to a highly abstract, over-inclusive, single EI construct, the 25 characteristics allow intervention goals to be grounded in specific characteristic descriptions from the literature with terms such as conscientiousness, commitment, or communication. Moreover, the items themselves contribute to formulating concrete, actionable communication, and in a sense, within the 25 characteristics, the items provide the optimal concretization of the EI intervention targets. Balancing statistical and practical aims would lead to considering the 25-characteristic model for interventions even if a single factor analytic solution exists. To support the use of the 25-characteristic model, we are expecting that model to be equivalent if not a better model when compared to the 2-component and 5-domain models, but possibly not a better solution than the single factor model.

Test Construction

Preliminary versions of the DECQ® were first tested in the workplace beginning in 1999. Two subsamples comprise the current sample. J.R.D. Wilke, the second author of the current study, conducted the first research with the DECQ® in his doctoral dissertation (2014) with 438 client participants from various firms. This previous study lacked power and was inconclusive in that the number of client participants was low for a CFA comparing models with 25, 5, and 2 factors, as was done in the dissertation. Indeed, it also did not include the single factor model in

the CFA. Moreover, the CFA was conducted with Principal Components Analysis, an estimation method which is not considered appropriate for rank-order or ordinal scales. The current study minimizes these statistical limitations by using Maximum Likelihood (ML) and Robust Maximum Likelihood (MLR) (Li, 2016) estimation methods and adding 658 clients for a total of 1,096 individuals in this archival research. It should be noted that initial research supported the 25-factor model although the original hypotheses were for the 5-factor model. Based on this preliminary finding, the focus in organizational interventions shifted to that model. The original research finding and the experience in applying that model contributed to the preference for the 25-factor model in the current study.

We also present (a) descriptive statistics for the normative referencing, (b) comparison for available demographic differences, (c) internal consistency reliability, (d) comparisons between the DECQ® self-report version and a corporate version in which the individual rates his corporation or organization on the same, but reworded, items.

Measures

DECQ® self-ratings. The DECQ® contains 100 items so that each of the 25 emotional intelligence characteristics encompasses four consecutive items. The DECQ® utilizes an individual competency or strength-based model, so that each question starts with, for example, "How well do you recognize/maintain/use/ make/learn, [followed by the specific item content]?" Respondents rate themselves on a Likert scale of 1 to 5, with higher ratings indicating better perceived performance. The score for each of the 33 scales (25 characteristics contained in 5 domains contained in 2 competencies subsumed in the single Overall EI scale, see Table 1) is the mean of designated items. These results are typically used as part of education and group interaction to provide feedback and to generate objectives for clients to improve their EI.

The original DECQ® version used with Subsample 1 presented items a paper-and-pencil format with items ordered according to the 25 characteristics. Thus, the four items for any particular characteristic were listed one after the other. With Subsample 2 items were randomized and administered online, and scoring was electronic—the version in current use.

DECQ-Corporate Family® (DECQ-CF®). In addition to rating oneself in the self-report version of the DECQ®, there is also a version in which the individual rates their Corporate Family®, the DECQ-Corporate Family® (DECQ-CF®). The Corporate Family® ratings are gathered by asking individuals to rate their organization, on the same items that they rated themselves. The items are minimally re-worded to address the corporation or organization at large. These revisions are largely limited to changing to plural in number. As an example, the item "How well do you attend to others emotional and non-verbal cues?" would be revised to "How well does your Corporate Family attend to others emotional and non-verbal cues?"

In this study, 529 participants in Subsample 2 clients provided both self and corporate ratings. Correlations between these two version have the potential to shed some light on the interpretation of the DECQ® self-report ratings.

Procedures

Participants completed the measure electronically at their workplace. Each participant completed an informed consent, both for the self-rating and covering the other ratings formats if any others were given. In addition to the self and corporate rating format, some participants completed a workgroup or "team" version, which is not addressed in this paper. Informed consents communicated that results would be discussed in the workgroup, coaching meetings and assured the confidentiality and individual anonymity outside of that context.

