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The bandwidth dilemma applied to trait emotional intelligence: Comparing the contribution of emotional intelligence factor with its facets for predicting global job satisfaction

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Abstract
Building upon the relevance of emotional intelligence (EI) in influencing key attitudes at work, the current study aimed to compare the contribution of the trait-EI factor with its specific facets for predicting overall job satisfaction. Relying on a concurrent design, results from a sample of 228 software engineers from a multi-national firm showed that trait-EI global factor remained a significant and non-redundant predictor of this attitudinal criterion, even when the big five are also taken into consideration. Results also revealed that corresponding facets of self-emotions appraisal, other-emotions appraisal, use of emotion, and regulation of emotion, when residualized (i.e., their factor variance is partialed out), do not outperform the contribution of the higher-order trait-EI factor and the big five in the prediction of overall job satisfaction. Theoretical and practical implications of these results are discussed.

Keywords Emotional intelligence · Trait-EI · Job satisfaction · Bandwidth dilemma

Introduction

Emotional intelligence (EI) has raised a substantial amount of interest in the scope of research about the role of individual differences in shaping behaviors and attitudes at work (Lievens and Chan 2017; Sackett et al. 2017). Since its inception in the literature, commonly credited to Salovey and Mayer (1990), as the ability to deal effectively with emotions and emotional knowledge, EI has received great acceptance from business management practitioners as one of the most promising predictors of job performance (Goleman 1998).

In contrast, early scientific research developments caused vivid debate regarding the theoretical and applied value of EI for understanding and predicting human behavior in the workplace. This debate was fueled by various early concerns regarding its lack of theoretical clarity, related measurement issues, and potential conceptual redundancy with well-established performance predictors, such as cognitive ability and personality (Locke 2005; Matthews et al. 2002; Van Rooy et al. 2010).

Notwithstanding, more recent meta-analyses have shown that EI constitutes a valid predictor of individual job performance (Joseph and Newman 2010; O'Boyle Jr. et al. 2010) and of some of its key behavioral dimensions, like organizational citizenship behaviors and counterproductivity (e.g., Miao et al. 2017a). Concomitantly, primary and meta-analytic research has also revealed that EI measures may be among the most promising individual predictors of job satisfaction, given their sizeable links with this key job attitude (Miao et al. 2017b).

In spite of these developments, previous research has been predominantly focused on the criterion-related validity of the EI global factor, leaving largely unexplored the question of whether specific EI dimensions or facets might vary in prominence, or even outperform the factor, when predicting critical work-related criteria, like job performance and job satisfaction (Carmeli and Josman 2006; Greenidge et al. 2014). At its core, addressing such a research question implies the examination of what is commonly known as the bandwidth-dilemma paradox or the bandwidth-fidelity dilemma. Despite remaining behind some of the most stimulating debates in recent research about the validity of key individual differences constructs, this

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dilemma has a long and vivid tradition in the literature (Judge and Kammeyer-Mueller 2012; Steel et al. 2018). Cronbach and Gleser (1957) were the first researchers to address this matter and to discuss its major implications for psychological testing and validity. According to these authors, there is an inherent compromise, or trade-off, between the bandwidth of a given measure and its fidelity or precision. When applying the bandwidth-fidelity dilemma to a given predictor-criterion relationship, the authors reasoned that whereas broad predictor measures can attain moderate validity, maximum validity demands a closer degree of fidelity between the predictor and the criterion, implying that a narrow predictor will capture the particularities of a specific criterion more effectively.

Since then, the bandwidth-fidelity dilemma assumptions regarding the extent to which higher-order (broader) versus lower-order (narrower) predictor constructs yield the best prediction of work-related criteria, especially of job performance, have been intensely studied and debated in the frame of well-established individual's predictors, such as cognitive ability and personality factors (e.g., Ree et al. 1994; Ones and Viswesvaran 1996; and Salgado 2017, for a review). Nonetheless, to the best of our knowledge, the bandwidth-fidelity dilemma remains unexplored as applied to EI.

Still, such an examination raises important applied implications for EI assessment and related decision-making purposes, irrespective of the specific EI approach followed, since it allows a diagnosis of whether to use the global EI-factor or, alternatively, to rely on the level of EI specific facets to grant greater prediction of a given criterion. Furthermore, scrutinizing this question also raises significant theoretical implications, as it allows a diagnosis of whether to consider specific conceptual elements encompassed in EI facets along with the global factor for efforts towards developing theory regarding the determinants of critical organizational behavior variables, like work performance and job satisfaction.

