Measured and self-estimated trait emotional intelligence in a UK sample of managers

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ABSTRACT

Trait emotional intelligence (EI) was measured and self-estimated in a UK sample of 128 managers (52.3% female), recruited at a professional services firm. Participants’ measured scores were compared to standardization sample data and gender differences in measured and estimated scores, as well as in estimation bias and accuracy were examined. As hypothesized, managers’ global trait EI scores were significantly higher than those of the normative sample of the measure used, although the scores of female participants were largely responsible for this difference. Gender-specific hypotheses were confirmed for measured scores (differences only hypothesized at the factor level) and estimation accuracy (males estimating their trait EI more accurately), but not for estimated scores (female participants had higher estimates, but the opposite was hypothesized). Further, female managers showed signs of estimation bias.

1. Measured and self-estimated trait emotional intelligence in a UK sample of managers

Management of human capital has been portrayed as one of the major settings for the relevance and application of emotional intelligence (EI). In part, the importance which EI has been ascribed in the managerial world is linked to its marketing potential within this context; the construct is readily sellable in the form of assessments, training programs, and interventions. On the other hand, the occupational demands associated with various types of management draw on the specific characteristics subsumed by the prevailing EI models and measures (e.g., Bar-On, 1997; Petrides, 2009a). Emotion-related qualities seem to be fundamental to professional success and adjustment within this diverse capacity, suggesting that managers may constitute a high EI population.

Although there has been a surge of studies on managerial samples or in managerial contexts, much of this research has treated “EI” as a general concept, rather than considering the two more specific constructs tapped by various measures. Since the construct’s inception and popularization (Goleman, 1995), the field has gradually diverged into two streams of research, focusing on two complementary dimensions termed ability EI and trait EI, respectively. Ability EI concerns emotional-related abilities measured through maximum-performance tasks, whereas trait EI refers to the emotion-related personality dimension assessed through typical-performance measures. It has been argued that any typical-performance measure of EI is most appropriately interpreted through the trait EI lens, independent of the underlying model (Petrides & Furnham, 2001). This assertion and the distinctiveness of the two constructs is supported by non-significant to modest correlations between typical- and maximum-performance EI measures and moderate to strong correlations between measures based on the same method (Van Rooy, Viswesvaran, & Pluta, 2005).

The operationalization-based split into two relatively distinct constructs, which has implications for the interpretation of findings gathered with a given measure, needs to be considered in research with special-interest populations, such as managers. One cannot generalize from one construct (i.e., trait or ability EI) and its operational vehicles to the other, as divergent findings can be expected from the two (Petrides & Furnham, 2001). The focus of the present study is on managers’ trait EI, and a concise review of studies assessing trait EI in managerial samples is provided next.

1.1. Literature review

We retrieved 10 studies in which managers’ EI was assessed with typical-performance measures and, thus, representative of trait EI. The samples used in these studies varied considerably in

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Due to the abundance of research in this area, we focused on studies in which samples were explicitly identified as managers, using relevant search terms. However, managers may have comprised samples of other studies or parts of them, without being specified as managers.
geographic locations and ethnicities (e.g., China, UK, Australia, and Israel), occupational sectors (e.g., CFOs, restaurant franchises, public services, retailers, construction industry) and managerial levels. Seven of the ten studies employed workplace-oriented EI scales (Angelidis & Ibrahim, 2012; Gardner & Stough, 2002; Sy, Tran, & O’Hara, 2006). Unfortunately, these types of EI measures are unlikely to reveal much about managers’ trait EI (relative to the general population), since they were standardized on samples comprising managers, leaders, or people in similar roles. Therefore, we restrict our focus on the results gathered with general-population scales.

