Systems Research and Behavioral Science

WILEY

SYSTEMS and BEHAVIORAL RESEARCH SCIENCE

RESEARCH NOTE

Development of a New Emotional Intelligence Tool for Facilitating Systemic, Second-Order Change Among Individuals, Teams and Organizations

Stephen D. Wilke[1] | Jared R. D. Wilke[1] | Donald J. Viglione[2] | Cody Gustaveson[2] | Danielle McGraw[2]

[1]LEADon, Inc., San Diego, California, USA | [2]California School of Professional Psychology, Alliant International University, San Diego, Canada

Correspondence: Donald J. Viglione (dviglione@alliant.edu)

Received: 29 June 2023 | **Revised:** 18 September 2024 | **Accepted:** 7 November 2024

Funding: The authors received no specific funding for this work.

Keywords: assessment | coaching | DECQ | emotional intelligence | test development

ABSTRACT

The Developing Emotional Competency Questionnaire (DECQ) is designed to measure emotional intelligence (EI) to aid EI improvement within organizational interventions. It is unique in that one rates not only oneself but also one's work team and organization. It aims to induce mental constructs of EI at these three levels within a training intervention that focuses on systemic and second-order change elements. This focus of the DECQ as a training tool to enhance EI necessitates balancing technical and psychometric concerns with utility and applied instructional realities. Thus, (a) measuring EI at three levels and (b) using this measurement as the foundation to train workforces about EI are the two distinctive qualities of the DECQ that distinguish it from other EI measures. Accordingly, it acts as both an instrument and an intervention. Archival, de-identified data from 1058 individuals undergoing organizational consultations were accessed to maximize ecological validity. Internal consistency reliability, structural validity, factorial invariance and the normative foundation are presented. Findings are consistent with Goleman's EI model and recent revisions. Results provide initial support for DECQ ratings of self, work team and organization to identify EI strengths and weaknesses to target interventions.

1 | Introduction

Emotional intelligence (EI) is associated with individual performance in the workplace (Bar-On 1997; Caruso, Mayer, and Salovey 2002; Joseph and Newman 2010; Mishra and Mohapatra 2010), and meta-analyses have shown that productivity is positively related to EI (see, e.g., Joseph et al. 2015; Miao, Humphrey, and Qian 2017). Druss, Schlesinger, and Allen (2001) studied more than 6200 employees in several major companies and found that emotional problems among employees disrupted productivity. Conversely, Barsade (2002) described a 'ripple effect' of a positive personality in the workplace, in which team members with a positive outlook and motivation induced other team members to adopt this emotional state; moreover, this positive emotional contagion spread through the organization and increased productivity. Consistent with these research findings, organizations need to be knowledgeable about EI and employ EI-based techniques that foster a healthy, happy and more productive work environment.

Effective project managers and executives who cultivate cohesive teams can enhance organizational performance (Goleman 1998; Joseph and Newman 2010; Levitats and Vigoda 2017). The Standish Group International (2009) reported that project failures in the United States were often due to unclear goals and lack of managerial involvement. A meta-analysis with authors from Germany and the United Kingdom (Schyns and Schilling 2013) revealed a strong association

© 2024 John Wiley & Sons Ltd

between destructive leadership and counterproductive work behaviour. The better a manager or leader perceives, understands and manages the emotional behaviours of themselves and others, the more likely they are to be successful and productive, as suggested by Bar-On (1997) and Goleman (1995). Indeed, Mattingly and Kraiger (2019) in their meta-analytic study found that EI training produced a moderate and robust, positive increase in EI scores across gender and assessment tool, consistent in size with interventions targeting other workplace behaviours.

Accurate EI measurement in organizations can identify areas of training needs for employees, teams and companies (Caruso, Mayer, and Salovey 2002; Goleman, Boyatzis, and McKee 2002; Joseph and Newman 2010). This study outlines the development of such a tool that goes beyond measuring an individual's EI in the workplace. Notably, the tool aims to measure team and corporate EI, while it is also designed to be used as an instructional and training tool. Simply put, it intends to enhance overall EI training within the workplace. First, however, we address EI models.

1.1 | EI Models

EI is a broadly defined construct that is related to perceiving and understanding emotions in oneself and others. Goleman's (1995) book Emotional Intelligence brought EI to the forefront of popular culture. Goleman (1998, p. 137) defined EI as 'the capacity for recognizing our own and others' feelings to motivate, and for managing emotions in ourselves and relationships'. Mayer and Salovey (1997, 3) stated that the fundamental dimensions of EI include 'the ability to perceive emotions, to access and generate emotions to assist thought, to understand emotions and emotional meanings, and to reflectively regulate emotions to promote both better emotion and thought'. While descriptions of EI vary among researchers (Matthews, Roberts, and Zeidner 2003; Waterhouse 2006) and practitioners, the core idea remains consistent: EI skills are essential for workplace adaptation, problem-solving and performance improvement in international contexts (see, e.g., Jafri 2018; Murphy and Jeneke 2010; Yang, García Díaz, and Hsu 2021). A recent meta-analysis confirms that the EI concept has been applied across numerous countries and cultures while retaining an association with proficient and productive work behaviour (Miao, Humphrey, and Qian 2020). These findings support the notion that EI is a human characteristic that can be developed with training over time in different cultures.

Goleman's (1995) initial EI model included 25 emotional and social components within five branches: self-awareness, self-regulation, motivation, empathy, and social skills. Including both performance abilities and psychological traits has led to characterizing his model and its measurement as a mixed model. This model, which also included moral reasoning, was revised and simplified several times (Wolff 2005) retaining 17 skills and merging the motivation and self-regulation branches. Using a trait-based approach to EI, Goleman demonstrated that individuals and groups could improve EI competencies and that this approach promoted second-order change better than other EI perspectives (Goleman, Boyatzis, and McKee 2002). Consistent with Goleman's (1995) claims, meta-analyses (Miao, Humphrey, and Qian 2017; O'Boyle et al. 2011) have demonstrated that mixed model and self-report measures offer incremental validity over cognitive ability in the prediction of positive behaviours, attitudes and performance in the workplace. Recently, Jain and Jain (2023) used a trait-based EI model to improve psychological health in the workplace. However, assessing EI remains complex. Current measures sometimes overlap with global personality traits, such as the NEO Big-5 Personality Traits, posing challenges for accurate characterization and evaluation (Ackley 2016; Van der Linden et al. 2017).

1.2 | Developing Emotional Competency Questionnaire (DECQ)

The current paper describes the development and psychometric foundation of the DECQ (Wilke, Wilke, and Viglione 2018), a measure of EI as expressed in vivo within the workplace. The DECQ's applied aim is to support EI training in organizations, including for-profit and non-profit entities, government agencies and educational institutions. Accurate measurement of EI strengths and weaknesses is critical and could guide mentoring and consultation with human talent and their teams to improve organizational well-being, productivity and profitability.

The DECQ is a tool designed to help individual members of a corporate family[1] and teams to understand how they individually and collectively perceive the EI features of themselves (DECQ-S), their team (DECQ-T) and their organization or corporate family (DECQ-CF)—a distinguishing feature of the DECQ measurement and training applications. Trainers intervene and use the participants' scores and the items themselves to increase the awareness and importance of understanding these three levels of EI systemically to stimulate individual and second-order change. To our knowledge, the DECQ is the only measure designed to induce team and organizational EI mental schema and behaviours in the workplace. Other EI measures focus solely (a) on the individual's performance (i.e., MSCEIT), (b) on measuring the individual's EI traits (i.e., ECI) or (c) on utilizing a 360° approach (i.e., EQUATION 360). The DECQ intervention approach allows us to combine the accountability of a 360° assessment while increasing the effectiveness of the feedback by helping each individual to be more open to that feedback (Bracken and Rose 2011; Wilke, Wilke, and Viglione 2015).

In a DECQ EI intervention, using the term 'corporate family' induces systemic and second-order awareness and concepts (Wilke, Wilke, and Viglione 2015). Also, the term 'team' is added to 'corporate family' within the DECQ assessment to shift some of the camaraderie, communication, motivation and unity emphasis to the team and organization. Within the intervention, trainers explain that the etymology of the term 'corporate' goes back to the Latin 'corpus' (i.e., body) and the Latin 'corporare' meaning 'to form into a body' (Merriam-Webster n.d.; Online Etymology Dictionary n.d.). The goal is to highlight the systemic and structural concepts to understand EI and DECQ test results. Coaching clients to adopt the view of the workplace as a family or an interdependent system is essential to DECQ interventions.

