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Ivcevic, Zorana ; Moeller, Julia ; Menges, Jochen ; Brackett, Marc

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RUNNING HEAD: Supervisor emotional intelligence

**Supervisor emotionally intelligent behavior and employee creativity**

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### **Abstract**

In a national study of employees across industries ( $N = 14,645$ ), we examined the role of supervisor emotionally intelligent behavior for employee opportunity to grow, their affect at work, and creativity/innovation at work. Employees reported on their supervisors' emotionally intelligent behavior (perceiving, using, understanding, and managing emotions), and self-reported about their job experiences and creativity/innovation at work. Supervisor emotionally intelligent behavior was related to employee affect at work assessed using both open-ended questions and emotion rating scales. Furthermore, supervisor emotionally intelligent behavior was linked to employee creativity/innovation through its effect on employee opportunity to grow and higher experience of positive affect (supporting a serial mediation model). We discuss the implications of the results for creativity/innovation research and innovation management.

### **Supervisor emotionally intelligent behavior and employee creativity**

Creativity is crucial for individual job security and earning potential, as jobs requiring creativity are least likely to become computerized (Benedikt & Osborne, 2017). Individual creativity is necessary for organizational creativity and innovation (Bharadwaj & Menon, 2000; Sarooghi, Libaers, Burkemper, 2015) and for the emergence of creative communities (Florida, 2014). Because individual creativity is influenced by social processes, others in the workplace (coworkers, supervisors, top leadership) can shape employee creativity (e.g., Amabile & Pratt, 2016; Anderson, Potocnik, & Zhou, 2014; Tesluk, Farr, & Klein, 1997). Emotional intelligence has been proposed as important resource affecting both general leadership effectiveness (George, 2000) and employee creativity (Zhou & George, 2003). In this paper, we examined how emotionally intelligent behavior of supervisors predicts employee creativity.

Emotional intelligence is defined as the ability to perceive, use, understand, and manage emotions (Mayer & Salovey, 1997; Mayer, Roberts, & Barsade, 2008). Emotional intelligence enables individuals to be sensitive to nuances in others' emotions and detect what they are feeling, as well as respond to others in ways that promote interpersonal acceptance and liking (Lopes, Salovey, Cote, & Beers, 2005). Individuals with high emotional intelligence tend to have better interpersonal relationships (Brackett, Rivers, & Salovey, 2011; Brackett, Rivers, Shiffman, Lerner, & Salovey, 2006; Lopes et al., 2005) and are better able to meet organizational goals (Cote & Miners, 2006).

We base this research on the job demands and resources model and specifically its motivational pathway (Bakker & Demerouti, 2007). According to this model, personal resources (e.g., optimism) and job resources (e.g., supervisor support) contribute to greater engagement, which is in turn associated with positive performance outcomes (Xanthopoulou, Bakker,

Demerouti, & Schaufeli, 2007, 2009), whereas job demands contribute to burnout and negative job outcomes (e.g., turnover; Hu, Schaufeli, & Taris, 2011; Lewig, Xanthopoulos, Bakker, Dollard, & Metzger, 2007). We propose that supervisor emotionally intelligent behavior is a job resource, which contributes to building motivational resources in employees (opportunities for growth) and positive affective experiences in employees, and these in turn predict employees' creativity at work.

### **Defining emotional intelligence**

There are two distinct lines of research on emotional intelligence (Brackett et al., 2011). The first defines emotional intelligence as an ability and assesses it using performance tests that ask respondents to solve emotion-related problems (similar in nature to general intelligence tests). In this line, test performance is judged in relation to criteria of response quality or correctness (e.g., does a respondent correctly identify a facial expression showing a known emotion of fear). The second defines emotional intelligence as a trait that is measured using self-report instruments (e.g., asking people to evaluate how good at perceiving emotions they are). Self-report measures are only weakly related to performance measures of emotional intelligence (Van Rooy, Viswesvaran, & Pluta, 2005), and this is the case even when a self-report measure is designed to map onto the components of the ability model assessed by the performance measures (Brackett & Mayer, 2003; Brackett et al., 2006). This research suggests that the two models refer to two distinct constructs.

Here, we define supervisors' emotional intelligence in terms of behavior indicative of their abilities to reason about and with emotions. We ask about behavior showing that supervisors successfully perceive emotions, use emotions to help thinking and inspire or assist problem solving, understand the causes and consequences of emotions, and manage emotions in

oneself and others (Mayer & Salovey, 1997; Mayer, Salovey, & Caruso, 2004). An ability test might ask respondents to identify emotions in a set of facial expression photographs, or rate relative effectiveness of different strategies for specified emotion regulation goals, and as such measures one's reasoning that has a potential of translating in behavior. However, such assessments do not provide information about the extent to which respondents apply their abilities at work. Because supervisor behavior exhibited at work influences their employees, we asked employees to report on their supervisor's emotionally intelligent behavior (EIB).