Different general EI scales were used in three studies. The Trait Meta-Mood Scale (TMMS; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995) was administered to an Australian female-only sample of managers from various industries (Downey, Papageorgiou, & Stough, 2006). Sample scale means were 3.94 for Attention (SD = 0.57), 4.22 for Clarity (SD = 0.57), and 4.23 (SD = 0.58) for Repair. In comparison, a sample of undergraduate students had scale means of 4.10 (SD = 0.52) for Attention, 3.27 (SD = 0.70) for Clarity, and 3.59 (SD = 0.90) for Repair (Salovey, Stroud, Woolery, & Epel, 2002). The Bar-On (1997) Emotional Quotient Inventory was administered to a sample of 191 middle managers (line managers; 68% male) working for a major UK retailer (Slaski & Cartwright, 2002). The overall EI sample mean of 94.4 (SD = 12.5) was lower than the normative sample mean of 100. Moreover, Schutte et al. (1998) Assessing Emotions Scale was completed by a sample of 98 senior managers (89% male) employed as CFOs in local government authorities in Israel (Carmeli, 2003). The sample mean was 3.71 (SD = 0.37), which was above the normative sample means for women (M = 3.45, SD = 0.46) and very similar to that of men (M = 3.78, SD = .50).

The number of relevant studies is too sparse and their findings insufficiently consistent to suggest that managers are particularly high in trait EI. Important, the samples used in these studies varied widely in occupational sectors and managerial levels, making it difficult to tease apart the effects of management and work-domain. Another limitation concerns the use of different measures varying in subscales, with one (the Trait Meta-Mood Scale) comprising three weakly interrelated factors. A benchmark measure of trait EI, the Trait Emotional Intelligence Questionnaire, was used in one managerial context (Mikolajczak, Balon, Rusi, & Kotsou, 2012), but no sample means were reported in this study. Furthermore, studies on managerial samples have tended to neglect the role of gender, despite its importance in EI research (e.g., Siegling, Saklofske, Vesely, & Nordstokke, 2012).

Another pertinent factor not previously considered is managers’ holistic self-evaluation of their emotional adjustment. Self-perceptions are important for several reasons and have been studied for some time, particularly in the context of IQ and performance. It is conceivable that they have a profound influence on the kind of tasks people engage in or avoid, and on the kind of careers pursued. Further, positive self-perceptions are linked to mental health, in contrast to negative self-evaluations, which are linked to negative affect and depression (Petrides & Furnham, 2000). Although previous research has examined EI self-perceptions in university students, with a particular focus on gender differences (Petrides & Furnham, 2000; Petrides, Furnham, & Martin, 2004), self-perceptions of managers may differ in myriad ways from university samples in terms of perception accuracy, bias, and gender differences.

1.2. Present study

This study examined the trait EI profiles of a general managerial sample comprising of managers from different levels and not tied to any specific type of service. Participants’ trait EI scores were examined for gender differences and compared to normative sample data. Departing from the bulk of management-related studies, in which trait EI was assessed with workplace-oriented scales, this study used the Trait Emotional Intelligence Questionnaire (TEIQue), a scale designed to measure the construct comprehensively in the general population. We also examined managers’ overall self-estimates of trait EI, focusing on gender differences, estimation bias, and estimation accuracy. These self-perceptions were referenced against the TEIQue model to facilitate direct comparison with the measured trait EI scores. The following hypotheses were tested:

H1: Participants’ measured trait EI scores will be higher than those of the normative sample of the TEIQue. Although our review of the literature did not yield conclusive evidence, this hypothesis is based on the particular importance of emotional resilience and socioemotional functioning in the managerial world. The argument is that emotionally resilient people are more likely to be selected for, or to advance to managerial positions.

H2a: There will be no gender difference in managers’ global trait EI scores. Although the normative sample mean is significantly higher for males (Petrides, 2009b), gender differences were not apparent in other samples (e.g., Siegling et al., 2012) and female managers may be particularly well adjusted compared to women in the general population. However, as has been quite reliably found, we also hypothesized, H2b: Male managers will score higher on the Self-Control factor than female managers, who will be higher on the Emotionality factor.

H3: Male managers will have significantly higher estimated global trait EI scores than female managers when controlling for measured scores, consistent with previous findings from participants recruited at British universities (Petrides & Furnham, 2000). This hypothesis also reflects self-enhancing and self-degrading biases in men and women, respectively, which have been demonstrated for self-evaluations more generally.

H4: Male managers will have more accurate estimates than female managers, also based on previous findings in British university students (Petrides & Furnham, 2000).