Because the DECQ is meant to be an organizational intervention tool, balancing scientific and applied practical aims is important

in its development (Leonard 2017). In a review of EI practical issues and training applications, Ackley (2016, p. 270) suggested that consultants must speak to 'clients about EI in plain language'. The DECQ was created as such a tool, not only to measure EI within the workplace from varying perspectives but also to educate members of an organization on EI constructs in a way that is specific, well-defined and anchored. Concretely, DECQ results and answers to specific items are used, in part, for education and group interactions to provide feedback and to generate specific objectives and motivation for clients to improve EI. The expectation is that this will have a systemic impact that involves the perceptions and descriptions of EI at the team and organizational levels (Barsade 2002). 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 to maximize motivation and self-efficacy. It is easier for organizational clients to understand intervention goals defined concretely and specifically by, for example, four DECQ items rather than when compared to high-level, intellectualized abstractions defined by, for example, 20 test items. In terms of communicability and utility within organizational interventions, constructs with fewer items might be favoured over more nebulous ones defined by more items.

Like family and systems intervention, understanding an individual's role in the organization can illuminate necessary steps to improve performance. Our DECQ consulting experience has revealed that workers are interested and enlightened by comparing self, team and corporate EI scores and that these three levels stimulate group discussions regarding the need for improvement.

1.3 | Foundation of the DECQ

As noted above, the DECQ structure and theoretical foundation are based on Goleman's EI model and conceptual and empirical research (e.g., Goleman, Boyatzis, and McKee 2002; Joseph and Newman 2010; Joseph et al. 2015, Newman, Joseph, and MacCann 2010). DECQ development began in the late 1990s.[2] The initial DECQ items were conceptualized by the first author according to the Goleman's model. The first and third authors then optimized phrasing to conform with Goleman's 25 Characteristics and higher order constructs as described in the literature (e.g., Goleman 1995; Joseph and Newman 2010; Wolff 2005) through repeated consultation and refinement. Thus, content validity is supported by a previously published, research-based model in the literature along with content review and judgement of the two authors, one an experienced practitioner and the other a researcher and practitioner. As shown in Table 1, the hierarchical EI model for DECQ has two main core Competencies: Personal Competency and Social Competency. These branch into five Domains, which, in turn, encompass 25 Characteristics. The five Domains are Self-Awareness, Self-Motivation, Self-Regulation, Social Awareness, and Social Skills.

1.4 | Current Study: Testing the DECQ Structure

With our large sample of clients from organizations to maximize ecological validity, confirmatory factor analysis (CFA) was used to evaluate structural validity by testing the intended loadings on the factors and to identify the optimal interpretive structure of the DECQ. Because the mixed model EI and DECQ had originally been conceptualized and developed in a self-report method (Wilke 2014; Wilke, Wilke, and Viglione 2018), we chose to use the DECQ-S to define the factor structure for 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.

We were concerned that a single factor might dominate the DECQ as a possible outcome of self-report method variance (Campbell and Fiske 1959), impression management in the compelling context of an intervention in the workplace (Paulhus and Oliver 1998) and/or expressions of global personal confidence and self-efficacy (Sedikides 1993) common to successful employees associated with response style and positive traits and expectations (Daus and Ashkanasy 2005). In addition, the repetitive wording of items might pull for a single overall factor. Conversely, the intended 25-Characteristic structure may be better for interventions by identifying individualized groups of items that the employees could focus on. Thus, our expectation of a notable first factor in the CFA findings is cautious and conservative, but not desirable for DECQ applications in the workplace.

To address potential positive bias because of the rating nature of the measure, the inattentive respondents were removed from the analyses. The positivity bias can be neutralized (Hino and Imai 2018) by excluding data from respondents who repeatedly picked the same response option (e.g., 3 for average or, alternatively, 5 for excelling), so as to minimize the variability and precision of their responses. Both Meade and Craig (2012) and Maniaci and Rogge (2014) also reported that repeating the same item response is a major source of inattentive responding and can interfere with correlation and factor analyses. The resulting assumption is that the remaining individuals carefully considered their responses, and any further removal would result in overcorrecting positivity bias.

To communicate easily with clients in training, we used the items themselves to represent the meaning of the 25 Characteristics. Rather than discussing goals for improvement with clients by referring to the abstract, over-inclusive, single EI construct, we use the item wording terms such as 'conscientiousness', 'commitment' or 'communication'. Moreover, the four items within each of the 25 Characteristics contribute to formulating concrete, actionable communication, that is, better instruction and training. Thus, the wording of the items within the 25 Characteristics likely provides the optimal concretization of the EI intervention targets and serves the goal of the DECQ to enhance training and EI improvement.

Balancing statistical and practical aims could 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 the model to be equivalent if not better than the single EI factor, 2-Competency and 5-Domain models. Also, we see this study as an avenue to further assess the applicability of Goleman's EI model relevant to the unique three-level construction of the DECQ.

TABLE 1 | Goleman DECQ 25-Characteristic and revised 20-Characteristic EI models.

		25 Characteristics	20 Characteristics
2 Competencies	**5 Domains**	**Original model**	**Revised model**
Personal Competence (38)	Self-Awareness (10)	Emotional Awareness	Emotional Awareness
		Accurate Self-Assessment	*Accurate Self-Assessment (3)*
		Self-Confidence	*Self-Confidence (3)*
	Self-Regulation (15)	Self-Control	*Self-Control (3)*
		Trustworthiness	Trustworthiness
		Conscientiousness	Conscientiousness
		Adaptability	Adaptability
		Innovativeness	
	Self-Motivation (13)	Achievement Drive	*Achievement Drive (5)*
		Commitment	Commitment
		Initiative	
		Optimism	Optimism
Social Competence (39)	Social Awareness (19)	Empathy	*Empathy (3)*
		Service Orientation	Service Orientation
		Developing Others	Developing Others
		Leveraging Diversity	Leveraging Diversity
		Political Awareness	Political Awareness
	Social Skills (20)	Influence	Influence
		Communication	*Communication (3)*
		Leadership	*Leadership Catalyst (5)*
		Change Catalyst	
		Conflict Management	
		Building Bonds	Building Bonds
		Collaboration	*Team Capabilities (5)*
		Team Builder	

Note: Number of items for Competencies and Domains listed in parentheses. Characteristics without parenthesized numerals include four items. Characteristics in italics include the number of items in parentheses and do not contain the same items as the original 25 Characteristics.

Preliminary versions of the DECQ-S were first tested in the workplace in 1999. The second author of the current study conducted the first research with the DECQ-S in his doctoral dissertation (Wilke 2014) with a group of 438 client participants from EI organizational interventions with various firms.[3] This study provided some initial support for the 25-Characteristic model but was inconclusive and incomplete. It also did not include the single-factor model in the CFA.

We also present (a) descriptive statistics for the normative referencing, (b) comparisons for demographic differences, (c) internal consistency reliability and (d) comparisons between the DECQ-S, DECQ-T and DECQ-CF. Self-ratings are often inflated to externalize responsibility for difficulties in the workplace and for reasons related to social desirability (Donaldson and Grant-Vallone 2002). Thus, we expected that DECQ-S 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, individuals would rate themselves more highly than their work team and corporate family at large. In a sense, it would support the validity of the DECQ scales in that it acts like other measures in vivo. This phenomenon is called leniency in self-ratings (Heidemeier and Moser 2009). Secondly, it was expected that rating style and EI structural validity would result in positive correlations between pairs of the three DECQs.

To preview the key findings, the results from two CFA analyses suggest that the various revisions to the 100-item DECQ lead to a 77-item DECQ model, which improves upon the structure of the underlying the Goleman's model. The study supports potential applications and further studies of this shorter DECQ, for organizational EI consulting and training, suggesting it offers

superior interpretive structure and internal consistency. The research emphasizes the practical application of the DECQ in fostering EI at individual, team and organizational levels, despite some limitations, such as its reliance on self-report and the need for validation studies.