A comprehensive examination of this matter, when adopting job satisfaction criteria, requires an analysis of which level of EI predictor breadth (i.e., EI broad factor or its narrow facets) warrants a stronger prediction of a broader criterion of global job satisfaction, but also scrutiny of which breadth of EI measurement yields higher validity in predicting narrower job satisfaction facets. As one of the first attempts to address the bandwidth-fidelity dilemma in the scope of EI, the current study is focused on the former, by comparing the contribution of a global EI-factor and its specific facets for predicting overall job satisfaction.

This study has adopted this criterion not solely due to the underdevelopment of research on the validity and mostly on the incremental validity of EI for its prediction, especially when compared with the large number of studies using performance criteria, but also given the prominence of job satisfaction for both the worker and the organization (Judge and Kammeyer-Mueller 2011). Besides its intrinsic worth for workers, as a key dimension of life satisfaction which in turn is part of individual subjective well-being (Judge and Klinger 2008; Steel et al. 2018), this job attitude is, likewise, paramount for organizations due to its positive influence on important outcomes such job performance (Bowling et al. 2015; Judge et al. 2001; Riketta 2008).

Since EI research relies on multiple conceptualizations and non-equivalent measurement approaches (see Ashkanasy and Daus 2005, for the distinction between EI research streams) it is worth clarifying that this study follows a trait-EI conceptualization consistent with Mayer and Salovey's (1997) EI definition and related theoretical dimensions. More specifically, it adopts the four trait-EI facets proposed by Davies et al.' (1998) literature review, further studied by Wong, Law and colleagues (e.g., Law et al. 2004; Wong and Law 2002), including self-emotions appraisal, others-emotions appraisal, use of emotion and regulation of emotion. Unlike the ability-EI approach, which posits this construct as a set of cognitive abilities (i.e., branches, assessed through performance-based tests) for processing emotional knowledge and dealing with emotion-related problems (Mayer and Salovey 1997), trait-EI conceives it as the individual perception (assessed through self-report) about one's own abilities to perceive, understand, regulate and use emotions to adapt to the environment and enhance well-being (Lievens and Chan 2017; Petrides et al. 2016).

To allow a more accurate examination of the bandwidth-fidelity dilemma applied to EI-job satisfaction links, the contribution of the big five personality factors was also examined and controlled. In addition to their relationships with EI, especially for trait-EI, some of the big five represent meaningful predictors of job satisfaction (e.g., Bruk-Lee et al. 2009; Judge et al. 2002; Steel et al. 2018). Nonetheless, according to our literature review, research accounting for the effects of personality factors when analyzing EI criterion-related validity for predicting job satisfaction remains very scarce.

Bandwidth-Fidelity Dilemma Applied to EI on the Prediction of Job Satisfaction

As posited by the dispositional approach (see Staw and Cohen-Charash 2005, for a review), individual dispositions effectively matter in the degree to which individuals experience job satisfaction, i.e. a pleasurable or positive emotional state as a consequence of the appraisal of their job experiences (Locke 1976). Consistently, cumulative empirical reviews have uncovered meaningful correlates between personality dispositions, mapped within the big five taxonomy, and this core job attitude (Bruk-Lee et al. 2009; Judge et al. 2002; Steel et al. 2018).

Moreover, recent meta-analytic evidence also suggests that measures of global EI, including those drawing upon the trait-EI conceptualization, represent significant and generalized

predictors of job satisfaction, due to its positive and meaningful links with job satisfaction across employee age, tenure and job levels (Miao et al. 2017b). Particularly for trait-EI, such findings suggest that individuals who appraise their effectiveness in perceiving, understanding and regulating emotions more favorably tend to experience improved levels of job satisfaction. Accordingly, high-EI individuals are posited to display positive moods more often and cope better with stressful and negative work events, mitigating their detrimental effects and adopting a more optimistic outlook when appraising their job experiences (Greenidge et al. 2014; Kafetsios and Zampetakis 2008).