Elfenbein, Barsade, and Eisenkraft (2015) found that multiple employees tended to agree in their reports of supervisor EIB. Moreover, these measures showed predictive validity for transformational leadership, as well as performance ratings from teammates and supervisors, even after controlling for a host of potential confounds, such as cognitive intelligence, personality, trait affect, liking, and demographic characteristics.

### **Emotional intelligence as a job resource**

Emotional intelligence of employees can be a personal resource and supervisor EIB can be a job resource. Giardini and Frese (2006) found that EIB moderated the relationships between work demands and emotional dissonance, between emotional dissonance and affective work outcomes, and between work demands and outcomes. In a diary study of knowledge workers across multiple companies and industries, employees described many emotional intelligence-related behaviors as characteristic of supportive leaders (Amabile, Schatzel, Moneta, & Kramer, 2004). Examples included helping to alleviate stress in employees (related to the ability of managing emotions in others) and addressing employees' feelings during layoffs (related to perceiving and understanding emotions). Leader behavior was described as having consequences for employees' perceptions (e.g., likelihood of project success) and affect (e.g., relief of pressure,

experienced encouragement, sense of one's potential being utilized), which in turn influenced performance (e.g., number of ideas discussed, progress made).

There is a rich literature on supervisor trait emotional intelligence supporting its function as a resource at work. For example, managers' trait EI predicted trust from their employees (Du Plessis, Wakelin, & Nel, 2015) and trust and job satisfaction mediated the relationship between supervisor trait EI and project success (Rezvani, Chang, Wiewiora, Ashkanasy, Jordan, & Zolin, 2016). Similarly, Huang, Chan, Lam, and Nan (2010) found that lower burnout mediated the link between trait EI and work performance in a telecommunications call center. Another mechanism by which trait EI can contribute to job outcomes is through positive dyadic leader-member exchange. In a longitudinal study, trait EI predicted subsequent higher job satisfaction and lower turnover intentions through the quality of leader-member exchange (Jordan & Troth, 2011).

A recent meta-analysis shows that supervisors' EIB predicts employee job satisfaction, with evidence for incremental validity and relative importance of supervisor EIB over the effects of subordinates' EI (Miao, Humphrey, & Qian, 2016). Emotional intelligence in secondary school teachers was related to their experience of positive emotions, which in turn predicted higher job satisfaction and lower burnout (Brackett, Palomera, Mojsa, Reyes, & Salovey, 2010). Ability to accurately perceive emotions buffers negative effects of emotion labor on work engagement in a longitudinal study of police officers and nurses (Bechtoldt, Rohrmann, De Pater, & Beersma, 2011). In a study of service employees in clothing retail, other-rated EI acted as a buffer against the negative effects of emotional dissonance on job satisfaction and affective well-being at work (Giardini & Frese, 2006). Supervisor EIB predicts getting ahead behaviors (visioning, energizing, rewarding) through its relationship with getting along behaviors (instilling teamwork, empowering employees to make decisions; Guillen & Florent-Treacy, 2011).

While there is substantial evidence supporting the relationship between EI and positive affect at work, previous research has not directly examined how this positive affect is engendered. George (2000) theorized that leader EI contributes to development of shared goals, creating inspiration and motivating effort in employees, as well as contributing to living organizational identity and mission. Emotionally intelligent supervisors can create conditions for employees to grow, including opportunities to develop new skills, be promoted, and advance in their careers. Supervisors who are able to perceive and understand emotions can use this information to recognize problems and successes and guide employees toward opportunities for growth (Clore, Schwarz, & Conway, 1994; Schwartz, 2012). Similarly, supervisors who are able to help their employees to regulate emotions can create conditions for persistence and development in face of challenges. Finally, correlates of EI such as positive leader-member exchange also predict employee opportunity to grow (Breevaart, Bakker, Demerouti, & van den Heuvel, 2015).