Results

Missing Data

Of the 534 participants that were initially recruited, five participants were eliminated from Subsample 2 for leaving more than 10 DECQ® questions blank. Two individuals left less than ten items blank. These missing data were at the end of the test, and they were retained in the sample. For these items, the mean ratings for the person were used.

Technical Information about Statistical Assumptions for Analyses

For those analyses for which there is no missing data, findings are reported for all 1096 clients. For the 33 DECQ® scales the minimum is 1 and a maximum is 5, all distributions are unimodal and all skew values are less than an absolute value of 0.417. Together, these characteristics support the conclusion that all scales are normally distributed. In addition, the large sample size makes the dataset robust relative to statistical assumption violations.

Normality of individual items can be an issue for reliability statistics. Similar to the scales, the minima and maxima for 100 DECQ® items are also 1 and 5 respectively. The largest absolute value for skew for any individual item is 0.602, which poses no threat to statistical assumptions. The average standard deviation is 0.847 suggesting that there is variability of ratings on individual items. Thus, the distributions of these ordinal data are similar to normally distributed ratio data. This normality supports the use of Cronbach's Alpha with this large dataset.

To ensure homogeneity of variance for each ANOVA analysis described below, Levene's test was conducted. The significance level of the Levene's test revealed values that were greater than 0.05, indicating that the variance between the groups being analyzed was not significantly different. The assumption of normality was addressed by Lumley, Diehr, Emerson and Chen

(2002), who discussed how larger sample sizes (n >100) are robust with respect to the assumption of normality.

Utilizing scatter plots to evaluate the distribution and characteristics of the data, the relationship between the data used for this study was found to be linear and without any significant outliers. Supporting factorability, Kaiser-Meyer-Olkin analysis resulted in a .974 indicating an appropriate variance structure to conduct a factor analysis. Furthermore, a Bartlett's test of sphericity was significant (p < .001),also indicating usefulness of a factor analysis.

Descriptive and Demographic Data

Descriptive data for 33 DECQ® are presented in Table 3 and Table 4. The mid-range for the mean scores across all the scales is about 3.45 to 3.65, with about 50% of the means in Tables 2 and 3 in that range.

Values were consistently higher for the second sample, but the average difference between the two samples was 0.15 rating points (e.g. 3.25 vs. 3.40), which is construed as a small difference on a five-point scale. The total mean score for sample 1 (M = 3.47) was significantly lower than sample 2 (M = 3.62; F[1, 1095] = 28.41, p < .001, η^2= .025) with a small effect size. One value was higher by 0.01in Subsample 1, the Influence characteristic. The largest difference favoring subsample 2 is 0.32 on the Empathy characteristic. Accordingly, the values for the combined samples are likely the best reference group for norms and normative comparisons.

In the sample, a disparately large proportion of Managers/Executives were male. Of the 179 individuals reporting both position and gender, there were 148 males (82.7%), but only 31 (17.3%) female Managers/Executives. Because the relationship between male gender and Manager/Executive positions could not be disentangled any other way, gender and position were

analyzed as independent variables in a 3-way Analysis of Variance (ANOVA) simultaneously with Sample (1 or 2) as the third variable. There was a consistent effect for subsample, as discussed above. However, there were no significant effects for gender or position when controlling for the other variables beyond what would be expected by chance when completing so many tests (33). Thus, there is no evidence in this large sample that different norms or multiple CFA analyses are necessary for gender or position.