As it stands for self-emotions appraisal, others-emotions appraisal, use of emotion and regulation of emotion respective trait-EI facets, despite the non-existence of meta-analytic estimates at this level, initial evidence from primary research, in addition to revealing a positive pattern of relationships of these facets with job satisfaction, also suggests that they might play distinct roles in enacting positive levels of individual satisfaction at work. Whereas regulation of emotion, i.e. the effectiveness of inducting positive states and modulating own and other's emotions, might affect job satisfaction through interpersonal mechanisms by enhancing social work interactions, the accurate appraisal of emotions (i.e., self-emotions appraisal and others-emotions appraisal facets) and the use of emotion to facilitate individual performance (i.e., use of emotion facet), might impact on job satisfaction via intrapersonal mechanisms, linked with improved performance levels (Greenidge et al. 2014; Kafetsios and Zampetakis 2008; Wong and Law 2002).

Yet, while prior research has supported the positive effect of both EI global trait and respective facets on job satisfaction, less attention has been paid to the comparison of their specific contributions for the prediction of this work-related attitude, leaving the bandwidth-fidelity dilemma practically unaddressed at this level.

In the discussion of the bandwidth-fidelity dilemma with respect to job attitudes, Hulin (1991) has contended that maximum empirical prediction demands matching the level of specificity of predictor with the criterion, implying that broad attitudes will be better predicted by global predictors. Building upon these developments, Judge and Kammeyer-Mueller (2012) further recommended researchers to rely on broad psychological constructs when the intent is to develop broad theoretical generalizations, while narrow psychological constructs will be more suited for theoretical development purposes which are context-specific.

Thus, transposing these recommendations for the bandwidth-fidelity dilemma regarding the predictive value of EI measures towards job satisfaction, it seems plausible to expect that EI facets will not outperform the trait-EI global factor when the aim is to predict a broad attitudinal criterion, i.e. overall job satisfaction, as well as explaining how trait-EI might impact on job satisfaction across jobs. Therefore, we hypothesize that trait-EI facets of will show no incremental validity over the EI global factor for predicting overall job satisfaction.

To test this hypothesis, we took into account two relevant and interconnected contributions from previous research about the bandwidth-fidelity dilemma applied to other dispositional predictors, namely the big five. Even though their full discussion is beyond the scope of this paper, a brief mention is merited due to their important implications for related research. One such contribution stems from Judge and Kammeyer-Mueller's (2012) recommendation of using a hierarchical representation of the predictor when feasible. According to these authors, relying upon this representation warrants a more integrative approach when examining the bandwidth-fidelity dilemma, since it allows the estimation and comparison of criteria-related validity of both the broad (second-order) reflective factor and of its (first-order) dimensions or facets. Adopting such models when viable, in addition to better capturing the completeness and complexity of the predictor, also leave the possibility open for theoretical and empirical enquiry that narrower facets might possess specific variance that could offer increased validity for predicting criteria (Judge and Kammeyer-Mueller 2012). This possibility is viable for trait-EI since previous evidence regarding some trait-EI measures, i.e. those consistent with Mayer and Salovey's (1997) EI definition, suggest the feasibility of such a hierarchical representation of respective trait-EI constructs (Kafetsios and Zampetakis 2008; Law et al. 2004; Iliceto and Fino 2017).

However, Judge and Kammeyer-Mueller (2012) have also highlighted that, as the "general factor is, by design, often highly correlated with the dimensions themselves for hierarchical constructs, this makes it challenging to isolate unique variance" (p. 169). Indeed, this is also the case for trait-EI, which calls into consideration an inter-related contribution made by Salgado et al. (2015) in the scope of the bandwidth-fidelity dilemma applied to links between big five and performance. According to these authors, such isolation of common variance (factor variance) from specific variance (facet variance) when addressing the bandwidth-fidelity dilemma is critical in accurately examining whether the validity yielded by the respective facets is due to the common factor variance that they encompass, rather than by its specific and idiosyncratic variance.

These authors further highlighted that this question was not fully addressed in previous research on the bandwidth-fidelity dilemma, entailing an important limitation that can help to explain the mixed findings obtained for personality-performance links, since some research supports the superiority of personality facets to predict narrow and broad performance criteria (e.g., Ashton et al. 2014; Judge et al. 2013), whereas other studies indicate that global factors hold stronger

predictive power (e.g., Ones and Viswesvaran 1996; Salgado et al. 2013; Salgado et al. 2015). By developing a method to perform such separation and derive residualized facets (i.e., partialing out their common factor variance) Salgado et al. (2015) have shown that personality facets do not show incremental validity over the big five global factors for predicting academic and job performance, regardless of the breadth of these criteria.