*H1: Supervisor EIB is positively related to employee perceived opportunities for growth.*

*We test this hypothesis by examining correlations between supervisor EIB and employee ratings of opportunities for growth at work.*

*H2: Supervisor EIB is positively related to employee affect at work. We test this hypothesis by examining correlations between supervisor EIB and employee ratings of frequency of positive affect at work, as well as by comparing responses to an open-ended prompt about task-related affect by those whose supervisors show high vs. low EIB.*



### **From supervisor emotional intelligence to creativity at work**

Creativity is commonly defined as “the production of novel and useful ideas by an individual or small group of individuals working together” (Amabile & Pratt, 2016, p. 158). This definition encompasses major elements of creativity – novelty or originality and usefulness, either driven by individuals or small groups. Emotions are integral to the creative process from the desire and decision to be creative, to working through ups and downs of idea generation and development, to risks and pressures of product completion and presentation (Ivcevic & Hoffmann, 2017). The study of emotional intelligence in relation to creativity explicitly takes into account that people have agency in relation to their emotions and those around them; we posit that people can influence the course of their own emotions and emotions of others around them (such as when supervisors influence employees), as well as actively harness their emotions in the service of their goals (such as creativity and innovation).

Supervisor EIB can support creativity through motivational and affective mediators. Zhou and George (2003) developed a series of theoretical propositions on how leader emotional intelligence can affect creativity. Emotionally intelligent leaders are able to notice employee dissatisfaction (while managing their own disappointment or irritation), recognize that dissatisfaction conveys information about a problem, and frame it as an opportunity for improvement. Emotionally intelligent leaders can manage their own and employees’ emotions in the service of creative goals (e.g., from instilling persistence to identifying when happiness is due to premature settling on ideas). Furthermore, emotionally intelligent leaders can identify their own and employees’ emotions as the ideas are evaluated, discussed, and modified, and they can manage emotions in such a way that they provide informative feedback when generating and developing ideas.

Emerging research supports the importance of emotional intelligence for creativity. In a study across several industries, middle managers' trait EI predicted their ratings of employees' frequency of both creative and useful ideas (Rego, Sousa, Pina e Cunha, Correia, & Saur-Amaral, 2007). Several studies examined mechanisms by which trait EI relates to creativity and showed that trait EI predicts creativity through motivational and affective mediators (e.g., team trust and collaborative culture: Barczak, Lassk, & Mulki, 2010; certainty about one's environment: Darvishmotevali, Altinay, & De Vita, 2018). Carmeli, McKay, and Kaufman (2013) studied employees from software companies and found support for a serial mediation where trait EI predicted employee generosity and vigor, which in turn predicted creativity.

Research on leader EI (as assessed by performance based tests) and EIB (assessed by other-reports) and employee creativity is scarce. Existing evidence shows that leaders who have the ability to use emotions can strategically display emotions to inspire others or to transform frustrations into opportunities to grow and creatively address challenges (Cote & Hideg, 2011). In a study of a large healthcare organization, Castro, Gomes, and de Sousa (2012) found a significant relationship between employee ratings of supervisor EIB and employee self-reported and supervisor-reported creativity at work. The aspects of EIB that appeared most relevant for predicting creativity were understanding emotions (e.g., awareness of sources or causes of emotions) and using emotions (e.g., encouraging maximal performance).

Research on mechanisms by which ability EI predicts creativity suggests affective mediators. Bledow, Rosing, and Frese (2013) demonstrated that the process of emotion regulation – a change in emotions with decreasing negative and increasing positive affect – enhances creativity. In a diary study, people whose affect changed from negative in the beginning of the workday to positive at the end of it rated their days as more creative than those

who did not have such a shift. This finding was further supported in an experimental study using mood induction. Abilities to use and regulate emotions contributed to creativity in professionals from a variety of knowledge industries (Parke, Seo, & Sherf, 2015). The relationship between EI abilities and creativity was mediated by increased experience of positive emotions, a consistent predictor of creative idea generation (Amabile, Barsade, Mueller, & Staw, 2005; Baas, De Dreu, & Nijstad, 2008).

Based on the reviewed research, the present study examines supervisor EIB as a job resource that contributes to employee opportunities to grow and positive affective experiences. These experiences in turn predict employee creativity. Above, we presented the empirical support for the conceptualization of supervisor EIB as a job resource. Although theoretical discussions of EI suggest that supervisors showing high EIB could enhance employee opportunities to grow, we are empirically testing this proposition for the first time. Opportunities to grow, a motivating job resource, have been related to creativity in previous research (Bakker & Xanthopoulou, 2013). A rich literature shows that EI predicts positive affective experiences (job satisfaction, Miao et al., 2016; positive emotions, Parke et al., 2015), which are reliable influences on creativity (Amabile et al., 2005; Parke et al., 2015). We extend this work by linking the opportunities to grow and positive affect.

*H3: Supervisor EIB is related to employee self-reported creativity at work. This relationship is mediated by employee perceptions of their opportunity to grow at work and their experience of positive affect at work (serial mediation model).*

## **Method**

## **Participants and data collection procedure**

Participants were recruited using Qualtrics panels. Recruitment quotas were created to be demographically representative sample of the U.S. working population based on the Department of Labor statistics. After removing participants who failed more than two (out of thirteen) attention checks, the final sample included 14,645 working adults over the age of 18 who lived in the United States (73% completion rate).