2 | Method

2.1 | Participants

An observational, archival and a priori confirmatory study was conducted to validate the dimension reduction of three DECQ instruments. To maximize ecological validity, archival DECQ data from EI development interventions offered by the first two authors were used. Participants included executives, their direct reports and managers, as well as those considered to be leaders in their organizations. All participants participated in the EI training sessions. Small organizations tended to include a larger proportion of their personnel but had fewer status levels compared to larger organizations. Data were collected from all trainings provided from 2002 to 2020 in the United States in a majority of the 48 contiguous states, with about 60% from western states, 20% from southern states and 20% from Midwest and eastern states. Sources included mostly (a) for-profit organizations across economic sectors—including construction, technology (software and hardware), architecture and retail, as well as (b) a small proportion of non-profit. There were no additional inclusion or exclusion requirements. The authors' University Institutional Review Board approved this archival data study. The data itself have been de-identified and are anonymous.

2.2 | Data Cleaning and Sample Selection

Of the original 1058 DECQ-S cases, seven were removed due to missing data, and 16 were excluded because of inattentiveness to item content or invalid responding styles as defined below. Of the original 827 DECQ-T cases, 9 were removed for missing items, and 31 more were excluded because of inattentive or invalid responding, operationally defined as one rating or two ratings accounting for 95 or more for the 100 items. For example, DECQs were excluded if a score of 1 was selected for 96 items or in cases of 89 ratings of 1 and 7 ratings of 2. Of the original 868 DECQ-CF cases, 1 was removed for missing data, and 50 were removed for inattentive or invalid responding. Thus, of the original 1058 respondents, we analysed data from 1035 cases with DECQ-S, 787 DECQ-T cases, 814 DECQ-CF cases and 761 completing all three DECQ measures.

Of the original 1058, for gender, 277 responded as female, 342 as male and 439 did not respond. Regarding roles, 134 responded as executives, 744 as non-executives and 180 did not respond. We found no significant DECQ total score differences based on gender or position.

2.2.1 | DECQ

The DECQ is administered online and is the only measure included in this study. Items are randomized anew for each participant and scored electronically, to control for order effects on individual items. All three versions of the DECQ administered to the participants contain 100 items so that each of the 25 Characteristics is defined by four items. It utilizes a competency or strength-based model, so that items are in question form, starting with 'How well do you recognize/maintain/use/make/learn, [followed by the specific item content]?' These items are presented randomly to each user, providing a different order of items for each user that takes the DECQ. A few examples of items would be:

> Focusing on positive results, how driven are you to meet objectives and standards?

> How well do you draw all team members into active and enthusiastic participation?

> How well do you adapt your responses and tactics to fit situations which are rapidly changing?

Respondents rate themselves on a Likert scale of 1 to 5, with higher ratings indicating better performance. The instructions for the three DECQ versions are designed to focus on EI in the context of the job and workplace. Thus, the EI construct for the DECQ is not a global trait that manifests across all situations. The instructions read

> On a scale of 1 to 5, select the most appropriate answer to the statement. 1 means that you believe that you, your team, or your corporate family are weak in this area, 3 is average, and 5 means that you or they excel in this area. The questions are written for you to answer individually. However, when answering questions referring to your Team or your Corporate Family, replace the word 'you' with 'Team' or 'Corporate Family'. Answer the questions as you believe your Team or Corporate Family currently performs relative to the questions.

2.2.2 | DECQ-T and DECQ-CF

The team and corporate family ratings are gathered by asking individuals to rate their work team and their organization at large on the same items that they rated themselves. Item rewording across the three versions is limited to identifying the self, team or corporate family as the entity being evaluated. 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 team attend to others' emotional and non-verbal cues?' or 'How well does your corporate family attend to others' emotional and non-verbal cues?'

2.2.3 | Procedures

Participants completed the DECQ-S, DECQ-T and DECQ-CF if they were assigned electronically at their workplace. Each

participant had previously provided informed consent, which communicated that results would be discussed in the workgroup and coaching meetings, and these consents assured confidentiality and individual anonymity outside of that context. Demographic information was collected from most respondents.

3 | Results

3.1 | CFA

3.1.1 | Assumptions

Examining scatter plots revealed that the DECQ scores were linear without any significant outliers. Supporting factorability, Kaiser–Meyer–Olkin analysis resulted in a 0.974, indicating an appropriate variance structure to conduct a CFA. Furthermore, Bartlett's test of sphericity was significant ($p < 0.001$), also indicating the applicability of factor analysis. Additionally, multivariate normality was examined, and no violations that might distort the analyses were present.

3.1.2 | DECQ-S Factor Solution as Template

As planned, we emphasized the DECQ-S in the CFA analyses by processing it first and using it to define the factor structure relevant to assessing structural validity for the DECQ-T and DECQ-CF. Moreover, the use of inattentive, invalid or patterned responding for excluded participants supported emphasizing the DECQ-S structure. As noted in Section 2.2, 1.5% of the DECQ-S participants used only one rating for 95 or more for the 100 items, whereas nearly 3.1% of the 26 DECQ-T and 4.6% of the 40 DECQ-CF participants did so. Investigating this further, we calculated the within-subject, standard deviations for the 100 ratings of each individual included in the final sample. The means and medians of the within-person standard deviations conformed to the same pattern: DECQ-S, M = 0.708, SD = 0.687 versus DECQ-T, M = 0.606, SD = 0.596 (independent *t*-test compared to DECQ-S, $p = 0.0007$); DECQ-CF, M = 0.607, SD = 0.589 (independent *t*-test compared to DECQ-S, $p = 0.0006$).

To further illuminate the restricted distributions with the DECQ-T and DECQ-CF, we identified the proportion of participants who employed only one rating for 80 or more of the 100 items. The same pattern emerged in 4.8% of the DECQ-S participants versus 11.0% of the DECQ-T participants (Fisher's exact test compared to DECQ-S, $p < 0.0001$) and 16.8% of the DECQ-CF participants (Fisher's exact test compared to DECQ-T, $p < 0.0006$) used one rating for 80 or more ratings. Thus, it was clear that participants were much more discriminating, attentive and specific in their responses across the items of the DECQ-S compared to the DECQ-T and DECQ-CF. Indeed, for the latter two DECQ versions, these data, along with visual inspection of the data, suggest that considerably larger proportions of individuals identified an overall rating or general opinion in answer to the general question 'How well does my team ...' and 'How well does my corporation ...' and used that rating for the majority of the items and endorsed ratings above and below that mark infrequently. Compared to the DECQ-S, this item response strategy appeared to be used two times more often in the DECQ-T and three times more often in the DECQ-CF. Such a strategy reduces differences across items and is more likely to interfere with factorability at the 25-Characteristic level than at the 5-Domain and 2-Competency levels. As a result, one can infer that participants attended to the meaning of individual items more and distinguished more between item content for the DECQ-S. These findings also support our conclusion that the factor analysis of the DECQ-S is the most important and that it should be used to define the factor structure for the three versions. Also, one can speculate that this pattern is consistent with the authors' assumption that the EI team and EI organization concepts are not well-developed and might be improved by the subsequent training sessions.

3.1.3 | Refining the Factor Structure

Intercorrelations among the 25 Characteristics were calculated to identify redundant pairs. Pairs of Characteristics with correlations above 0.80 were replaced by the single item of the pair that offered greater statistical consistency with its placement in the factor structure. Relationships among individual items within these Characteristics were examined. Items that had a larger correlation to any individual inter-factor item than to intra-factor items were (a) moved if the item was a good statistical fit with the Characteristic or (b) removed from the DECQ if it did not. Almost all of the items that were moved, were moved to Characteristics within the same Domain. Characteristics with less than three items were deleted. Some Characteristic names were modified to better fit its items and findings in the field and experience in using the previous version of the DECQ. Accordingly, factor distinctiveness was increased, and redundancy was decreased. Such exclusion of redundant items and moving items from one Characteristic to another within the same Domain increases content and structural validity.

As seen in Table 1, this restructuring reduced the number of Characteristics from 25 to 20, while retaining their place within the five Domains and two Competencies. In doing so, we were mindful of the changes and criticism of the Goleman model and measures (Wolff 2005). The majority of the Characteristics, 13 of 20, include four items, five include three items and two Characteristics have five. Providing some support to the structural validity of the Domains, no items were moved from one Domain to another. A total of 23 redundant items were removed, reducing the overall item count from 100 to 77 for the statistical analyses that follow.