Confirmatory Factor Analysis (CFA)

ML and MLR estimation were considered to be appropriate for the CFA given the ordinal rating scale of the DECQ®. Recommendations for CFA good fit criteria are varied and controversial (Hooper, Coughlan, Mullen, 2008). So as not to effect bias, we retained the four criteria based from Byrne (1989) from the initial DECQ® research (Wilke, 2014), which are largely consistent with the recommendations by Hooper et al. First, a Goodness of Fit Index (GFI) was used to compare each factor structure. The GFI scales' proposed factor structures are from zero to one, with a value of one on the GFI indicating a perfect fit. A value of 0.95 or better is considered to be the standard to which factor structures should meet to be considered a "good fit" on the GFI (Byrne, 1989). Secondly, the CMIN/df is the chi-square value of the model divided by the degrees of freedom of that model. Most researchers agree that a value of under two indicates an acceptable fit for the model (Byrne, 1989). The Root Mean Square Error of Approximation (RMSEA) and the Comparative Fit Index (CFI), like the GFI, provide a score from 0 to 1 to determine a factor structure's fit. A RMSEA score of 0.05 or less is considered to suggest that the proposed factor structure has a relatively good fit, while a CFI score of above 0.80 is considered to be acceptable when considering a factor structure's relative fit (Byrne, 2010).

As shown in Table 5, compared to the other three models, the 25 characteristic model provided the best fit with the data using a ML and MLR estimators. This model met fit criteria for CFI (ML, 0.856; MLR, 0.867) and RMSEA (ML, 0.041; MLR, 0.039). For the MLR estimator, the CMIN (2.426) and GFI (0.925) were close to the fit criteria cutoffs. However, it only marginally met the criteria for the GFI (0.925). The 5-domain, 2-competency, and single factor models did not meet the criteria for any of the fit indices. In addition, all eight parameters favored the 25-characteristic model, an outcome that is almost impossible by chance.

Internal Consistency Reliability

The internal consistency of the DECQ® was examined to gain an understanding of the measure's reliability (See Table 6 and Table 7.) It was expected that the DECQ®'s components would show internal consistency reliability comparable to two similar instruments--the Emotional Competency Inventory (ECI-2, Boyatzis, Goleman, & Hay Group, 2001), based on Goleman's (1998) EI competency model, and the Emotional Quotient Inventory (EQ-I; Wolff, 2005; Bar-On, 2004), as demonstrated by a Cronbach alpha of 0.60 or greater with 0.80 considered to be strong reliability. The DECQ®'s five domains showed strong internal consistency with a mean of $\alpha = 0.901$. The Self-Awareness domain was found to have the lowest internal consistency ($\alpha = 0.845$), whereas the Social Skills domain was found to have the strongest internal consistency ($\alpha = 0.955$). The DECQ®'s 25 characteristics also showed acceptable reliability with a mean of $\alpha = 0.778$, for a four-item scale, with the only two scales with $\alpha < 0.7$ (Accurate Self-Assessment, $\alpha = 0.621$ and Trustworthiness, $\alpha = 0.693$). The Political Awareness characteristic demonstrated the strongest internal consistency ($\alpha = 0.837$). As expected (Streiner, 2003), the more items on the scale, the higher the reliability, so that the highest reliability would be found for the Overall EI ($\alpha = .978$).

Corporate Family® Rating Version of the DECQ®

Self-report DECQ® were compared to DECQ-CF® for the 529 Subsample 2 clients who provided both ratings. It is important to note that self-ratings are often inflated to externalize responsibility for difficulties in the workplace and for social desirability reasons (Donaldson & Grant-Vallone, 2002).Thus, it was expected that DECQ® self-ratings would be greater than DECQ-CF® ratings of the Corporate Family®. In other words, as an expression of confidence and work-related self-esteem, one would be expected to rate themselves more highly than they would the Corporate Family® at large. Secondly, it was expected that technical aspects related to rating style and preferences in the rating process would result in a positive correlation between DECQ® self-ratings and DECQ-CF® Corporate Family® ratings.