The sample was 9.8% Hispanic, 82.7% White/Caucasian, 9.4% Black/African-American, 4.2% Asian/Asian-American, 2.2% Biracial or Multiracial, 1.6% American Native or Alaska Native, 0.3% Native Hawaiian or other Pacific islander, and 2.4% reported other identities; 50.6% were male, 49.2% female, and 0.2% reporting “other” gender identities. Data were available from all 50 states. Participants were on average 40.78 years old ( $SD = 14.10$ ). The average subjective socio-economic status rating was 5.52 ( $SD = 2.30$ ); measured on a scale ranging from 0 (worst off) to 10 (best off), based on Ostrove, Adler, Kuppermann, and Washington (2000). Participants came from all levels in their organization’s hierarchy, with the average 4.96 ( $SD = 2.65$ ) on a scale from 0 (entry level) to 10 (head of organization) and reported working on average 39.62 hours per week ( $SD = 12.53$ ).

## **Measures**

*Supervisor emotionally intelligent behavior (EIB)*. Participants rated EIB of their immediate supervisor. Twelve items asked about supervisors’ behavior pertaining to four emotional intelligence abilities: perceiving emotion (three items, e.g., “My supervisor realizes when people are dissatisfied at work”), using emotions to help thinking and problem solving (four items, e.g., “My supervisor helps people find ways to channel their dissatisfaction into making a productive change”), understanding emotions (two items, e.g., “My supervisor

understands how their decisions and behaviors affect how others feel at work”), and managing emotions (two items, e.g., “My supervisor is good at helping others feel better when they are disappointed or upset”). All items were rated on a six-point scale from “strongly disagree” to “strongly agree”. Principal axis factoring indicated that all items loaded on a single factor (loadings from .85 to .67;  $\alpha = .95$ ).

*Opportunity to grow.* Employees’ perceived opportunity to grow was assessed with four items (e.g., “I have opportunities to develop new skills”). Participants responded on a six-point scale from “strongly disagree” to “strongly agree” ( $\alpha = .89$ ).

*Affect at work.* We assessed affective experiences at work using open-ended questions and emotion rating scales. First, participants were asked, “Over the past 6 months, how did your job make you feel? Which specific emotions did you experience most frequently because of your specific tasks and responsibilities?”, followed by three blank fields. Most participants entered a single descriptor per field (e.g., happy, anxious, overworked). Responses were cleaned to create labels used by participants so that nouns (e.g., happiness), adjectives (e.g., happy), misspellings (e.g., hapiness), and phrases or statements (e.g., mostly happy, I feel happy) were assigned the same label (e.g., happy).

Next, participants were asked to rate how often they experienced each of the 23 emotions at work in the previous three months using a scale ranging from 0 (never) to 100 (always). Principal axis factoring analysis with oblimin rotation identified four factors (three pertaining to negative and one to positive emotions). For the purposes of this study, we included only items describing positive emotions: proud, interested, connected, passionate, confident, inspired, happy, respected, content, and safe (loadings between .82 and .65;  $\alpha = .94$ ). The items represented emotions identified in previous research as important for organizational outcomes

(e.g., happiness predicts higher creativity at work, Amabile et al., 2005; organizational respect predicts less burnout, Ramarajan, Barsade, & Burack, 2008).

*Creativity/innovation.* We assessed creativity/innovation with five items adapted from Zhou and George (2001; e.g., “Contributed original ways to achieve goals”, “Came up with new ideas to improve efficiency without being asked”). All items were formulated in terms of specific behaviors and participants indicated how many times they did each of the behaviors in the previous six months on a 5-point scale from “none” to “4 or more times” ( $\alpha = .92$ ). According to a recent review, this is the most commonly used measure of creativity at work and it includes items referring to both creativity (generation of new ideas) and innovation (promotion and implementation of ideas; Hughes, Lee, Wei Tian, Newman, & Legoode, 2018). To reflect this dual nature of the measure, we label it as creativity/innovation in the remainder of the paper.

## Results

The first two research questions concern how subordinates perceive growth opportunities and how they feel at work depending on their supervisors’ level of EIB. Correlations were high between supervisor EIB and both employee opportunity to grow ( $r = .57$ ) and ratings of positive affect at work ( $r = .58$ ) (see Table 1). Because these correlations could be in part due to the common method variance, we also examined affect using an open-ended question about employees’ feelings at work. This question specifically asked about feelings associated with job tasks and responsibilities, thus testing how supervisor behavior spreads from the interpersonal sphere to the employees’ perceptions of their work.