Method

Participants and Procedure

This study was conducted with a sample of engineers, pertaining to a single job of software project engineering from a multinational information technology firm. Organized in small semi-autonomous teams, their main duties included software coding, testing quality assurance and project management. Following a concurrent design, all 305 software engineers were invited to complete an on-line survey, during regular working hours, including the measures of trait-EI and job satisfaction. The main research goals were explained and their informed consent was requested, warranting confidentiality and use of their answers for research purposes only. Complete data was obtained for 228 incumbents, corresponding to a response rate of approximately 75%. The majority of the participants were male (94%), aged 31.21 years on average ($SD = 5.08$) and had a mean of 3.79 years ($SD = 2.42$) of organizational tenure.

Measures

Emotional intelligence was measured through the Wong and Law self-report Emotional Intelligence Scale (WLEIS, Wong and Law 2002), especially designed for EI assessment in the workplace. Composed by 16 items, this scale evaluates the four EI dimensions formerly identified by Davies et al. (1998) including *self-emotions appraisal*, *other's emotions appraisal, use of emotion* and *regulation of emotion*. Each dimension is assessed with four items including "I have good understanding of my own emotions" for *self-emotions appraisal*; "I am a good observer of others' emotions" for *other's emotions appraisal*; "I always tell myself I am a competent person" for *use of emotion* and "I am quite capable of controlling my own emotions" for *regulation of emotion*. All items were provided with a 5-point Likert response scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*).

The total score on the scale is purported to represent a meaningful higher-order EI global factor, reflective of these four subdimensions. Prior research has provided evidence supporting this hierarchical representation of trait-EI as measured by the WLEIS (Iliceto and Fino 2017; Kafetsios and Zampetakis 2008; Law et al. 2004). Consistently, results from confirmatory factor analyses with the current sample revealed that this second-order (hierarchical) model yields a reasonably good fit level to the data (χ^2 [100, $N = 228$] = 177.31, $p < .001$; CFI = .947; RMSEA = .058; SRMR = .059). Cronbach's alphas were .82 for global EI, .83 for *self-emotions appraisal*, .79 for *other's emotions appraisal*, .72 for *use of emotion* and .85 for *regulation of emotion*.

Job satisfaction was measured using the 5-item version from Brayfield and Rothe's (1951) scale, commonly used in research related to overall job satisfaction. An example item is "I feel fairly satisfied with my present job". Responses were obtained using a 5-point Likert scale where 1 = *strongly disagree* and 5 = *strongly agree*. Previous research has supported the appropriateness of its psychometric characteristics (see Judge and Klinger 2008, for a review). Cronbach's alpha was .79.

Control Variables To control for the big five personality factors, Saucier's 40-item Mini-Markers (Saucier 1994) was used. Each employee in our sample rated how accurately each item described himself using a 5-point Likert scale, ranging from 1 (*extremely inaccurate*) to 5 (*extremely accurate*). Cronbach's alphas were .88 for emotional stability, .74 for openness to experience, .77 for extraversion, .80 for conscientiousness, and .68 for agreeableness.

Analytic Strategy

As previously highlighted, in order to test the bandwidth-fidelity dilemma applied to EI more accurately, respective facets should be residualized, i.e. factor variance (common variance) must be separated from facet variance (specific variance). To perform such residualization we followed the multi-step procedure adopted by Salgado and colleagues in their research about the bandwidth-fidelity dilemma on the links between personality and job performance (i.e., Salgado et al. 2013; Salgado et al. 2015), consisting of using hierarchical factor analysis followed by a Schmid and Leiman 1957transformation.

Accordingly, in the first step, a first-order factor analysis with oblique rotation was conducted on the WLEIS data. This step was implemented to estimate respective trait-EI four facet scores. The next step consisted of carrying out a second-order factor analysis using these facets' scores as indicators. This second step was conducted in order to provide an estimate of the trait-EI factor. As expected, this analysis uncovered a second-order factor corresponding to the higher-order trait-EI construct. Correspondent trait-EI factor scores were saved and used as the estimate of trait-EI factor in subsequent criteria-related and incremental validity analyses. In the third step, a set of regression analyses was used, entering each of the four first-order factors as the dependent variable and the second-

order trait-EI factor as the independent variable. This step was required to separate the unique variance of facets from trait-EI factor variance. Specifically, the residualized scores obtained from these analyses contain only specific variance of the facets and were therefore used as estimates of trait-EI residualized facets in further validity analyses.