Included in this analysis were 529 individuals from Subsample 2 who completed both the self and Corporate Family® ratings. In Table 8, means, standard deviations, and significance levels compare the two types of ratings, and correlations address the association between them. As expected, almost all of the self-ratings for the 33 scales were higher than the company DECQ-CF® ratings. Political Awareness and Influence were the only scales with lower self-ratings, but the differences were minimal (.06 and .09). The differences are best summarized by the difference of the Overall EI: This difference was small, 0.26 on the five-point scale with a small, trending to medium, effect size (*Cohen d* = .339).

Correlations between the self and company ratings are small but significant for all scales, except for Emotional Awareness. Thus, self-ratings to some degree can be expected to go up and down with the company ratings. This is a small effect, so that the relationship might not be easily perceptible in a given person's DECQ® and DECQ-CF®.

Discussion

In this section the implications of the findings are discussed, with limitations and recommendations for future research included with each topic.

The Developing Emotional Competency Questionnaire® (DECQ®) was designed as a tool to measure Emotional Intelligence (EI) and its subcomponents with the ultimate goal of enhancing or developing EI through interventions in Corporate Families® and the workplace. By identifying EI strengths and weaknesses, the DECQ® might guide mentoring and consultation with individuals, teams, and corporations so as to improve organizational well-being, productivity, and profitability. The DECQ® utilizes an individual competency or strength-based model, consisting of 25 characteristics, which are subsumed within the five domains that make up the two competencies of EI measured by the DECQ®. Although, the over-arching aims might be utility, psychometric strength is important to that practical aim. Overall then, this study may demonstrate how one might balance statistical or scientific with practical utility concerns. We considered that the 25-characteristic factor structure would be optimal for organization intervention but feared that the single factor solution might more accurately summarize the DECQ® structure.

Accordingly, psychometric analyses addressing reliability, factor structure, and normative issues were undertaken. We accumulated a large sample with a combined 1,096 clients from organizational consultation and interventions. The size of the sample allows sufficient power for all analyses and excellent external and ecological validity so that findings are generalizable to employees in an organizational context.

Reliability

The internal consistency reliability of the DECQ® was examined to evaluate the measure's reliability with the expectation that it would compare well with other measures of EI

(ECI-2, Boyatzis, Goleman, & Hay Group, 2001, and EQ-I; Wolff, 2005; Bar-On, 2004). Thus, a Cronbach alpha of 0.60 to over 0.90 would be consistent with other measures, and an alpha greater than 0.80 is considered to be strong reliability. The DECQ scales met that standard. The DECQ®'s 25 characteristics also showed good internal consistency consistent with EI other measures with an average of $\alpha = 0.778$. The five domains showed better, that is good to strong internal consistency (Mean $a = .901$), and two competencies and single Overall EI scale showed very strong internal consistency (= .978). As expected (Streiner, 2003), internal consistency was associated with the number of items so that the reliability demonstrated with only four items for each of the 25 characteristics is notable. Test-retest reliability or temporal consistency was not included in this study. Such research would add to the psychometric foundation of the DECQ®.

Interpretive Structure

We initially feared that a single factor structure would offer the best fit for the DECQ® in the CFA analysis, even it was not considered optimal for intervention. This expected, but not favored, single factor model was based on the confluence of effects of self-report response style, impression management within the organizational context, self-efficacy in the workplace, and the very similar strength-based wording used across the items. Despite these concerns, the CFA favored the 25-characteristic model over the other three models. All eight good fit findings emerged from this model. In addition, MLR and ML estimation methods produced similar results, suggesting that they are robust across different mathematical schemes. On the other hand, goodness of fit statistics fell short of providing good support of the 25-characteristic interpretive structure. Also, this better fit might be a result of including more parameters, so that the simpler model may be better. However, based on the communicability and practical advantages of the 25-characteristic model, we would assert that it is superior for organizational consulting.

Thus, improvements or adjustments in the factor structure and revisions to the item content and assignment could improve the construct validity of the scale. Examining inter-item correlations and correlations among the items and the 33 scales might lead to eliminating or revising some items and collapsing or eliminating some of the 25 characteristics. This in turn could lead to a more psychometrically sound interpretive structure, improved clarity in communication, and more effective organizational interventions.