The large sample size enabled us to compare extreme groups of 25% of supervisors described as showing high EIB and 25% of supervisors described as showing low EIB. Figures 1 and 2 show word clouds with descriptors of job-related feelings employees freely generated for

the two extreme groups of supervisors. In these figures, the size of words or phrases is proportional to how often they were used in the sample. Employees whose supervisors show low EIB prominently mentioned a host of negative feelings, such as being frustrated, stressed, tired, angry, and bored, while employees whose supervisors show high EIB mentioned happiness as the dominant feeling (with other descriptors being more than three times less frequent; ‘happy’ mentioned 1,455 times, ‘stressed’: 445 times, ‘frustrated’: 377 times).

Next, we examined the 30 most commonly mentioned affective descriptors for the two groups differing in supervisor EIB (Figure 3). Three trained raters indicated whether each affective label was positive, negative, or neutral in valence (average kappa = .86). Disagreements were resolved through discussion.

The relationship between supervisor EIB and positive employee affect at work was supported again. When employees described their supervisors as showing low EIB, 21 of the top 30 descriptors (70%) were negative in valence. When employees described their supervisors as showing high EIB, 19 of the top 30 descriptors (63.3%) were positive in valence. Some descriptors were common to both groups: eight positive (e.g., happy, excited) and nine negative (e.g., stressed, frustrated). The unique descriptors generated by employees whose supervisors show low EIB were overwhelmingly negative (12 out of 13 labels, 92.3%; e.g., depressed, unappreciated; one label was deemed neutral). The unique descriptors generated by employees whose supervisors show high EIB were predominantly positive (11 out of 13 labels, 84.6%; e.g., motivated, appreciated; two labels were deemed neutral).

Finally, we examined whether the effect of supervisor EIB on creativity/innovation was mediated through employee opportunity to grow and positive affect at work. To test the serial mediation model, we used Hayes’s (2013) SPSS PROCESS macro (Model 6) with supervisor

EIB as the predictor, self-rated creativity/innovation as the outcome, and opportunity to grow and rated frequency of positive affect at work as the first- and second-step mediators (see Figure 4). Five thousand bootstrap samples were used to create 95% bias corrected confidence interval (CI) to assess the significance of the indirect effects. The effects are considered statistically significant if the CI does not include zero.

The total effect of perceived supervisor EIB on creativity/innovation was significant,  $B = .242$ ,  $SE = .0084$ ,  $t = 28.934$ ,  $p < .001$ , 95% CI [.226, .258]. The direct effect of supervisor EIB on creativity/innovation remained significant, even after controlling for opportunity to grow and positive affect,  $B = .051$ ,  $SE = .011$ ,  $t = 4.8204$ ,  $p < .001$ , 95% CI [.030, .072].

Supervisor EIB had a significant effect on opportunity to grow,  $B = .646$ ,  $SE = .008$ ,  $t = 80.218$ ,  $p < .001$ , 95% CI [.630, .662], and the opportunity to grow significantly predicted creativity/innovation,  $B = .170$ ,  $SE = .009$ ,  $t = 18.254$ ,  $p < .001$ , 95% CI [.152, .189]. More importantly, the indirect effect of supervisor EIB on creativity/innovation through opportunity to grow was significant,  $B = .110$ ,  $SE = .006$ , 95% CI [.098, .123], supporting the hypothesis that employee opportunity to grow mediates the relationship between supervisor EI and creativity/innovation.

A similar pattern was observed when testing the mediating role of positive affect at work on creativity/innovation. Specifically, supervisor EIB predicted positive affect at work,  $B = 7.101$ ,  $SE = .153$ ,  $t = 46.442$ ,  $p < .001$ , 95% CI [6.801, 7.400]. Moreover, there was a positive relationship between positive affect at work and creativity/innovation,  $B = .007$ ,  $SE = .001$ ,  $t = 13.046$ ,  $p < .001$ , 95% CI [.006, .008]. The indirect effect of supervisor EIB on creativity/innovation through positive affect was significant,  $B = .051$ ,  $SE = .004$ , 95% CI [.043, .060]. Thus, the hypothesis that positive affect mediates the relationship between supervisor EIB



and creativity/innovation was supported.

Finally, we tested the serial mediation model in which supervisor EIB predicted employee creativity/innovation through its effects on employee opportunity to grow and their experience of positive affect. There was a significant relationship between opportunity to grow and positive affect,  $B = 6.371$ ,  $SE = .134$ ,  $t = 47.543$ ,  $p < .001$ , 95% CI [6.108, 6.634]. Moreover, the serial indirect effect of supervisor EIB on creativity/innovation through opportunity to grow and positive affect was significant,  $B = .030$ ,  $SE = .003$ , 95% CI [.025, .035].