2. Method

2.1. Participants and Procedure

We invited 339 managers from senior, middle, and junior levels at a large professional services firm to participate in this study. Of this group, 128 (37.8%) managers with a mean age of 38.0 years (SD = 7.5, age range: 26–59 years) participated (three participants [2 male, 1 female] did not indicate their age). The gender split amongst the participants was almost equal (52.3% female), but the representation of the three managerial levels was uneven; the majority came from middle management (n = 79, 50.6% female), whereas similar sample proportions were senior (n = 27, 40.7% female) and junior managers (n = 22, 72.7% female). The mean ages of male and female participants were 39.1 years (SD = 7.9) and 36.9 years (SD = 7.1), respectively.

The average length of time worked at the firm was 6.2 years (SD = 6.0) for the overall sample, 6.7 years (SD = 6.9) for male managers, and 5.8 years (SD = 5.0) for female managers. The majority of respondents (78.1%) indicated their ethnic background as Caucasian, others as Black, Asian, and Indian/Pakistani. Educational backgrounds in terms of the highest level of education attained varied considerably: 2.5% GCSEs/O-levels, 15.6% A-levels or similar, 53.9% BA/BSc or similar, 21.1% MA/MSc or similar, and 2.3% MBA (six participants did not indicate their highest level of education). After providing demographic and background information, trait EI was assessed and self-estimated. The study was conducted anonymously online.
2.2 Measures

2.2.1 Trait EI
The short form of the TEIQue (Petrides, 2009a) was sufficient for the purpose of this study. It contains 30 items from the full form (two items represent each of 15 facets) and can be used to measure global trait EI and the four factors derived from the full form: Emotionality, Self-Control, Sociability, and Well-Being. Respondents complete the items on a 7-point Likert scale, ranging from 1 (completely disagree) to 7 (completely agree). The internal consistencies in the present study were acceptable and consistent with those reported for the standardization sample (Petrides, 2009a). Specifically, Cronbach’s alphas were .91 for global trait EI, .85 for Well-Being, .70 for Self-Control, .73 for Emotionality, and .78 for Sociability.

2.2.2 Estimated trait EI
Participants gave overall self-estimates for global trait EI and each of the four TEIQue factors. Definitions of the four factors, as shown in Petrides (2009b), were presented to the participants. As a description of global trait EI, participants were shown a visual illustration of the trait EI model integrating its four factors and 15 facets (see Fig. 1). Upon referencing these descriptions, they were asked to give their estimate for each of the factors and global trait EI on a scale ranging from 1 (extremely low) to 21 (extremely high). This range was considered adequate to yield sufficient variability in responses and precision in estimating one’s trait EI. Prior to statistical analysis, these estimates were divided by three to make them directly comparable to the measured TEIQue scores.

2.3 Statistical analyses
Relationships amongst age, gender, and managerial level, as well as correlations of age with measured and estimated trait EI were examined to identify potential confounds. Measured trait EI scores were compared to the normative data (both general and gender-specific), as reported in Petrides (2009a), using one-sample t tests. Participants’ trait EI profiles and the role of gender in trait EI scores were examined using ANCOVA, controlling for any identified confounds. When examining gender differences in estimated scores, measured scores as well as any confounding variables were controlled.

ANCOVAs, again controlling for any confounds, were executed to examine any bias towards over- or under-estimation of trait EI scores. Specifically, measured and estimated trait EI scores were compared for the overall sample and for each gender. Correlations between estimated and measured scores, also computed separately for the overall sample and each gender, were examined as an indicator of estimation accuracy. Accuracy was then compared between female and male managers using Steiger’s Z statistic.

3. Results

3.1 Preliminary analyses

With missing responses highlighted to the participants electronically (without forcing responses), there were no missing data points. The mean ages of male and female participants were similar, \( t(123) = 1.68, p = .10 \), whereas ages increased significantly across managerial levels, \( F(2,122) = 15.00, p < .0001 \). Participant age also correlated with measured global trait EI, \( r(125) = .21, p = .02 \), and its Self-Control factor, \( r(125) = .23, p = .009 \), but with none of the self-estimates (\( p > .05 \)). Thus, we aimed to control for age in the main analyses. A qui-square test examining the relationship between managerial level and gender did not reach significance, \( \chi^2(2, N = 128) = 5.21, p = .07 \), indicating that managerial level would be an unlikely confound.