One possible utility or practical application problem with this preferred 25-characteristic model is that 25 is a lot of constructs to manage in an organizational intervention. On the other hand, a normed test would identify a number of key characteristics within one or two of the five domains, which will simplify the process, particularly if one can use the items as examples. Also, one hundred items can be a long assessment for some. Indeed, we had to drop some participant data because of this and included some subjects who did not answer some questions at the end of the questionnaire. Accordingly, the findings for the characteristics and domains at the end of the test might not be as accurate as those earlier in the test.

The minima and maxima for all scales and items are 1 and 5 respectively. This means that some individuals answered all questions with the lowest score. Without foolproof indicators of invalid responding, we did not exclude any these DECQ® records. We did not want to exclude data that might favor the single factor model and did not want to serve any possible bias against that model. From another perspective, including these records introduces a bias in favor of the single factor solution and against the 25-factor solution. Possibly, excluding such extreme response styles and other patterned responding should be considered in future research.

Descriptive Data and Norms

Descriptive data from the scales are presented and summarized for the items and scales. Means and standard deviations were relatively consistent across scales and items. All are on the same 5-point scale given that scale scores are calculated as the average of the included items. The normality of these distributions absent of outliers introduces no psychometric challenges. Gender and position (manager/executive status vs. not) suggest that there is no need for gender or position-based norms. Thus, the current descriptive data provide a good foundation for normative and ipsative comparisons. The strength of such norms is that they are derived from an ecologically valid context, real clients undergoing an organizational intervention. However, ethnicity and education were not analyzed because of a relatively small sample size ($N < 425$ for both) and limited power. Obviously, addressing these in future research is recommended.

Suggestions of Validity and Corporate Ratings

To some degree, the comparison between DECQ® self-ratings and DECQ-CF® corporate ratings serves as a test of validity of the DECQ®. For the same reasons that we expected a one factor solution--positive impression management and expressions of global confidence and self-efficacy--we expected self-ratings to be higher than corporate ratings. This expectation was fulfilled suggesting some validity for these two versions of the DECQ®. Also, the self-ratings are correlated to a very small degree with corporate ratings. This could become a concern or confound, but the relationship is so small so as not to be worrisome.

Additional validity investigations are warranted. Also, deriving items from the underlying conceptualization of EI as supported by research contributes to the content validity. However, formal content validity research consisting, for example, of having judges sort items according to the definition of the 25 characteristics, is needed. Other studies to support validity, for example

comparing the DECQ® to a multiple-peer report, 360 version of the DECQ® or to other scales measuring EI would help to refine interpretive inferences.

Although additional research is needed, overall and in conclusion, this research supports the use of the DECQ® as a tool in identifying self-perceived EI strengths and weaknesses as a way to target interventions. Balancing technical, psychometric concerns with applied utility concerns leads to the conclusion that the 25-characteristic model should be the focal model for corporate intervention.

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Table 1

Goleman & DECQ ® Conceptual Model for Emotional Intelligence

2 Competencies	5 Domains	25 Characteristics
Personal Competence	Self-Awareness	Emotional Awareness
		Accurate Self-Assessment
		Self-Confidence
	Self-Regulation	Self-Control
		Trustworthiness
		Conscientiousness
		Adaptability
		Innovativeness
	Self-Motivation	Achievement Drive
		Commitment
		Initiative
		Optimism
Social Competence	Social Awareness	Empathy
		Service Orientation
		Developing Others
		Leveraging Diversity
		Political Awareness
	Social Skills	Influence
		Communication
		Leadership
		Change Catalyst
		Conflict Management
		Building Bonds
		Collaboration
		Team Capabilities

Table 2

Client Employee Descriptive Information (N = 1,096; Subsample 1, n = 438; Subsample 2, n = 658)