3.1.4 | Analytic Strategy

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, and Mullen 2008). So as not to affect bias, we retained comparative fit index (CFI), standardized root mean squared residual (SRMR), root mean square error of approximation (RMSEA) and discrepancy function chi-square/degrees of freedom (CMIN/DF) to the recommendation of Jackson, Gillaspy, and

Purc-Stephenson (2009) review of the available literature. RMSEA and CFI represent incremental fit indices reported in this study, while SRMR represents a residual-based fit index. Nevertheless, all indices were selected based on their robustness to detect misspecification and to protect against sample size bias. CMIN/DF is sensitive to sample size, but this measure is used for comparison of the smaller independent sample.

3.1.5 | CFA Outcome

As shown in Table 2 for the DECQ-S, compared to the other three models, the 20-Characteristic model provided the best fit with the data using ML and MLR estimators. This model fits the criteria for SRMR (ML, 0.045; MLR, 0.045), for CFI (ML, 0.886; MLR, 0.893) and for RMSEA (ML, 0.040; MLR, 0.039). For the MLR estimator, the CMIN (2.349) approached the fit criteria for cutoff. The 5-Domain, 2-Competency and single-factor models did not meet the criteria for any of the fit indices. All eight parameters favoured the 20-Characteristic model, an outcome that is almost impossible by chance.

As discussed previously, the DECQ-S was prioritized in the development of the 20-Characteristic structure. The 20-Characteristic, 5-Domain, 2-Competency and single-factor model was then extended to the DECQ-T and DECQ-CF allowing for interpretive implications to be made. It appears that the more generalized and less specific nature of responses on the DECQ-T and DECQ-CF reduced the variance of the 20-Characteristic model, rendering the results uninterpretable. As seen in Table 2, the 5-Domain and 2-Competency models for the DECQ-T and DECQ-CP were very similar in that all fit characteristics for SRMR, CFI and RMSEA produced the best fit with the 5-Domain model.

3.2 | Factor Invariance Testing

Consistent with Meade and Lautenschlager (2004), to test factor invariance, we conducted a CFA with an independent sample from an unpublished dissertation mentioned earlier in the current paper (Wilke 2014). As seen in Table 3, the sample included 438 client participants from EI organizational interventions from various firms with the original paper-and-pencil version of the DECQ-S. Data were collected from 2004 to 2011. Even with this relatively small sample, this CFA supported factor invariance and structural validity. Moreover, the support for the 20-Characteristic model is slightly stronger in this cross-validation than in the initial CFA with all eight measures of fit exceeding cutoffs compared to the original six of eight. None of the other 24 parameters produced by the competing factor structures come close to the suitable fit cutoffs. Thus, these comparisons support the replicability, construct validity and interpretability of the 20-Characteristic model.

3.3 | Statistical Assumptions Information for Analyses

For the 28 DECQ scales, the minimum, maximum, average and range values varied greatly across the scales. The smallest or

TABLE 2 | Confirmatory factor analyses for three DECQ versions

Fit criteria	CFI	SRMR	CMIN/DF	RMSEA
DECQ-S, *N* = 1035	**> 0.80**	**< 0.05**	**< 2**	**< 0.05**
20 Characteristics				
ML	**0.886**	**0.045**	2.683	**0.040**
MLR	**0.893**	**0.045**	2.349	**0.039**
5 Domains				
ML	0.776	0.051	4.096	0.055
MLR	0.784	0.051	3.556	0.050
2 Competencies				
ML	0.756	0.052	4.368	0.057
MLR	0.764	0.052	3.789	0.052
1 Factor				
ML	0.734	0.054	4.668	0.060
MLR	0.742	0.054	4.049	0.054
DECQ-T, *N* = 787				
5 Domains[1]				
ML	**0.859**	**0.042**	2.630	**0.049**
MLR	**0.869**	**0.042**	2.300	**0.041**
2 Competencies				
ML	**0.838**	**0.043**	2.873	**0.049**
MLR	**0.833**	**0.043**	2.512	**0.044**
1 Factor				
ML	**0.819**	**0.045**	3.086	**0.051**
MLR	**0.829**	**0.045**	2.698	**0.046**
DECQ-CF, *N* = 814				
5 Domains[1]				
ML	**0.870**	**0.037**	2.708	**0.046**
MLR	**0.885**	**0.037**	2.181	**0.038**
2 Competencies				
ML	**0.848**	**0.038**	2.989	**0.049**
MLR	**0.863**	**0.038**	2.404	**0.042**
1 Factor				
ML	**0.867**	**0.040**	2.751	**0.046**
MLR	**0.882**	**0.040**	2.217	**0.039**

Note: Bold font parameters are in 'good fit' range. One hundred twenty Characteristic values not presented because of excessive covariance in the model for DECQ-T and DECQ-CF.
Abbreviations: CFI = comparative fit index; CMIN/DF = discrepancy function chi-square/degrees of freedom; RMSEA = root mean square error approximation; SRMR = standardized root mean squared residual.

TABLE 3 | Confirmatory factor analyses as test of factor invariance ($N = 438$).

Fit criteria	CFI	SRMR	CMIN/DF	RMSEA
DECQ-S, ***N*** = 438	> 0.80	< 0.05	< 2	< 0.05
20 Characteristics				
ML	**0.854**	**0.049**	**1.713**	**0.040**
MLR	**0.839**	**0.049**	**1.660**	**0.039**
5 Domains				
ML	0.675	0.062	2.487	0.058
MLR	0.672	0.062	2.386	0.056
2 Competencies				
ML	0.646	0.063	2.613	0.061
MLR	0.644	0.063	2.482	0.058
1 Factor				
ML	0.601	0.067	2.810	0.064
MLR	0.598	0.067	2.673	0.062

Note: Bold font parameters are in 'good fit' range.
Abbreviations: CFI = comparative fit index; CMIN/DF = discrepancy function chi-square/degrees of freedom; RMSEA = root mean square error approximation; SRMR = standardized root mean squared residual.

most restricted range was 2.44 for the DECQ-S Total score with a minimum of 2.57 and a maximum of 4.91. Most scales, particularly those with fewer items, that is, the Characteristics scales, had a minimum of 1 and a maximum of 5. All distributions are unimodal, and all skew values are less than an absolute value of 0.505. Together, these psychometric qualities 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. The minima and maxima for 77 DECQ items varied minimally with the mode being 1 and 5, respectively. One item demonstrated the most restriction in range with a minimum of 3 and a maximum of 5, and three items had a minimum of 2 and a maximum of 5. The largest absolute value for skew for any individual item is 0.766, posing no threat to statistical assumptions. The average standard deviation is 0.815, 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 that comparative analyses meet the statistical assumptions for paired sample *t*-tests, the above metrics suggest that these data are approximately normally distributed, they contain enough variability to lend themselves to ratio-level analysis and no notable outliers influence the mean distributions of the respective scales. To correct for the increased risk of Type 1 error rates, a Bonferroni correction has been made to the adjusted error rate of 0.5/3 resulting in a new 95% confidence and $p < 0.017$.

3.4 | Descriptive and Demographic Data

To summarize the central tendency and variability of scores, descriptive data, that is, means and standard deviations for the 28 DECQ scales and the three versions are presented in Table 4. The significance of comparisons between the three DECQs might be misleading because the three samples are overlapping but not identical. Person variable confounds are controlled by conducting within-group, repeated measure comparisons with 761 participants that provided valid data for all three tests.[4]

3.5 | Internal Consistency Reliability

Internal consistency reliability of the DECQ was examined using Cronbach alpha, a measure of the association of the items that allows one to make judgements about structural validity and revisions (see Table 5). It was expected that the DECQ's reliability would be comparable to two similar instruments—the Emotional Competency Inventory (ECI-2, Boyatzis, et al. 2001), based on Goleman's (1998) EI Competency model, and the Emotional Quotient Inventory (EQ-I; Wolff 2005; Bar-On 2005), as demonstrated by a Cronbach alpha of 0.6 or greater with 0.8 considered to be acceptable reliability. Of the 98 Cronbach alphas presented, only 13 were under 0.70 and greater than 0.60, and one under 0.60. Values at the lower end of this range are more common scales with fewer items, whereas more items would lead to larger alpha coefficients (Streiner 2003).

