



Vrije Universiteit Brussel

FACULTY PSYCHOLOGY AND EDUCATIONAL SCIENCES

Studies: Clinical- Biological Psychology

# The Link between Emotional Intelligence and Well-Being Differs by Gender

---

Master's thesis to obtain the degree of Master of Science in Clinical Psychology

**Katrien Koolen**

---

Academic year: 2013-2014

Promoter: Prof. Dr. M. Vandekerckhove

Mentor: Brett Q. Ford

Amount of words: 4709







SUMMARY MASTER'S THESIS  
(To bind after title-page + 1 separate page A4)

**Surname and name:** Katrien Koolen

**Rollnr.:** 95647

**Title of the Master thesis:** The Link between Emotional Intelligence and Well-Being Differs by Gender

**Promoter:** Prof. Dr. M. Vandekerckhove

**Summary:** Emotional intelligence (EI) is purported to be a critical component of psychological health and adaptive functioning. However, the empirical literature linking ability measures of EI to higher psychological health is relatively inconclusive. The mixed pattern of findings suggests that the link between EI and psychological health may be moderated by key contextual factors. Specifically, we propose that gender – a factor that likely shapes how individuals develop and experience EI during their lives – may critically moderate the benefits conferred by high EI. To test this hypothesis, we assessed emotional intelligence using an ability measure (i.e., Mayer-Salovey-Caruso Emotional Intelligence Test) and psychological health (i.e., anxiety and depressive symptoms) in a sample of 171 young adults. Results indicate that higher (vs. lower) ability EI is associated with fewer mood disorder symptoms for men, but ability EI is not associated with mood disorder symptoms for women. This study underscores the importance of assessing contextual factors to better understand how emotional intelligence may shape psychological health. These findings further suggest men may be particularly likely to benefit from emotional intelligence interventions to promote better psychological health.

## **Acknowledgements**

This thesis would not have been made without the help and support of many. I would like to extend my sincere gratitude to all those who made it possible.

First, I would like to thank Prof. Dr. M. Vandekerckhove, my promoter. Without her mediation and support this project would never have been realized. She gave me the opportunity to do an internship at UC Berkeley, where I met a lot of people who are passionate about research. Their perseverance and enthusiasm still inspire me.

I thank Iris Mauss, the director of the Emotion & Emotion Regulation lab at Berkeley. She warmly welcomed me in her lab and gave me the chance to grow in conducting research. I thank you Iris, for making me part of your lab and inspiring me with your great ideas. I really admire the way you run the lab and the way you are so closely involved with all the lab members.

I thank Brett Ford, who guided me through this whole process. I couldn't wish for a better mentor. From the beginning, she believed in me and encouraged me to be the best version of myself. Our meetings were not only of great importance for the development of this thesis, they also inspired me every time and gave me a sort of 'adrenalin shot' that kept me going along the way. I thank you Brett, for all your help and unrelenting support. I thank you for your invaluable expert scientific guidance and endless patience and making time for me in your busy agenda. Your optimistic view always made me carry on with confidence. Your enthusiasm about research was and is contagious and it made me start dreaming of a future in research. It has been an honor to have a researcher of your exceptional standard to guide me.

I thank my dear mother and father, for all the love and support they have given me throughout the years. They made my child's dream come true: "When I get older I want to study in America at your expense". Even though it wasn't easy sometimes, they always wanted the best for me and I'm so grateful for that.

And last, but not least, I thank the most important man in my life: Floris. You followed me and supported me throughout this whole journey. You pushed me to make the best out of this project and never stopped believing in me. I'm so thankful you're by my side and will always be there to make sure I'm doing the best I can.

## Table of Contents

<b>Introduction.....</b>	<b>1</b>
Emotional Intelligence and Psychological Health.....	1
Why the Link between EI and Psychological Health May Differ by Gender .....	2
The Current Investigation .....	4
<b>Methods .....</b>	<b>4</b>
Participants .....	4
Materials .....	5
Procedure.....	5
<b>Results.....</b>	<b>5</b>
Anxiety Symptoms .....	6
Depressive Symptoms.....	7
<b>Discussion.....</b>	<b>8</b>
Conceptual Implications .....	8
Practical Implications .....	10
Limitations and Future Directions.....	11
Concluding comment .....	11
<b>References .....</b>	<b>13</b>
<b>Appendices .....</b>	<b>16</b>

## **Introduction**

Emotional intelligence (EI) allows us to understand, use, and regulate our emotions and the emotions of others. In other words, it refers to the ability to perceive and understand emotional information and use it to guide our behavior (Mayer, Salovey, Caruso, & Sitarenius, 2003). Given the power and ubiquity of emotions in our daily lives, the abilities involved in emotional intelligence have been theorized as critical components of psychological health and adaptive functioning. However, a recent meta-analysis discovered that while there is a robust link between self-reported assessments of EI and higher psychological health, there may be no significant association between ability assessments of EI and psychological health (Schutte, Malouff, Thorsteinsson, Bhullar, & Rooke, 2007). This surprisingly weak association between ability measures of EI and psychological health in the face of a strong theoretical rationale for this association suggests that prior research may not have taken into account key contextual moderating factors.