3.2 Trait EI profiles

Table 1 shows descriptive statistics for measured and estimated trait EI scores for the overall sample and each gender. One-sample t tests showed that the overall sample had significantly higher scores than the standardization sample on global trait EI, \( t(127) = 4.06, p < .0001 \), Self-Control, \( t(127) = 3.59, p < .001 \), and Well-Being, \( t(127) = 3.20, p < .01 \). Concerning gender-specific norms, there were no significant discrepancies between male managers’ measured trait EI scores and those of the standardization sample. However, female managers’ scores were significantly higher than the standardization sample scores on global trait EI.
We first examined if there were gender differences on any of the estimates for global trait EI or Sociability. One-way between-design ANCOVAs controlling for age and the corresponding measured trait EI score revealed significant differences on estimates of both global trait EI, \( F(1, 121) = 13.06, p < .001, \) partial \( \eta^2 = .10, \) and Sociability, \( F(1, 121) = 10.01, p < .01, \) partial \( \eta^2 = .08. \) Thus, female participants had significantly higher estimates on global trait EI and on the Sociability factor.

To probe these interactions further, we examined if any of the estimated global trait EI or Sociability scores of each gender differed significantly from the corresponding measured scores. One-way within-design ANCOVAs, controlling for age, only revealed a significant difference between female managers’ estimated and measured global trait EI scores, indicative of an over-estimation bias, \( F(1, 64) = 4.37, p = .04, \) partial \( \eta^2 = .06. \) However, this difference did not hold up following adjustment for multiple comparisons.

### 3.4. Estimation accuracy

Table 1 also shows the correlations between participants’ measured and estimated trait EI scores. The correlations were consistently significant and within a moderate to strong range. However, the magnitude of correlations is indicative of systematic differences in estimation accuracy across factors (as each pair of scores is different with no score used in more than a single pair, it seems inappropriate to compare them statistically). The strength of estimation accuracies across factors (from strongest to weakest) were in the following order: Well-Being, Self-Control, Emotional-Social, and Sociability.

A pattern that emerges from the gender-specific correlations is that men’s measured and estimated trait EI scores were consistently more highly associated than those of women, despite the slightly smaller number of male participants. However, the only significant gender difference in these correlations was on global trait EI, \( Z = 2.63, p < .01. \) The difference in associations on the Sociability factor was also significant, \( Z = 1.70, p < .05, \) but it did not hold up after applying Bonferroni’s correction. Thus, male managers estimated their global trait EI more accurately than female managers.

### 4. Discussion

The results support H1, which was based on the notion that managers constitute a high trait EI population. Conceptually, trait

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**Table 1** Descriptive statistics and correlations between measured and estimated trait EI scores for the overall sample and each gender.

<table>
<thead>
<tr>
<th>Group</th>
<th>Trait EI factor</th>
<th>M (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Well-Being</td>
</tr>
<tr>
<td>Total (N = 128)</td>
<td></td>
<td>5.14 (.67)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.21 (.86)</td>
</tr>
<tr>
<td>Measured</td>
<td></td>
<td>5.10 (.71)</td>
</tr>
<tr>
<td>Estimated</td>
<td></td>
<td>4.95 (.96)</td>
</tr>
<tr>
<td>Men (n = 61)</td>
<td></td>
<td>5.18 (.63)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5.44 (.69)</td>
</tr>
<tr>
<td>Women (n = 67)</td>
<td></td>
<td>0.63</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.76</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.48</td>
</tr>
<tr>
<td>Total (N = 128)</td>
<td></td>
<td>Pearson’s r</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.63</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.76</td>
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<td></td>
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<td>0.48</td>
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</tbody>
</table>
| Note: Both measured and estimated trait EI scores range on a scale from 1 (indicating low trait EI) to 7 (indicating high trait EI). All correlations are significant at the .001 level. EI = emotional intelligence.
EI is particularly relevant to the occupational demands shared by managers from all kinds of backgrounds (e.g., demonstrating composure in high-stress periods, dealing effectively with employee turmoil, being responsive to employees’ needs). The overall sample mean (for global trait EI and two factors) was above the normative average, but gender-focused analyses showed that only female managers were above the gender-specific normative data for either global trait EI or particular factors. While the differences for male managers may well be significant in larger samples, the fact that it they were more pronounced, and only significant for female managers may hold key implications, subject to consistent replication in further research.