Lastly, to test the hypothesis under study, a set of hierarchical regression analyses was implemented to estimate the incremental validity of residualized facets over the global trait-EI factor score, controlling for the big five. Hence, after entering the big five, which emerged as independent predictors of overall job satisfaction, the trait-EI factor score was entered in the second step of the regression analysis. Residualized facets entered in the third step (altogether by creating a linear composite) to access whether their specific variance will account for a relevant increment of explained variance, over and beyond trait-EI higher-order factor, on job satisfaction.

Results

Table 1 displays the means, standard deviations and correlations between all variables under study. As shown, the big five factors of extraversion and agreeableness were positively related to job satisfaction in the present sample. As expected, global trait-EI also established a positive and significant link with this criterion. The obtained validity coefficient for job satisfaction, when corrected for measurement error (r_{xy} = .31, 95% confidence interval: .13–.42), was close to analogous meta-analytic estimates reported by Miao et al. (2017b) for the corresponding relationship between self-reported EI and job satisfaction for non-managerial jobs (ρ = .33, k = 41, N = 13,929) and for male-dominated samples (ρ = .34, k = 28, N = 7270). With respect to EI facets, all were positively correlated with job satisfaction, yet other's emotions appraisal and regulation of emotion corresponding relationships were of low magnitude, while for other's emotions appraisal the correspondent link was only marginally significant.

Table 2 shows the criteria-related validity coefficients of trait-EI higher-order factor score and of the correspondent four residualized facets (i.e., SEAr, OEAr, UOEr and ROEr) estimated through the procedure previously described. As shown, when facets contained specific variance only (i.e., are completely independent from the trait-EI factor), their relationships are approximately zero with the criterion under analysis. The sign of some coefficients turns negative, depicting a very similar pattern of results to those reported by Salgado et al. (2013), when assessing the validity of the residualized facets of conscientiousness to predict task performance. The only exception occurs for use of emotion, which remains positively related with job satisfaction, but the corresponding validity coefficient was of weak magnitude.

The main results from hierarchical regression analyses carried out to test the hypothesis under study by assessing the incremental validity of residualized facets over the trait-EI factor are reported in Table 3. As can be observed, after considering the variance of job satisfaction accounted for by the big five which emerged as valid predictors, i.e. extraversion and agreeableness, the trait-EI factor further accounts for approximately 3% of variance of this criterion in this sample

Table 1 Means, standard deviations and intercorrelations between trait-EI, its facets, and job satisfaction

Variable	*M*	*SD*	Sex[a]	Age	Tenure	ES	EX	C	A	OP	EI	SEA	OEA	UOE	ROE	SAT
Sex[a]	1.06	0.24	–													
Age	31.21	5.08	−.04	–												
Tenure	3.79	2.42	.04	.26***	–											
ES	3.62	0.69	−.06	.04	−.14*	–										
EX	3.63	0.59	.03	.04	−.08	−.01	–									
C	4.00	0.45	−.02	.03	.15*	.15*	.22***	–								
A	3.86	0.42	.04	−.03	−.01	.24***	.11+	.23***	–							
OP	3.45	0.48	−.17*	−.04	−.04	−.05	.31***	.26***	.17*	–						
EI	3.79	0.40	.06	.03	.03	.35***	.28***	.22**	.25***	.20**	–					
SEA	4.01	0.59	.04	.06	.08	.22**	.23**	.09	.20**	.16*	.75***	–				
OEA	3.67	0.57	.12+	−.02	.04	.04	.27***	.05	.22**	.16*	.61***	.37***	–			
UOE	3.81	0.61	.06	.04	.05	.04	.33***	.29**	.10	.16*	.62***	.28***	.17*	–		
ROE	3.69	0.66	−.05	−.01	−.08	.59***	−.06	.14*	.15*	.06	.64***	.32***	.11	.17*	–	
SAT	3.51	0.67	−.05	−.03	.05	.07	.23***	−.01	.18**	−.09	.25***	.16*	.12+	.23**	.13*	–

Notes. N = 228. [a] Male = 1, Female = 2. ES = emotional stability, EX = extraversion, C = conscientiousness, A = agreeableness, OP = openness, EI = trait emotional intelligence, SEA = self-emotions appraisal, OEA = others-emotions appraisal, UOE = use of emotion, ROE = regulation of emotion, SAT = job satisfaction. $^{+}p < .10$. $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$