Variable	Percentage	N
Gender		
Subsample 1		
Male	72.1	316
Female	27.9	122
Subsample 2		
Male	42.2	276
Female	37.4	247
Unknown	20.4	135
Combined Sample		
Male	54.0	592
Female	33.7	369
Ethnicity/Race		
Subsample 1		
Caucasian	59.6	235
Hispanic	12.7	56
Black	4.5	20
Asian/Pacific Islander	4.3	19
Other	19.4	85
No Response	4.7	21
Subsample 2 Ethnicity/Race Not Collected		
Highest Level of Education		
Subsample 1		
High school graduate	24.2	106
Some college	13.5	59
College graduate	27.6	121
Associates Degree	5.7	25
Master's Degree	5.7	25
Graduate Degree	1.8	8
No Response	21.5	94
Subsample 2 Education Not Collected		
Position in Company		
Subsample 1		
Managers/Executives	26.7	117
Non-Managers/Executives	73.3	321
Subsample 2		

Managers/Executives	9.4	62
Non-Managers/Executives	64.9	427
No Response	25.7	169
Combined Sample		
Managers/Executives	16.3	179
Non-Managers/Executives	68.2	748
No Response	15.4	169

Table 3

Descriptive Statistics for the DECQ® 's 5 Domains, 2 Components, & DECQ® Total Score (N=1096)

Domain	M	SD	Min	Max
Self-Awareness	3.70	0.52	1.00	5.00
Self-Regulation	3.68	0.48	1.00	5.00
Self-Motivation	3.52	0.54	1.00	5.00
Social Awareness	3.55	0.52	1.00	5.00
Social Skills	3.46	0.55	1.00	5.00
Competency				
Personal	3.63	0.47	1.00	5.00
Social	3.49	0.51	1.00	5.00
EI Total	3.56	0.47	1.00	5.00

Table 4

Descriptive Statistics for the DECQ® 's 25 Characteristics (N=1096)

Characteristic	M	SD	Min	Max
Emotional Awareness	3.79	0.64	1	5
Accurate Self-Assessment	3.80	0.57	1	5
Self-Confidence	3.53	0.67	1	5
Self-Control	3.39	0.69	1	5
Trustworthiness	4.04	0.55	1	5
Conscientiousness	3.75	0.67	1	5
Adaptability	3.69	0.64	1	5
Innovativeness	3.52	0.65	1	5
Achievement Drive	3.62	0.62	1	5
Commitment	3.57	0.64	1	5
Initiative	3.46	0.68	1	5
Optimism	3.41	0.64	1	5
Empathy	3.63	0.72	1	5
Service Orientation	3.91	0.61	1	5
Developing others	3.44	0.62	1	5
Leveraging Diversity	3.62	0.72	1	5
Political Awareness	3.20	0.71	1	5
Influence	3.17	0.75	1	5
Communication	3.38	0.61	1	5
Leadership	3.49	0.65	1	5
Change Catalyst	3.36	0.69	1	5
Conflict Management	3.36	0.70	1	5
Building Bonds	3.51	0.68	1	5
Collaboration	3.66	0.61	1	5
Team Capabilities	3.64	0.66	1	5

Table 5

Confirmatory Factor Analysis of the DECQ® (N = 1096)

Fit Criteria	GFI > .95	CMIN/df <2	CFI > 0.80	RMSEA < 0.05
25 Characteristics				
ML	0.781	2.801	**0.856**[1]	**0.041**
MLR	0.925	2.426	**0.867**	**0.039**
5 Domains				
ML	0.617	4.453	0.707	0.056
MLR	0.856	3.825	0.717	0.055
2 Components				
ML	0.605	4.700	0.685	0.058
MLR	0.855	4.036	0.695	0.057
1 EI Factor				
ML	0.579	5.057	0.655	0.061
MLR	0.847	4.342	0.664	0.060

Table Note. GFI = goodness of fit index; CMIN/df = chi-square/degrees of freedom; RMSEA = root mean square error of approximation; CFI = comparative fit index
[1]Bold font indicates parameter is in "good fit" range for CFA.