To test the relative importance of the indirect effects, we used the contrast option in PROCESS. Results indicated that the indirect effect of supervisor EIB through opportunity to grow was significantly greater than the effect through positive affect ( $B = .059$ ,  $SE = .009$ , 95% CI [.042, .077]) or the serial indirect effect through opportunity to grow and then positive affect, ( $B = .080$ ,  $SE = .008$ , 95% CI [.065, .096]). Similarly, the serial indirect effect was significantly lower than the indirect effect of supervisor EIB on creativity/innovation through positive affect ( $B = .022$ ,  $SE = .002$ , 95% CI [.017, .026]).

### Discussion

In a national study of workers across industries, we tested the relationship between supervisors' EIB and employee creativity/innovation and built on previous work (Castro et al., 2012; Parke et al., 2015) by testing a specific mechanism of influence. When describing their job-related affect in their own words, employees whose supervisors show high EIB mentioned being motivated, growing, and recognized at work. In contrast, those whose supervisors show little EIB mentioned many emotions in the anger family. A serial mediation model supported the hypothesis that supervisors exhibiting EIB facilitate employee creativity/innovation by supporting employees' opportunity to grow and facilitate greater experience of positive affect,

which in turn predicted creativity/innovation at work.

As previous research showed that individual EIB is a personal resource helping to explain the relationship between job demands and outcomes (Giardini & Frese, 2006), this study shows that supervisors' EIB is a job resource for their employees. As predicted by the job demands and resources model, this job resource is associated with motivational and affective variables, as well as the behavioral work outcome of creativity/innovation (Xanthopoulou et al., 2007, 2009). Ratings of supervisor EIB predicted experience of positive affect at work, which is a reliable predictor of creativity (Amabile et al., 2005). In addition to using traditional rating scales, we examined affect at work using open-ended descriptions of employee affect. The relationship between supervisor EIB and employee affect was again supported. Moreover, the open-ended question was specific to feelings related to work tasks and responsibilities, suggesting that effects of supervisor behavior spread from the interpersonal context (supervisor-employee interactions) to how employees' experience their duties.

Employees mentioned many affective descriptors – from physical feelings (e.g., tired), to emotions (e.g., happy, angry), to descriptions of work conditions and experiences (e.g., overworked, underpaid). Regardless of supervisor EIB, employees commonly mentioned a number of positive and negative feelings. These were all high frequency words (all in the top 5,000 words in American English, Word Frequency Data, n.d.). When employees were asked to think of any feelings that come to mind, it is not surprising that commonly used words are most frequent among the top three experiences, including basic emotions (e.g., happy, angry) and work or achievement-related affective descriptors (e.g., proud, accomplished). The fact that there were similar numbers of positive and negative terms shows that these are common descriptors of work in general and that work tends to elicit a broad range of affective experiences.

However, there were substantial differences in work affect for employees who described their supervisors as showing high vs. low EIB. The dominant emotion for employees whose supervisors show high EIB was happiness and in the top 30 most frequently mentioned descriptors 19 were positive. These employees described experiences of growth (e.g., fulfilled, challenged), motivation (especially intrinsic motivation: e.g., fun, challenged), and recognition (e.g., appreciated, grateful). Such descriptors suggest an environment conducive to optimal engagement and flourishing (Bakker & Schaufeli, 2008; Moeller, Ivcevic, White, Menges, & Brackett, 2018). By contrast, those whose supervisors show low EIB most often mentioned frustration and stress and among the top 30 most frequent descriptors of job-related affect 21 were negative. These employees described anger-related feelings (e.g., irritated, aggravated), and unfavorable work conditions (e.g., underpaid, overworked).

The process model in the present study was based on the job demands and resources model (Bakker & Demerouti, 2007; Xanthopoulou et al., 2007, 2009), which posits that job resources predict positive affective experiences and desirable work outcomes. The model was supported in that the job resource of supervisor EIB predicted the affective outcome (positive emotions) and behavioral work outcome (creativity/innovation) through its effect on a motivational variable of employee opportunity to grow. Furthermore, our results support George's (2000) proposition that emotionally intelligent leaders inspire motivation and confidence in employees, as well as create a sense in employees that they are valued. However, present findings suggest that another set of propositions might be necessary to explain the effects of leaders who show low EIB. Feelings associated with low supervisor EIB are not simple opposites of those associated with high EIB. Rather than referring to amotivation or lack of personal growth, low supervisor EIB is associated with anger (from feeling irritated and annoyed

to mad). Research on antecedents of anger indicates that it is rooted in unfair treatment and disapproval of someone's actions (Ortony, Clore, & Collins, 1988; Scherer, 1994, 2007).