Table 2 Intercorrelations between trait-EI high-order factor, its residualized facets and job satisfaction

Variable	*M*	*SD*	EI_f	SEAr	OEAr	UOEr	ROEr	SAT
EI_f	0.00	1.00	–					
SEA_r	0.00	1.00	.00	–				
OEA_r	0.00	1.00	.00	−.35***	–			
UOE_r	0.00	1.00	.00	−.39***	−.29**	–		
ROE_r	0.00	1.00	.00	−.31***	−.40***	−.27***	–	
SAT	3.51	0.67	.25***	−.06	−.04	.13*	−.01	–

Notes. $N = 228$. EI_f = trait-EI higher-order factor, SEA_r = self-emotions appraisal (residualized), OEA_r = others-emotions appraisal (residualized), UOE_r = use of emotion (residualized), ROE_r = regulation of emotion (residualized), SAT = global job satisfaction. * $p < .05$. ** $p < .01$. *** $p < .001$

($\Delta R^2 = .025$, $p < .05$). Thus, the estimated joint contribution of these personality factors and trait-EI in terms of explained job satisfaction variance rises to approximately 10% in the current sample.

Still, the respective variation in square multiple correlation after entering the residualized facets composite was very modest and only marginally significant ($\Delta R^2 = .014$, $p < .10$), suggesting that they do not hold incremental validity to predict job satisfaction over the big five and the trait-EI factor. Results are practically the same when entering with UOEr, i.e. the single residualized facet significantly linked with job satisfaction, in the third step of the analysis (step 3b), rendering a small and non-significant increment in the amount of explained variance in job satisfaction ($\Delta R^2 = .011$, *ns*).[1]

Discussion

By addressing the bandwidth-fidelity dilemma applied to the trait-EI factor and its four facets of self-emotions appraisal, others-emotions appraisal, use of emotion and regulation of emotion for the prediction of overall job satisfaction, the current study made some contributions to the literature. As highlighted above, while primary and meta-analytic research revealed that both global trait-EI and its facets are positively related to performance and job satisfaction (Miao et al. 2017b; O'Boyle Jr. et al. 2010; Greenidge et al. 2014), research is uninformative about the superiority of the factor or corresponding facets to predict these criteria.

Our findings contribute to improve the understanding about this matter by showing that the trait-EI factor constitutes a valid and meaningful predictor of overall job satisfaction and respective facets do not explain additional variance of this job-related attitude. Despite being positively related with this criterion, results show that when facets are residualized (i.e., when only their specific variance is taken into account) they do not hold criteria-related validity towards this criterion. The single exception concerns the use of emotion facet, yet even in this case it does not show incremental validity over the global trait-EI factor and the big five. Therefore, these findings are aligned with Hulin's (1991) perspective on the discussion of the bandwidth-fidelity dilemma for job attitudes according to which broad attitudes will be better predicted by global predictors. Furthermore, our results also contribute to the literature by revealing that this higher-order trait-EI entails an individual disposition that is non-redundant with the big five in the explanation of overall job satisfaction.

Altogether, these findings point to both theoretical and practical implications. From a conceptual viewpoint, they support the merits ascribed to the dispositional approach to job satisfaction (see Staw and Cohen-Charash 2005) and further suggest that trait-EI might stand among the dispositional antecedents of this core attitudinal criterion. Since results also support trait-EI non-redundancy with the big five for explaining job satisfaction, they also indicate that trait-EI encompasses conceptual elements that might not be entirely covered by this personality taxonomy. As noted by Hulin and Judge (2003), "job satisfaction includes multidimensional psychological responses to one's job, and that such responses have cognitive (evaluative), affective (or emotional), and behavioral components" (p. 394). Thereby, it is plausible to posit that trait-EI might play a specific and differential role in

Table 3 Incremental validity of EI residualized facets over the higher-order factor for predicting job satisfaction

Independent variables	β	R	R^2	R^2_{adj}	ΔR^2
Step 1		.273***	.074	.066	–
Extraversion	.210**				
Agreeableness	.154*				
Step 2		.316***	.100	.088	.025*
EI Factor	.172*				
Step 3a		.338***	.114	.098	.014+
EI Facets	.119+				
Step 3b		.333***	.111	.095	.011
UOEr	.106				

Notes. $N = 228$. UOEr = use of emotion (residualized). + $p < .10$ * $p < .05$. ** $p < .01$. *** $p < .001$