TABLE 4 | Descriptive data (DECQ S, $N = 1035$; DECQ-T, $N = 787$; DECQ-CF, $N = 814$).

	DECQ-S		DECQ-T		DECQ-CF	
	M	**SD**	**M**	**SD**	**M**	**SD**
20 Characteristics						
Emotional Awareness	3.99	0.62	3.56	0.61	3.41	0.68
Accurate Self-Assessment	3.94	0.59	3.65	0.60	3.40	0.69
Self-Confidence	3.77	0.65	3.53	0.61	3.43	0.65
Self-Control	3.63	0.63	3.48	0.63	3.44	0.63
Trustworthiness	3.83	0.60	3.84	0.61	3.67	0.66
Conscientiousness	4.04	0.50	3.74	0.62	3.58	0.67
Adaptability	3.85	0.63	3.70	0.60	3.54	0.65
Achievement Drive	3.79	0.59	3.73	0.59	3.63	0.60
Commitment	3.71	0.58	3.55	0.56	3.64	0.65
Optimism	3.80	0.59	3.56	0.59	3.40	0.56
Empathy	3.65	0.62	3.50	0.60	3.44	0.61
Service Orientation	3.56	0.64	3.88	0.59	3.65	0.65
Developing Others	3.57	0.61	3.45	0.69	3.52	0.69
Leveraging Diversity	3.95	0.59	3.76	0.61	3.53	0.64
Political Awareness	3.99	0.55	3.42	0.58	3.53	0.58
Influence	3.61	0.65	3.38	0.60	3.51	0.60
Communication	3.72	0.72	3.59	0.64	3.34	0.63
Leadership Catalyst	3.34	0.66	3.52	0.62	3.50	0.65
Building Bonds	3.27	0.71	3.65	0.60	3.53	0.68
Team Building	3.68	0.61	3.78	0.63	3.55	0.69
Mean	3.73	0.62	3.61	0.61	3.51	0.64
5 Domains						
Self-Awareness	3.91	0.52	3.58	0.52	3.41	0.59
Self-Regulation	3.85	0.49	3.71	0.52	3.56	0.57
Self-Motivation	3.77	0.51	3.63	0.52	3.56	0.55
Social Awareness	3.75	0.49	3.61	0.51	3.54	0.55
Social Skills	3.53	0.55	3.59	0.53	3.49	0.57
Mean	3.76	0.51	3.62	0.52	3.51	0.57
2 Competencies						
Personal	3.84	0.47	3.65	0.48	3.52	0.54
Social	3.65	0.50	3.60	0.50	3.52	0.55
Mean	3.75	0.49	3.63	0.49	3.52	0.55
DECQ Total	3.73	0.48	3.57	0.48	3.52	0.53

3.5.1 | Relationships and Comparisons Across Three DECQs

To investigate the associations of the three DECQ versions, correlations between pairs (DECQ-S with DECQ-T, DECQ-S with DECQ-CF, and DECQ-CF with DECQ-T) were calculated among 761 individuals who completed all the items. Table 6 presents the results of a correlation analysis of all comparisons of DECQ versions and *t*-test results from all three versions. As predicted, means for almost all of the 28

TABLE 5 | Cronbach alpha reliability (DECQ S, $N = 1035$; DECQ-T, $N = 787$; DECQ-CF, $N = 814$).

	DECQ-S	DECQ-T	DECQ-CF
	α	α	α
20 Characteristics			
Emotional Awareness	0.783	0.794	0.830
Accurate Self-Assessment	0.634	0.626	0.701
Self-Confidence	0.591	0.728	0.673
Self-Control	0.674	0.783	0.766
Trustworthiness	0.726	0.781	0.778
Conscientiousness	0.601	0.794	0.816
Adaptability	0.728	0.802	0.809
Achievement Drive	0.762	0.819	0.799
Commitment	0.701	0.640	0.814
Optimism	0.726	0.773	0.660
Empathy	0.681	0.685	0.660
Service Orientation	0.697	0.786	0.777
Developing Others	0.648	0.838	0.774
Leveraging Diversity	0.729	0.806	0.754
Political Awareness	0.719	0.811	0.742
Influence	0.768	0.772	0.780
Communication	0.762	0.768	0.694
Leadership Catalyst	0.804	0.788	0.802
Building Bonds	0.768	0.756	0.821
Team Building	0.793	0.861	0.860
Mean	0.715	0.771	0.766
5 Domains			
Self-Awareness	0.835	0.866	0.888
Self-Regulation	0.881	0.914	0.923
Self-Motivation	0.886	0.911	0.917
Social Awareness	0.911	0.931	0.934
Social Skills	0.931	0.938	0.947
Mean	0.888	0.912	0.922
2 Competencies			
Personal	0.945	0.958	0.963
Social	0.958	0.966	0.969
Mean	0.952	0.958	0.966
Total	0.974	0.979	0.982

scales were greater for self-ratings when compared to the team and corporate ratings, consistent with leniency in self-ratings (Heidemeier and Moser 2009). Thirteen of these scales were statistically significant when comparing self and team ratings, and 20 were significant when comparing self and corporate ratings. Another interesting finding shows that team and corporate ratings were more highly correlated with one another than they were with self-ratings. In nearly all cases, team and self-ratings were more highly correlated than team and corporate ratings.

TABLE 6 | Within-subject comparisons and correlations ($N = 761$).

	DECQ-S and T		DECQ-S and CF		DECQ-CF and T	
Scale	***d***	***r***	***d***	***r***	***d***	***r***
Emotional Awareness	**0.464**	**−0.09**	**0.591**	−0.06	**−0.250**	**0.63**
Accurate Self-Assessment	**0.395**	**−0.09**	**0.658**	−0.05	**−0.436**	**0.55**
Self-Confidence	**0.167**	**−0.10**	**0.248**	−0.01	**−0.132**	**0.47**
Self-Control	0.158	−0.18	**0.149**	0.00	0.008	**0.52**
Trustworthiness	0.363	0.00	**0.569**	0.01	**−0.309**	**0.53**
Conscientiousness	**0.158**	**−0.09**	**0.346**	−0.07	**−0.310**	**0.54**
Adaptability	0.179	−0.06	**0.313**	−0.01	**−0.199**	**0.50**
Achievement Drive	0.082	−0.05	**0.153**	0.01	**−0.101**	**0.56**
Commitment	**0.015**	**−0.10**	**0.105**	−0.03	**−0.127**	**0.52**
Optimism	**0.030**	**−0.07**	−0.029	−0.01	−0.013	**0.56**
Empathy	**0.255**	**−0.08**	**0.492**	**−0.10**	**−0.384**	**0.53**
Service Orientation	0.158	−0.06	**0.266**	−0.03	**−0.191**	**0.54**
Developing Others	0.050	**−0.09**	**0.212**	−0.06	**−0.258**	**0.58**
Leveraging Diversity	**0.044**	**−0.10**	**0.135**	−0.06	**−0.130**	**0.67**
Political Awareness	−0.103	**−0.07**	**−0.163**	−0.01	**0.089**	**0.59**
Influence	**−0.128**	**−0.12**	**−0.152**	−0.07	0.034	**0.63**
Communication	0.143	−0.05	**0.235**	−0.03	**−0.138**	**0.51**
Leadership Catalyst	**0.068**	**−0.11**	**0.140**	−0.06	**−0.108**	**0.51**
Building Bonds	**0.038**	**−0.13**	**0.146**	−0.03	**−0.185**	**0.59**
Team Building	**0.077**	**−0.08**	**0.246**	−0.02	**0.269**	**0.60**
Total EI—all 77 items	**0.133**	**−0.14**	**0.266**	−0.06	**0.214**	**0.60**

Note: Bolded Cohen's *d* effect size a $p < 0.017$ for paired sample *t*-test. Cohen's *d* effect size values greater than zero indicate that the first DECQ score listed in the column headings is greater whereas values less than zero values indicate that the second DECQ score is greater. Pearson correlations bolded when $p < 0.05$.