Furthermore, the disapproval of supervisors' actions can color perceptions of the nature of one's job (seeing oneself as overworked and underpaid, for instance).

Although the present study significantly added to the existing research, there were some limitations. Perhaps most significantly, this study was limited by its cross-sectional assessment and reliance on a single source of data (risk of common method bias). The cross-sectional nature of the study does not allow for causal conclusions, while all data coming from the same source potentially introduces a common method bias. Future search should build on this study by having multiple point in time assessments, as well as multiple sources of data (e.g., supervisor reports of creativity and innovation). Because of the constraints of a large national study, the measure of EIB was based on reports by a single employee. Although there is empirical evidence that observers tend to agree in their judgments of EIB (Elfenbein et al., 2015), to increase reliability of ratings, future research should include reports from multiple employees who share the same supervisor. To achieve this, studies should be either based in specific organizations (although limiting the generalizability of results to particular industries) or researchers should recruit supervisors and ask them to provide contact information of their employees who could then be contacted for study participation.

Future research should also assess supervisor EI using ability measures. In contrast to the measure applied here which assessed typical behavior, ability measures assess maximal capacity to reason about and solve emotion-laden problems (Brackett et al., 2011). The distinction between typical and maximal performance originated when comparing personality traits (measured as behavioral tendencies; typical performance) and intelligence (measured as

performance on ability tests; maximal performance; e.g., Ackerman, & Kanfer, 2004; Goff & Ackerman, 1992). Often, these measures independently predict outcomes. For instance, typical measures of intellectual engagement (personality scales of intellect) and explicit intellectual cognitive ability (performance on tests of fluid and verbal reasoning) independently predict creative achievement in the sciences (Kaufman, 2013). There are a host of reasons for the discrepancy between maximal potential and observable behavior, such as expertise-related blind spots or high emotionality traits (Wagner, 2002).

Previous research shows that correlation between assessed EI ability (maximal performance) and ratings by knowledgeable others (typical performance) is low and not significant (Elfenbein et al., 2015). Existing research did not directly compare EI ability of supervisors and their employees' ratings of EI. Rather, one study solicited informant-ratings of EI from participants' supervisors and colleagues, and another collected ratings from members of class project teams (undergraduate sample; Elfenbein et al., 2015). Non-significant correlation between ability and informant-reported EI is similar to the findings about low correlation between ability-based and self-reported EI. However, unlike self-reported EI, observer-rated EI had predictive validity for theoretically relevant outcomes (e.g., effectiveness of individual contribution, effectiveness as a leader), controlling for demographic variables, personality traits, and cognitive intelligence. This shows predictive validity for observer-rated EI. To date, construct validity research comparing ability and other-reported EI is limited and future research will have to both replicate it, as well as directly compare predictive validity of ability and other-reported EI for important outcomes. To reflect this insufficiently examined issue of construct validity of different kinds of measures, in this paper we do not use the term emotional intelligence (EI), but rather refer to emotionally intelligent behavior (EIB).

What are the practical implications of the present research? First, supervisors who aim to encourage and enable creativity in their employees should acknowledge that creativity is refilled with emotion, from the anxiety when facing an open-ended problem and associated uncertainty or risk, to frustration of obstacles, to excitement of initial idea generation, and pride of final achievement. Supervisors who acknowledge that emotions matter in the creative process will be more likely to be mindful of employee emotions and create an environment in which employees experience opportunities to grow and develop their skills.

Second, organizations should acknowledge the important role of supervisor EIB for employee creativity and innovation. Multiple lines of research support the possibility of training EI, from meta-analytic evidence about anger management treatment in clinical psychology (Del Vecchio & O'Leary, 2004) to evidence about effectiveness of social and emotional learning programs in schools (Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011), and studies in organizational settings (Nelis et al., 2011). Lopes (2016) cautioned that training programs aimed at developing EI in organizations can be effective and a good investment only when certain conditions are met. These include: targeting behavior pertaining to managing emotions in others and expressing emotions, because they most directly affect leadership effectiveness; training aimed at specific organizational and individual needs; leveraging other skills in the learning process (such as applying analytic intelligence to problems involving emotion content); and integrating EI training into the organizational culture and mission. Work on open-ended projects requiring creativity and innovation offers many opportunities to apply EI – in inspiring team members and stimulating idea exchange and idea generation, preventing premature satisfaction and settling on ideas, recognizing points of frustration and supporting employees through them

as they develop and implement ideas. Because of this, such projects can be particularly well suited for development of emotion skills.