[1] As recommended by Salgado et al. (2015), we also calculated the respective square population cross-validity coefficients (R^2_{cv}), using Browne's (1975) formula, since both the multiple square regression (R^2) or the adjusted R^2 coefficients can be biased by the capitalization on chance that occurs in multiple regression (Yin and Fan 2001). Obtained estimates were $R^2_{cv} = .062$ for step 1, $R^2_{cv} = .080$ for step 2, $R^2_{cv} = .087$ for step 3a and $R^2_{cv} = .083$ for step 3b of the respective hierarchical regression analyses. In spite of their lower magnitude, these estimates depicted a similar pattern of findings in terms of incremental validity.

enacting positive affect processes which are beneficial for more favorable job satisfaction appraisals. By enhancing job satisfaction, global trait-EI might act as a driver of subsequent beneficial effects of this core attitude, linked with increased well-being and individual performance (Judge and Kammeyer-Mueller 2011). In fact, initial empirical evidence gives credit to these aspects by showing that trait-EI influences job satisfaction via affective processes (e.g., Kafetsios and Zampetakis 2008) and that trait-EI ultimately facilitates performance behaviors by enhancing job satisfaction (e.g., Greenidge et al. 2014).

From a practical perspective, our findings indicate that relying upon a high-order factor of trait-EI does not result in potential prediction losses when the criterion is overall job satisfaction, since specific facets do not hold specific and reliable variance, apart from EI global factor variance, which effectively matters when predicting this attitudinal criterion. As such, a measure of the individual's global perception of own competence in dealing effectively with emotions to better adapt to environment and enhance well-being seem to has more applied value than any specific self-assessment of trait-EI facets, i.e. own and others' emotions perception, use of emotion or emotion regulation when the purpose is to predict a broad criterion of job satisfaction. These results somewhat resemble the picture from meta-analytic research concerning the bandwidth-fidelity dilemma applied to effects of personality traits on job satisfaction (i.e., Steel et al. 2018) since personality facets only accounted for a minor increase in explained variance of overall job satisfaction when broad factors are also considered.

In spite of these contributions, this study has some limitations. In particular, it should be noted that our results only shed partial light on the bandwidth-fidelity dilemma applied to trait-EI job satisfaction links, since a single and broad criterion of job satisfaction was used. Future research should capitalize upon the feasibility of the hierarchical model for trait-EI and include both broad (i.e., overall satisfaction) and narrow job satisfaction (i.e., satisfaction facets) criteria to allow a more informative discussion of the bandwidth-fidelity dilemma. In particular, the use of satisfaction facets might capture important particularities of job satisfaction appraisals for which more specific trait-EI facets might impact differently and eventually stronger than the trait-EI global factor. For example, due to its instrumental role in improving the quality of social work interactions by inducting positive affect states and modulating own and others emotions, the facet of regulation of emotion might become more important than the trait-EI factor for predicting job satisfaction facets that mostly subsume interpersonal aspects of the job, like satisfaction with supervision and peers. This might represent a pertinent clue for future research since, as underlined by Ashton et al. (2014) in the scope of the debate on the bandwidth-fidelity dilemma in personality and performance, facet-level predictors might hold superior validity than factor-level scales, especially when there is "some strong conceptual link between a given facet-level scale and a criterion variable" (p. 24).

Another limitation stems from the reliance of our findings on a single job of software engineering from a multi-national company, pertaining to the information-technology industry, which constrains the generalizability of our findings. Furthermore, using a predominantly male sample constitutes an additional constraint to generalization of our results, especially given the previous empirical evidence indicating that "men did score lower on self-perceived EI, which suggests that they think of themselves as less confident in perceiving, understanding and regulating emotions than did women" (Fischer et al. 2018, p. 14). Therefore, future studies with more gender-balanced samples, representing different jobs and industries, is certainly needed before more solid conclusions can be drawn.

In conclusion, the current study supports the criterion-related validity of trait-EI factor for overall job satisfaction and maps this construct as an individual disposition, non-redundant with the big five, that contributes to shaping this critical attitudinal response at work. It has also evidenced that trait-EI corresponding facets do not account for specific variance on this criterion beyond the high-order factor, recommending that global factor scores be employed when the purpose is to predict satisfaction at work.

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Compliance with Ethical Standards

Conflict of Interest On behalf of all authors, the corresponding author states that there is no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Approval to conduct this study was obtained.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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