4 | Discussion

The DECQ was designed to measure the expression of EI and its subcomponents in the workplace with the ultimate goal of enhancing or developing EI through individual and systemic (corporate family) interventions. By identifying EI strengths and weaknesses, the DECQ might guide mentoring and consultation with individuals, teams and corporations to improve organizational well-being and productivity. The goal of measurement was not merely to assess trait EI, that is, the EI of an individual worker. Instead, we sought to measure the expression of EI contextualized in the workplace and induced and maintained within organizational climate and culture. Our goal differs from other EI assessments because our focus is to stimulate team and organizational, second-order change, rather than focusing solely on an individual's EI characteristics. While individual improvement is important, results within the workplace will be limited without the ability to test and address the corporate family's EI. In our view, utilizing the DECQ not only as a measure of EI but also as an intervention to promote EI improvement in the workplace is a function that is unique to the DECQ.

The DECQ utilizes a strength-based approach based on Goleman's (1995) EI mixed model. The original DECQ consisted of 25 Characteristics, subsumed under five Domains that make up the two Competencies of EI measured by the DECQ. Three levels correspond to the three DECQ versions, self-rating (DECQ-S), work team rating (DECQ-T) and corporation or organization rating (DECQ-CF). Simultaneously measuring these levels of an organization and using the information for individual and systemic intervention are rare if it exists at all. Although the over-arching aims might be instructional effectiveness and developing EI at these three levels, psychometric strengths are important to this practical or utility aim for the measure. We proposed that the procedures of this study may demonstrate how one might balance statistical and quantitative findings with communicability or application concerns (Ackley 2016). We hypothesized that the 25-characteristic model would offer the best fit and also evaluated reliability and other psychometric qualities.

4.1 | Interpretive Structure—Statistical and Application Issues

The original 25 Characteristic DECQ factor structure produces a suitable CFA. Significant covariance between item and factor structures rendered any analysis unreliable. Thus, we re-evaluated the 25 factors for potential redundancies. Removing items that cross-loaded with other Characteristics led to a 77-item measure and a 20-Characteristic model. Decisions about renaming and combining factors involved addressing linguistic overlap, item semantics and correlation among Characteristics. This shorter DECQ requires less time and effort to complete, and consultants will need less time to communicate and explain findings. The final versions of the scales are more valid as EI constructs so that training discussions can become more accurate and intervention targets more relevant, to enhance training.

A similar simplification also occurred with the original Goleman theory and measurement (Wolff 2005). Since the inception of his original model, Goleman removed eight total competencies (Characteristics for the DECQ) and merged two Clusters (Competencies for the DECQ). There are differences and similarities in the changes made to the DECQ and the ECI 2.0. To begin with the differences, Goleman merged the original 'Self-Regulation' and 'Self-Motivation' clusters into one 'Self-Management' cluster. Our analysis yielded no evidence of the need to merge these factors in the DECQ, as results demonstrated that each factor was a unique and separate aspect of EI. Goleman also removed two competencies (Characteristics) that were not removed in this study: Conscientiousness and Communication. The DECQ merged Leadership and Change Catalyst into a new characteristic, Leadership Catalyst, whereas the Goleman's model keeps them as separate competencies. The DECQ kept Building Bonds whereas the Goleman model removed it. Finally, Conflict Management was deleted because of overlap with other Characteristics, while the ECI 2.0 retained it.

Several revisions are shared by the Goleman ECI 2.0 and our study. First, Collaboration and Teamwork were merged in the DECQ, which was also done in the Goleman model because of a similar overlap between these two Characteristics/Competencies. The Characteristic of Innovativeness was dropped in both DECQ and ECI 2.0. Goleman's ECI 2.0 re-introduced Optimism, which is retained as a DECQ Characteristic. Furthermore, the chance of these item changes being the product of a random sample is minimized by comparison of these results with an independent sample illustrated in Table 3 (MacCallum 1986, 1995). Our CFA modelling resulted in revisions in the DECQ 20 Characteristics that are similar to those made with Goleman ECI 2.0, thus supporting the content validity of the DECQ.

The implications of our research on the DECQ resemble changes that Goleman has made to the ECI 2.0 measure. Our study supports the Goleman model of EI by providing sound psychometric data from our unique take on Goleman's original EI mode. Complications persist in differentiating the two Characteristics, Building Bonds and Team Building. These two scales involve relatively greater inter-item correlations resulting in poorer factor differentiation. Further analysis of the items contained in each will be beneficial to further refine the tool.

Given that the DECQ was developed and applied first as a self-report test, we looked to that DECQ version to derive the interpretive structure for the team and corporate versions in our CFA. In Table 2 within the DECQ-S, all six good fit findings belong to the 20-Characteristic model—two SRMR, two CFI and two RMSEA. In addition, MLR and ML estimation methods produced equivalent results, suggesting that they are robust across mathematical schemes. The pattern of values for all CFA fit indices also supports this interpretive structure: There are seven fit values for the 20-Characteristic DECQ-S structure and a total of 63 values for other interpretive structures and other DECQ versions. If one compares the CFI of 0.886 to the corresponding ML extraction, CFI values below it in Table 2, one would find that, in all nine cases, the 20-Characteristic DECQ-S is superior. There are 63 such comparisons available in the CFA results and the vast majority, that is, 59, favour the 20-Characteristics in the DECQ-S structure. On the other hand, CMIN/DF results fall short of providing support for this structure. It should be noted that in the independent sample, CMIN/DF results met the cutoff suggesting that failure to meet this criterion in the primary sample may have been due to the larger sample size. Also, the better fit of the 20-Characteristic model might be a result of including more factors, so that the simpler model could be stronger. Nevertheless, based on the communicability and practical advantages of the 20-Characteristic model, we would assert that it is superior for organizational consulting.

The responses, before eliminating those considered to be invalid, revealed that some individuals used the same rating for almost all or used only two of the five rating options exclusively. For the analyses, every effort was made to reduce the impact of inattentive or incomplete responding by excluding individuals responded in this likely invalid way. Without a definitive method of identifying invalid responding, the data become subject to the response styles of individual respondents. The steps taken to identify those with an inappropriate response style and variability realized within this dataset provide confidence that these data are valid for the analyses conducted.

All results from any of the three versions of the DECQ are used in an open discussion. DECQ-S results are shared by clients with feedback from peers. Our experience is that individual, self and team feedback given to each participant facilitates insight and a movement from external to internal locus of control within the systematic organizational milieu. This use of the DECQ as part of the intervention in improving EI is what adds a new level of effectiveness of it as a measure of EI. The use of not just individuals but also larger teams and the organization creates secondary and tertiary opportunities for development. The process of individuals and teams working together to better understand the trait-based EI results provides continued growth and building of organizational cohesion, which we have found creates a positive cycle of EI gains (Wilke, Wilke, and Viglione 2015).

The internal consistency of the DECQ was examined with the expectation that it would compare well with other measures

of EI (ECI-2, Boyatzis, et al. 2001, and EQ-I; Wolff 2005; Bar-On 2005). Thus, a Cronbach alpha of 0.60 to 0.90 would be consistent with other measures, and an alpha greater than 0.80 is considered to be strong reliability. Thus, the DECQ-S scales met that standard. As expected (Streiner 2003), internal consistency was associated with the number of items so that the reliability demonstrated with only three or four items for each of the 20 Characteristics is notable. The DECQ-T and DECQ-CF versions exhibited similar levels of reliability.

4.1.1 | Integrating the Three DECQs

The variability of within-subject ratings in the final sample revealed a less-discriminating response style for the team and corporate family DECQs. This finding suggests that there is a tendency to identify an overall, general rating for the team and corporate entity and that item responses discrimination is greater with self-ratings. This pattern related to the CFA support for the 20-Characteristics model for the DECQ-S, yet it also may have contributed to the difficulties in calculating the fit indices for the same model for the DECQ-T and DECQ-CF. Conversely, DECQ-T and DECQ-CF versions demonstrate more construct validity at the 2-Competency and 5-Domain levels. This would suggest that, in practice, comparisons of DECQ-S (self) to either DECQ-T or DECQ-CF might be influenced more by variability in the DECQ-S than by variability in the DECQ-T or DECQ-CF. Nonetheless, the validity of the three DECQ versions in this field study is supported by replicating leniency in self-ratings as demonstrated by self-ratings being more positive than ratings of the team and the organization.