Consistent with H2a, male and female managers did not differ on global trait EI. Although the standardization sample mean is significantly higher for men, this finding supports our reasoning that women who are high in trait EI are more likely to advance to, and be considered for managerial positions. The fact that only female managers were above the gender-specific standardization-sample mean for global trait EI and three factors lends further support to this idea. H2b was partially supported, since female managers were higher on the Emotionality factor than male managers, as previously reported for university samples (Petrides, 2009a; Siegling et al., 2012). Previous research within the university population has also shown that men tend to score higher on the Self-Control factor, but this difference did not replicate in our managerial sample. Relative to previous findings, it appears that the Self-Control factor, in particular, contributed to the non-significant gender difference at the global construct level.

Contrary to H3, which derived from previous findings on university students and more general gender differences in self-perceptions (see Petrides & Furnham, 2000, for a discussion), female managers had significantly higher overall estimates than male managers. Yet, the results are consistent with the findings from another study, in which measured scores were unadjusted (Petrides et al., 2004)—in comparing the results of these studies, including ours, it is also important to consider differences in the measurement of measured and self-estimated scores. Follow-up analyses revealed a trend towards overestimation on the part of female managers, whereas male managers’ self-estimates were aligned with their measured scores. Thus, where trait EI is concerned, our results are indicative of a self-enhancing bias in female managers and a lack of bias in male managers. As we had no hypotheses for any gender-related estimation biases, however, this particular result, which strictly speaking was not significant after adjusting for multiple comparisons, needs to be replicated in comparable samples.

Our last hypothesis (H4), which concerned gender differences in estimation accuracy, was supported by the data. Male managers’ estimates of global trait EI were more accurate than those of their female counterparts, consistent with previous research in university students (Petrides & Furnham, 2000). Our results speak to the external validity of this gender difference, which was replicated in a special-interest population and by means of different measures of both measured and estimated trait EI than those used in Petrides and Furnham’s (2000) study. The higher correlations in the present study are presumably an effect of deriving estimates with reference to the same model as the one underlying the measured scores.

The findings surrounding participants’ measured trait EI have potential key implications for understanding the role of this personality dimension in management. Most generally, they suggest that emotion-related personality traits play a central role in the selection and advancement of managers. They also suggest that, of those who pursue management-related careers, trait EI may be particularly instrumental for women, relative to the female standardization sample. That said, we are neither in a position nor willing to argue that trait EI is more important for women to function in managerial contexts, as is indicated by the non-significant gender difference in global trait EI. Rather, high trait EI women are more likely to end up in management than women with average trait EI levels, whereas this does not seem to be the case for men.

Holistic self-perceptions are important in that they influence the kind of tasks people prefer, the career choices they make, and how far they are willing to push themselves. It is possible that the threshold of emotion-related self-evaluations necessary for seeking managerial positions is particularly high for women; only women who are above average in their emotional self-perceptions may pursue managerial careers. It has also been noted that positive self-perceptions are conducive to mental health, and negative self-evaluations to psychological distress (Petrides & Furnham, 2000). Inflated self-perceptions may be adaptive to the extent that they do not mislead people into tasks, projects, or even careers that exceed their actual capacities considerably. To that extent, high self-perceptions can help people perceive the demands of their occupation as less threatening or stressful. As female managers had higher self-estimates than male managers, despite having similar measured trait EI scores, they may approach various situations more confidently and be somewhat less vulnerable to job-induced psychological problems, such as burnout.

It is important to acknowledge that other factors cannot be ruled out as explanations for the above-average trait EI scores found in this managerial sample. While the ethnic compositions were similar and both samples were based in the UK, the average age of the standardization sample is about eight years younger and it is not representative of the general workforce. Nevertheless, a different article in this issued showed that trait EI distinguished between leaders and non-leaders employed by the same company, even after controlling for age and other control variables (Siegling, Nielsen, & Petrides, in press). A second limitation to be addressed in future research is that both measured and estimated trait EI were based on self-report. Consequently, some of the variance in both variables was likely influenced by participants’ self-perceptions, suggesting that our results provide an overstatement of estimation accuracy. A way to circumvent this problem is to measure trait EI with one of the available 360 forms (i.e., through peer or close-other ratings).

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References