We propose that one such factor is gender – a context that likely shapes how individuals develop EI (e.g., Sánchez-Núñez, Fernández-Berrocal, Montañés, & Latorre, 2008) and experience EI (e.g., Barrett, Lane, Sechrest, & Schwartz, 2000) during their lives. Indeed, some preliminary findings suggest that gender may shape who benefits socially from higher EI (Brackett, Rivers, Shiffman, Lerner, & Salovey, 2006). However, given the fundamental importance of psychological health, it is critical to understand which contextual factors may shape the link between EI and psychological health and how. Thus, the present investigation aimed to test whether gender moderates the psychological health benefits of EI.

## **Emotional Intelligence and Psychological Health**

EI is a multidimensional construct that involves the ability to perceive and identify emotions, use emotional experiences productively, and to understand and manage emotions (Mayer et al., 2003). Because these skills are so important for successful adaptation to the environment, theorizing has often assumed that there should be a reliable link between EI and psychological health (Schutte et al., 2007). Indeed, a recent meta-analysis found that there is a significant positive association between EI and psychological health when EI was assessed through self-report methods (Schutte et al., 2007). For example, Tsaousis and Nikolaou (2005) found that self-reported EI was associated with better general health and less smoking and drinking. Consistent with these findings, self-reported EI has also been linked with lower depression, anxiety, and stress (Ghorbani, Bing, Watson, Davidson, & Mack, 2002).

While these results are promising, some authors have argued that ability-based assessments of EI skills are more accurate and valid assessments of EI, compared to self-reported methods (Mayer, Caruso, & Salovey, 2000). For example, Mayer, Caruso, and Salovey (1999) emphasize the importance of using ability-based measures of EI and argue that any self-reported measure of EI will be more related to ego strength or social competence than to EI *per se*. Thus, if ability measures assess “true” EI more reliably than self-reported measures, and if EI *per se* is central to psychological health, then ability assessments of EI should be particularly predictive of psychological health. It is surprising then, that when examining the literature linking ability-based EI with psychological health, the literature is much more mixed.

Specifically, while some evidence suggests that ability-based EI is linked with higher psychological health, other evidence suggests very weak or null associations with psychological health (Schutte et al., 2007). On one hand, research using the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer et al., 2003) – a widely-known and validated ability-based measure of EI – has found that EI is linked with lower depression and lower anxiety (Brackett & Salovey, 2006; Head, 2002).

On the other hand, a recent meta-analysis suggests that when taking the available literature into account, there is an overall null link between ability-based measures of EI and psychological health (Schutte et al., 2007). For example, prior research has found null associations between the MSCEIT and subjective well-being and only modest links with psychological well-being (Brackett & Mayer, 2003). A study using the MEIS – a precursor to the MSCEIT (Mayer et al., 1999) – found no associations between EI and positive or negative affect (Humpel, Caputi, & Martin, 2001). Another study found that EI was associated with reduced stress for some individuals, but was irrelevant for other individuals, depending on their levels of emotional clarity and intensity (Gohm, Corser, & Dalsky, 2005). Some research even suggests that higher EI may backfire for psychological health: People who score high on emotional intelligence are emotionally more perceptive and therefore may be more vulnerable to the adverse effects of stress (Ciarrochi, Deane, & Anderson, 2002).

### **Why the Link between EI and Psychological Health May Differ by Gender**

The mixed pattern of results between ability-based EI and psychological health could be explained by an additional third factor that shapes the nature and direction of this relationship. We propose that one of these factors may be gender. Gender is the fundamental contextual factor that shapes many aspects of emotional life (Shields, 2002), and likely shapes emotional intelligence in

particular. Perhaps due to gendered socialization that occurs in childhood, women tend to have higher mean levels of EI than men (e.g., Sánchez-Núñez et al., 2008). Women are also more likely than men to talk about emotions (Fivush, Brotman, Buckner, & Goodman, 2000), more likely to differentiate between various emotional states (Barrett et al., 2000), more likely to experience intense and frequent emotions (Grossman & Wood, 1993; N. Jaušovec & K. Jaušovec, 2005), and less likely to report regulating their emotions by suppressing them (Gross & John, 2003). There is also evidence that women may not differ from men in the momentary experience of emotion per se, but rather, that they differ in their global or retrospective understanding of how “emotional” they are (Barrett, Robin, Pietromonaco, & Eyssell, 1998). These lines of research suggest that the ways in which men and women conceptualize, use, regulate, and perhaps experience their emotions may differ. Given how central these aspects of emotion are for both EI and psychological health, gender is therefore a prime candidate to examine as a critical moderator of the link between EI and psychological health.