The limited within-person variability of individual DECQ-T and DECQ-CF ratings limits the ability to test factor structures at the 20-Characteristic level. Further, refining these factors might lead to more valid measurement at this level. However, this may come at the cost of the utility of these measures being implemented in a cohesive, intervention-oriented structure due to the drifting of the scale structure. Instead, for organizational consultation, we would recommend emphasizing the average of the Domain, Competency and Total scores for the DECQ-T and DECQ-CF when addressing systemic issues. The need for improvement at these levels can serve to direct an individual to focus attention at the Characteristic level for self-development that might contribute most to the team and organization. In that process, low scores on the items themselves might lead to the formation of concrete, actionable goals for improvement. Additionally, utilizing the results of pre–post intervention might provide information about the effectiveness of interventions in addressing change in targeted constructs.

4.2 | Limitations and Future Research

Additional validity investigations are warranted. Deriving items from the conceptualization of EI as supported by research and the similarity in revisions between our 20-Characteristic DECQ model and Goleman ECI 2.0 supports the content validity of the DECQ and that it measures what it is purported to measure. Nonetheless, formal content validity research consisting, for example, of having judges sort items according to the definition of the revised 20 Characteristics is needed. Other studies to support concurrent validity that compare the DECQ to a multiple-peer report, 360 version of the DECQ, or to other scales measuring EI would help to refine interpretive inferences. Additionally, most of the DECQ samples were from for-profit organizations. More research with non-profit entities, government agencies and educational institutions would support generalization to those entities.

It would also be beneficial to investigate how DECQ interventions relate to performance. Other contextualized research might, for example, include re-administering the DECQ, or other mixed model EI measures 6 months after training along with additional individual, team and corporate performance measures to test the efficacy and utility of the measure and intervention. To evaluate stability over time, research on temporal consistency (test–retest) reliability would be helpful. Also, research to evaluate and develop embedded measures of positive impression management and inattentive and invalid response styles for the three DECQs is in order. Along those lines, latency patterns across items might yield information about the cognitive processing related to response styles.

As a self-report measure, the DECQ is a better measure of one's perception and beliefs than one's actual behaviour, processing and decision-making. However, employee perceptions of themselves, their teams and the corporate family are strongly related to performance (Joseph et al. 2015). Using all three versions of DECQ and following with group discussions might lead to individuals being able to conceptualize EI of their team and organization to target them for improvement.

The 28 remaining scales in all three DECQs are normally distributed without outliers, ensuring that parametric statistical assumptions are met. Associations with gender and position (manager/executive vs. non-manager/non-executive) are absent, simplifying interpretation and supporting the suitability of the current data—or a new independent sample—for establishing normative and ipsative norms. A key strength of this dataset is its ecological validity, as it involves real clients undergoing organizational interventions, enhancing utility for applied use. As a reminder, all participants provided informed consent, which assured confidentiality and anonymity outside of workgroup and coaching discussions.

Although additional research is needed, overall and in conclusion, the current research supports the use of the DECQ as a tool for identifying self-perceived EI strengths and weaknesses as a way to target interventions. Balancing technical and psychometric concerns with applied utility concerns leads to the conclusion that the 20-Characteristic model should be the focal interpretive structure for multi-level, systemic, organizational intervention. The concepts of team and corporate EI and informing training by integrating the DECQ's three levels of measurement and intervention might prove fruitful and deserve further research.

Acknowledgements

We thank Rebecca Wilke and Dallas Boyce for reviewing the manuscript and helping to prepare it for publication.

Ethics Statement

The Alliant University Institutional Review Board approved this archival data study. The data itself have been de-identified and are anonymous.

Consent

Patient consent was not collected for this archival study with de-identified data.

Data Availability Statement

Upon a reasonable request, the data used in the analyses in this study are available from the corresponding author. The data are not publicly available due to privacy and ethical restrictions.

Endnotes

[1] Although the organizational DECQ score is called the 'Corporate Family' or 'CF' level in the DECQ, trainers are free to refer to it as the 'Organizational Family'. They can also choose the most appropriate term for the institution itself as, for example, an 'agency', 'non-profit', or 'organization' or 'corporation'.

[2] The DECQ was the product of a long iterative and experiential developmental process involving measuring EI so as to facilitate systemic improvements. When the first author initiated his organizational EI training, his intention was not to develop a measure. Over the course of his work, assessing EI accurately through an instrument designed within a training intervention was deemed to facilitate EI growth. Preliminary versions of the DECQ and the development of the systemic focus and intervention over time led to the final version, which is presented in this article.

[3] We use the $N=438$ sample to test factor invariance in the current study, independent of the main sample. See Section 3.2 and Table 3.

[4] See Table 6 for these mean comparisons and correlations between pairs of DECQ versions.

References

Ackley, D. 2016. "Emotional Intelligence: A Practical Review of Models, Measures, and Applications." *Consulting Psychology Journal: Practice and Research* 68, no. 4: 269–286. https://doi.org/10.1037/cpb0000070.

Bar-On, R. 1997. *The Emotional Quotient Inventory (EQ-I): Technical Manual*. North Tonawanda, NY: Multi-Health Systems.

Bar-On, R. 2005. "The Bar-On Model of Emotional-Social Intelligence." In *Special Issue on Emotional Intelligence*, edited by P. Fernández-Berrocal and N. Extremera, 17. Asturias, Spain: Psicothema.

Barsade, S. G. 2002. "The Ripple Effect: Emotional Contagion and Its Influence on Group Behavior." *Administrative Science Quarterly* 47: 644–675. https://doi.org/10.2307/309491247.

Boyatzis, R. E., D. Goleman, and Hay Group. 2001. *Emotional Competence Inventory*. Thousand Oaks, California: Hay Group.

Bracken, D., and D. Rose. 2011. "When Does 360-Degree Feedback Create Behavior Change? And How Would We Know It When It Does?" *Journal of Business and Psychology* 26: 183–192. https://doi.org/10.1007/s10869-011-9218-5.

Campbell, D. T., and D. W. Fiske. 1959. "Convergent and Discriminant Validation by the Multitrait-Multimethod Matrix." *Psychological Bulletin* 56: 81–105. https://doi.org/10.1037/h0046016.

Caruso, D. R., J. D. Mayer, and P. Salovey. 2002. "Relation of an Ability Measure of Emotional Intelligence to Personality." *Journal of Personality Assessment* 79: 306–320. https://doi.org/10.1207/S15327752JPA7902_12.

Daus, C. S., and N. M. Ashkanasy. 2005. "The Case for the Ability-Based Model of Emotional Intelligence in Organizational Behavior." *Journal of Organizational Behavior* 26: 453–466.

Donaldson, S. I., and E. J. Grant-Vallone. 2002. "Understanding Self-Report Bias in Organizational Behavior Research." *Journal of Business and Psychology* 17: 245–260. https://doi.org/10.1023/A:1019637632584.

Druss, B. G., M. Schlesinger, and H. M. Allen. 2001. "Depressive Symptoms, Satisfaction With Health Care, and 2-Year Work Outcomes in an Employed Population." *American Journal of Psychiatry* 158: 731–734. https://doi.org/10.1002/job.321.

Goleman, D. 1995. *Emotional Intelligence*. London, England: Bantam Books.

Goleman, D. 1998. *Working With Emotional Intelligence*. London, England: Bantam Books.

Goleman, D., R. Boyatzis, and A. McKee. 2002. *The New Leaders: Transforming the Art of Leadership Into the Science of Results*. Boston, Massachusetts: Harvard Business School Press.

Heidemeier, H., and K. Moser. 2009. "Self-Other Agreement in Job Performance Ratings: A Meta-Analytic Test of a Process Model." *Journal of Applied Psychology* 94, no. 2: 353–370. https://doi.org/10.1037/0021-9010.94.2.353.

Hino, A., and R. Imai. 2018. "Ranking and Rating: Neglected Biases in Factor Analysis of Postmaterialist Values." *International Journal of Public Opinion Research* 31, no. 2: 368–381. https://doi.org/10.1093/ijpor/edy007.

Hooper, D., J. Coughlan, and M. Mullen. 2008. "Structural Equation Modeling: Guidelines for Determining Model Fit." *Electronic Journal of Business Research Methods* 6, no. 1: 53–60.

Jackson, D., A. Gillaspy, and R. Purc-Stephenson. 2009. "Reporting Practices in Confirmatory Factor Analysis: An Overview and Some Recommendations." *Psychological Methods* 14: 6–23. https://doi.org/10.1037/0021-9010.94.2.353.