The present results showed that supervisor EIB contributes to employee motivation and opportunity to grow (aiding sustained intrinsic motivation characterized by challenge and enjoyment in work), as well as greater frequency of positive affect in employees. Supervisor EI skills – recognizing and validating employees’ positive and negative emotions, using a broad range of emotions to inform idea generation (preventing premature satisfaction and settling on ideas), and managing emotions so to offer feedback that employees are able to successfully use for growth – are important for work outcomes. However, these skills alone will not be sufficient to create desired outcomes. Future research should explicitly address the interaction of supervisor skills with organizational climate and culture for creativity and innovation (Anderson et al., 2014; Tesluk et al., 1997).

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Table 1

Descriptive statistics and correlations among quantitative study variables

	Range	M	SD	1	2	3	4
1. Supervisor EI behavior	1-6	3.55	1.22	-			
2. Opportunity to grow	1-6	4.01	1.39	.57	-		
3. Positive emotions	0-100	62.98	23.65	.58	.58	-	
4. Employee creativity	0-4	1.90	1.24	.24	.32	.30	-

*Note.* All correlations  $p < .001$ .

Figure 1.

Low supervisor emotionally intelligent behavior: Open-ended response about employee feelings at work related to job tasks and responsibilities.

Note. Word size is proportional to the number of times the label was used in the sample.



Figure 2.

Low supervisor emotionally intelligent behavior: Open-ended response about employee feelings at work related to job tasks and responsibilities.

Note. Word size is proportional to the number of times the label was used in the sample.



Figure 3.

Affective labels used by employees in the open-ended question about feelings at work related to job tasks and responsibilities (30 most frequent labels)

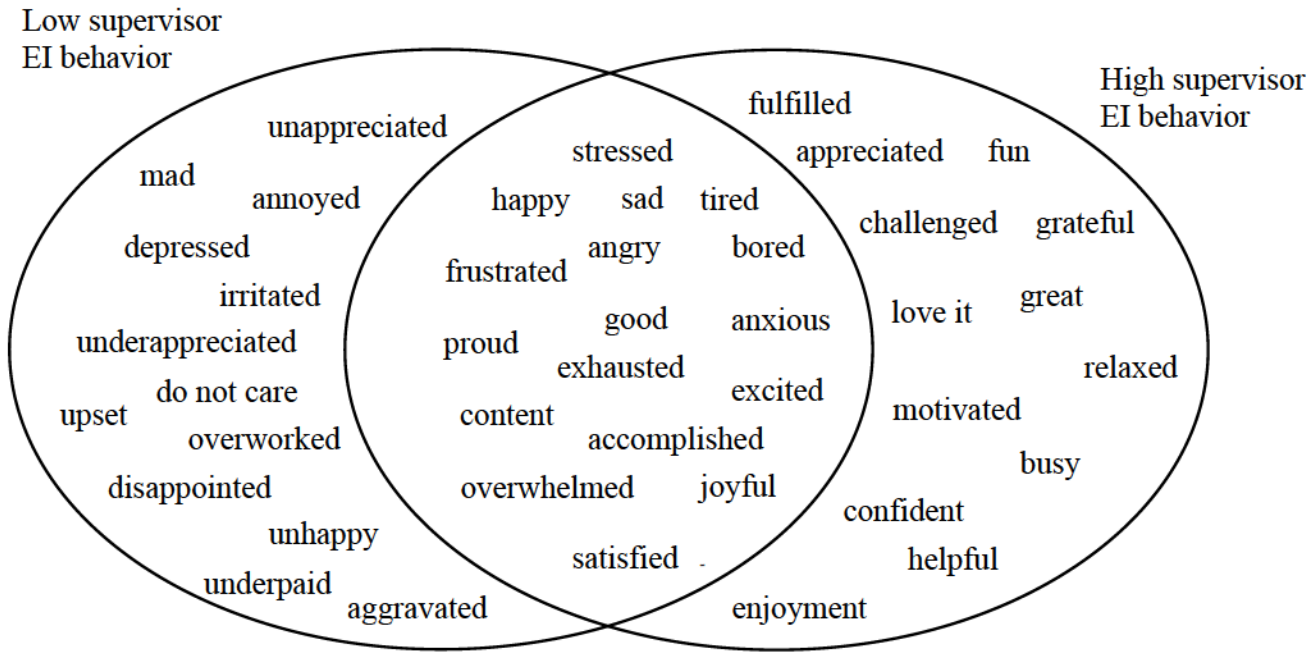


Figure 4.

Hypothesized serial mediation model showing effects of perceived supervisor emotionally intelligent behavior on employee creativity through opportunity to grow and positive emotions at work.