Table 6

Cronbach Alpha Reliability for the DECQ® Five Competencies (N = 1096)

Competency	# of items	α (n = 1096)
Self-Awareness	12	.845
Self-Regulation	20	.897
Self-Motivation	16	.897
Social Awareness	20	.909
Social Skills	32	.955

Table 7
Cronbach Alpha Reliability for the DECQ® 25 Characteristics (N = 1096)

Characteristic[1]	α
Emotional Awareness	.767
Accurate Self-Assessment	.621
Self-Confidence	.777
Self-Control	.808
Trustworthiness	.693
Conscientiousness	.769
Adaptability	.807
Innovativeness	.734
Achievement Drive	.763
Commitment	.770
Initiative	.733
Optimism	.721
Empathy	.836
Service Orientation	.806
Developing Others	.790
Leveraging Diversity	.836
Political Awareness	.837
Influence	.798
Communication	.776
Leadership	.769
Change Catalyst	.830
Conflict Management	.805
Building Bonds	.785
Collaboration	.790
Team Capabilities	.820

[1]The number of items for each of the DECQ® 25 Characteristics is four.

Table 8

Comparisons and Correlations: Self-rating DECQ® & Corporate Family®-rating DECQ®-CF

(N = 529, from Subsample 2)

	DECQ®		DECQ-CF®				
Scale[1]	M	SD	M	SD	p[1]	d[2]	r[3]
Emotional Awareness	3.99	0.61	3.24	0.74	0.000	0.802	0.066
Accurate Self-Assessment	3.94	0.55	3.28	0.72	0.000	0.791	0.157
Self-Confidence	3.64	0.64	3.44	0.72	0.000	0.220	0.170
Self-Control	3.54	0.66	3.36	0.68	0.000	0.208	0.198
Trustworthiness	4.12	0.52	3.64	0.74	0.000	0.624	0.306
Conscientiousness	3.89	0.66	3.57	0.75	0.000	0.346	0.156
Adaptability	3.84	0.62	3.51	0.71	0.000	0.387	0.208
Innovativeness	3.62	0.62	3.41	0.74	0.000	0.239	0.184
Achievement Drive	3.73	0.60	3.54	0.73	0.000	0.202	0.195
Commitment	3.69	0.61	3.56	0.76	0.000	0.155	0.369
Initiative	3.55	0.65	3.36	0.72	0.000	0.202	0.124
Optimism	3.51	0.61	3.48	0.70	0.838	0.009	0.214
Empathy	3.82	0.67	3.30	0.78	0.000	0.586	0.271
Service Orientation	3.98	0.61	3.66	0.80	0.000	0.367	0.297
Developing others	3.53	0.61	3.29	0.80	0.000	0.262	0.254
Leveraging Diversity	3.80	0.70	3.57	0.77	0.000	0.253	0.410
Political Awareness	3.34	0.66	3.40	0.74	0.026	0.098	0.291
Influence	3.25	0.75	3.34	0.74	0.005	0.124	0.302
Communication	3.50	0.60	3.32	0.72	0.000	0.216	0.294
Leadership	3.58	0.64	3.48	0.81	0.075	0.078	0.183
Change Catalyst	3.50	0.65	3.35	0.85	0.007	0.119	0.207
Conflict Management	3.51	0.66	3.35	0.75	0.000	0.165	0.313
Building Bonds	3.66	0.63	3.47	0.80	0.000	0.189	0.194
Collaboration	3.80	0.58	3.45	0.83	0.000	0.370	0.264
Team Capabilities	3.78	0.62	3.54	0.87	0.000	0.226	0.205
Total EI - All 100 items	3.69	0.47	3.43	0.64	0	0.339	0.219

[1] p for t-test comparing DECQ® to DECQ-CF®
[2] Cohen's d for effect size
[3] Pearson Correlation between DECQ® to DECQ-CF®