Jafri, M. H. 2018. "Moderating Role of Job Autonomy and Supervisor Support in Trait Emotional Intelligence and Employee Creativity Relationship." *Vision: The Journal of Business Perspective* 22, no. 3: 253–263. https://doi.org/10.1177/0972262918785960.

Jain, P., and P. Jain. 2023. "Trait Emotional Intelligence as Predictor of Psychological Health in Undergraduate Medical Students: A Hierarchical Multiple Regression Approach." *Indian Journal Physiolology and Pharmacology* 67, no. 1: 21–28. https://doi.org/10.25259/IJPP_145_2022.

Joseph, D. L., J. Jin, D. A. Newman, and E. H. O'Boyle. 2015. "Why Does Self-Reported Emotional Intelligence Predict job Performance: A Meta-Analytic Investigation of Mixed EI." *Journal of Applied Psychology* 100: 298–342. https://doi.org/10.1037/a0037681.

Joseph, D. L., and D. A. Newman. 2010. "Emotional Intelligence: An Integrative Meta-Analysis and Cascading Model." *Journal of Applied Psychology* 9: 54–78. https://doi.org/10.1037/a0017286.

Leonard, H. S. 2017. "A Teachable Approach to Leadership." *Consulting Psychology Journal: Practice and Research* 69, no. 4: 243–266. https://doi.org/10.1037/cpb0000096.

Levitats, Z., and G. E. Vigoda. 2017. "Yours Emotionally: How Emotional Intelligence Infuses Public Service Motivation and Affects the Job Outcomes of Public Personnel." *Public Administration* 95, no. 3: 759–775. https://doi.org/10.1111/padm.

MacCallum, R. 1986. "Specification Searches in Covariance Structure Modeling." *Psychological Bulletin* 100, no. 1: 107–120. https://doi.org/10.1037/0033-2909.100.1.107.

MacCallum, R. C. 1995. "Model Specification: Procedures, Strategies, and Related Issues." In *Structural Equation Modeling: Concepts, Issues,*

and Applications, edited by R. H. Hoyle, 16–36. Thousand Oaks, California: Sage Publications.

Maniaci, M. R., and R. D. Rogge. 2014. "Caring About Carelessness: Participant Inattention and Its Effects on Research." *Journal of Research in Personality* 48: 61–83. https://doi.org/10.1016/j.jrp.2013.09.008.

Matthews, G., R. D. Roberts, and M. Zeidner. 2003. "Development of Emotional Intelligence: A Skeptical—But Not Dismissive—Perspective." *Human Development* 46: 109–114. https://doi.org/10.1159/000068585.

Mattingly, V., and K. Kraiger. 2019. "Can Emotional Intelligence Be Trained? A Meta-Analytical Investigation." *Human Resource Management Review* 29, no. 2: 140–155.

Mayer, J. D., and P. Salovey. 1997. "What Is Emotional Intelligence?" In *Emotional Development and Emotional Intelligence: Implications for Educators*, edited by P. Salovey and D. Sluyter, 3–31. New York, New York: Basic Books.

Meade, A. W., and S. B. Craig. 2012. "Identifying Careless Responses in Survey Data." *Psychological Methods* 17, no. 3: 437–455. https://doi.org/10.1037/a0028085.

Meade, A. W., and G. J. Lautenschlager. 2004. "A Monte-Carlo Study of Confirmatory Factor Analytic Tests of Measurement Equivalence/Invariance." *Structural Equation Modeling: A Multidisciplinary Journal* 11, no. 1: 60–72. https://doi.org/10.1207/S15328007SEM1101_5.

Miao, C., R. H. Humphrey, and S. Qian. 2017. "Are the Emotionally Intelligent Good Citizens or Counterproductive? A Meta-Analysis of Emotional Intelligence and Its Relationships With Organizational Citizenship Behavior and Counterproductive Work Behavior." *Personality and Individual Differences* 116: 144–156. https://doi.org/10.1016/j.paid.2017.04.015.

Miao, C., R. H. Humphrey, and S. Qian. 2020. "The Cross-Cultural Moderators of the Influence of Emotional Intelligence on Organizational Citizenship Behavior and Counterproductive Work Behavior." *Human Resource Development Quarterly* 31, no. 2: 213–233.

Merriam-Webster. n.d. "Corporate." Accessed July 28, 2022. https://www.merriam-webster.com/dictionary/corporate.

Mishra, P. S., and A. K. D. Mohapatra. 2010. "Relevance of Emotional Intelligence for Effective Job Performance: An Empirical Study." *Vikalpa: The Journal for Decision Makers* 35, no. 1: 53–61. https://doi.org/10.1177/0256090920100104.

Murphy, A., and H. C. Jeneke. 2010. "The Relationship Between Thinking Styles and Emotional Intelligence: And Exploratory Study." *South Africa Journal of Psychology* 39, no. 3: 357–375. https://doi.org/10.1177/008124630903900310.

Newman, D. A., D. L. Joseph, and C. MacCann. 2010. "Emotional Intelligence and Job Performance: The Importance of Emotion Regulation and Emotional Labor Context." *Industrial and Organizational Psychology: Perspectives on Science and Practice* 3, no. 2: 159–164. https://doi.org/10.1111/j.1754-9434.2010.01218.x.

O'Boyle, E. H., R. H. Humphrey, J. M. Pollack, T. H. Hawver, and P. A. Story. 2011. "The Relation Between Emotional Intelligence and Job Performance: A Meta-Analysis." *Journal of Organizational Behavior* 32, no. 5: 788–818.

Online Etymology Dictionary. n.d. "Corporation." Accessed July 28, 2022. https://www.etymonline.com/search?q=corporation.

Paulhus, D., and P. J. Oliver. 1998. "Egoistic and Moralistic Biases in Self-Perception: The Interplay of Self-Deceptive Styles With Basic Traits and Motives." *Journal of Personality* 66: 1025–1060. https://doi.org/10.1111/1467-6494.00041.

Schyns, B., and J. Schilling. 2013. "How Bad Are the Effects of Bad Leaders? A Meta-Analysis of Destructive Leadership and Its Outcomes." *Leadership Quarterly* 24, no. 1: 138–158. https://doi.org/10.1016/j.leaqua.2012.09.001.

Sedikides, C. 1993. "Assessment, Enhancement, and Verification Determinants of the Self-Evaluation Process." *Journal of Personality and Social Psychology* 65, no. 2: 317–338. https://doi.org/10.1037/0022-3514.65.2.317.

Standish Group International. 2009. *CHAOS Summary 2009: The 10 Laws of Chaos*. West Yarmouth, Massachusetts: Standish Group International.

Streiner, D. L. 2003. "Being Inconsistent About Consistency: When Coefficient Alpha Does and Doesn't Matter." *Journal of Personality Assessment* 80: 217–222. https://doi.org/10.1207/S15327752JPA8003_01.

Van der Linden, D., K. A. Pekaar, A. B. Bakker, et al. 2017. "Overlap Between the General Factor of Personality and Emotional Intelligence: A Meta-Analysis." *Psychological Bulletin* 143, no. 1: 36–52. https://doi.org/10.1037/bul0000078.

Waterhouse, L. 2006. "Inadequate Evidence for Multiple Intelligences, Mozart Effect, and Emotional Intelligence Theories." *Educational Psychologist* 41: 247–255.

Wilke, J. 2014. "A New Mixed Model Measure of Emotional Intelligence." Unpublished doctoral dissertation, California School of Professional Psychology at Alliant International University, San Diego.

Wilke, S., J. Wilke, and D. Viglione. 2015. "The Corporate Family Model of Leadership Development." *Psychologist-Manager Journal* 18, no. 2: 64–76.

Wilke, S., J. Wilke, and D. Viglione. 2018. *The Developing Emotional Competency Questionnaire (DECQ) Technical Manual*. San Diego, CA: LEADon, Inc.

Wolff, S. B. 2005. *The Emotional Competence Inventory (ECI): Technical manual*. Los Angeles, CA: The Hay Group and McClelland Center for Research and Innovation.

Yang, R., V. García Díaz, and C. H. Hsu. 2021. "Use of Emotional Intelligence to Promote Innovation Among Employees in the Work Environment Through Qualitative and Quantitative Analysis." *Aggression and Violent Behavior* 57: 101589. https://doi.org/10.1016/j.avb.2021.101589.