To our knowledge, no prior research has systematically examined whether gender moderates the link between EI and psychological health. So, while it is possible that both men and women may equally benefit from higher EI, we propose that there are both conceptual and empirical reasons to hypothesize that men and women may not equally benefit from higher EI. This moderation may take two possible shapes.

On one hand, women with higher (vs. lower) EI could have better psychological health, while men with higher (vs. lower) EI may have the same (or worse) level of psychological health. This would be the case if, for example, women were better able to translate their EI ability into higher psychological health. Specifically, perhaps women are more likely to have higher socio-emotional resources to assist in ‘making the most’ of their EI (compared to men) because they tend to score higher on EI overall (Brackett, Mayer, & Warner, 2004), or because they tend to have better abilities to recognize emotions (N. G. Rotter & G. S. Rotter, 1988), or pay more attention to their emotions (Joseph & Newman, 2010), or have a richer emotional vocabulary and higher ability to read non-verbal behaviors (Fivush et al., 2000; Hall, 1984; Girdler, Turner, Sherwood, & Light, 1990). Because these different aspects are assessed as a part of the EI construct, they could each contribute to the possible benefits that women experience when having a higher EI.

On the other hand, men with higher (vs. lower) EI could have better psychological health, while women with higher (vs. lower) EI may have the same (or worse) level of psychological



health. This would be the case, if, for example, we 'expect less' from men in terms of their EI, and thus, men benefit more from having higher EI compared to women. Indeed, research suggests that men are expected to be less skilled in emotional domains than women (Brody & Hall, 2008). These lowered expectations could lead to unexpected benefits for men. Consistent with this hypothesis, Brackett et al. (2006) found that ability-based EI was associated with higher social competence for men, but not for women. If men are more likely to be socially competent as a result of their higher EI, then men may be more likely to translate this social competence into psychological health.

Based on previous research, it is still an open question whether and how men's or women's psychological health is linked with EI. It is therefore necessary to directly address this question to better understand whose psychological health is really benefiting from higher EI.

### **The Current Investigation**

In the present study, we investigated whether a key contextual factor – gender – moderates the link between EI and psychological health. To test this research question, we designed a study in which we measured individuals' emotional intelligence and their psychological health (i.e., mood disorder symptoms) in a sample of healthy young adults. To measure EI, we used the current gold standard of ability-based measures: the MSCEIT (Mayer et al., 2003). The MSCEIT uses a skill-based, non-self report method of assessing EI, and thus is less confounded with personality and general attitudes (O'Connor & Little, 2003), while also being psychometrically sound (Mayer et al., 2003). Within the MSCEIT, we examined the Total EI score as well as both the Experiential Area and the Strategic Area EI scores. The Experiential Area EI score focuses on lower-level conceptual forms of EI while the Strategic Area EI score focuses on higher-level conceptual forms of EI (Mayer, Salovey, Caruso, & Sitarenios, 2001). By looking at these three EI scores, we were able to test whether the moderating effect of gender is specific to particular domains of EI, or if the effect generalizes across multiple levels of EI. To assess psychological health more in depth, we measured both anxiety symptoms and depressive symptoms. Finally, we assessed EI and psychological health in two different sessions, thus reducing both participant burden and shared method variance between the measures.

## **Methods**

### **Participants**

We recruited a sample of 171 adults aged 18-24 (53.7% female) to complete this study as part of a larger research project. The participants received \$100 or course credit. The sample was

ethnically mixed and consisted of mostly Caucasian participants (66.3% Caucasian, 14.9% Asian, 8.6% Hispanic, 5.1% African American, 0.6% Middle Eastern and 8% other/multiracial participants).

### **Materials**

**Anxiety symptoms.** Anxiety symptoms were assessed using the Beck Anxiety Inventory (BAI; Beck & Steer, 1990), a 21-item self-report scale in which participants indicate to what extent they have experienced a variety of anxiety symptoms. Items were rated on a 3-point Likert scale (0= *Not at all*, 3= *Severely: I could barely stand it*) and scores were summed to compose a single score ( $\alpha = .91$ ). (See table 1 for all descriptive statistics and intercorrelations).

**Depressive symptoms.** Depressive symptoms were assessed using the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977), a 20-item self-report scale in which participants indicate to what extent they have experienced feelings of guilt and worthlessness, loss of appetite, psychomotor retardation, sleep disturbance, and depressive mood. Items were rated on a scale from 0 (e.g., *rarely or none of the time (less than one day a week)*) to 3 (e.g., *most of the time (5-7 days per week)*) and scores were summed to compose a single score ( $\alpha = .91$ ).

**Emotional Intelligence.** Emotional intelligence was assessed using an internet version of the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT, V2.0; Mayer et al., 2003). The MSCEIT was scored using the consensus method in which participants are given credit for a correct answer based on responses of a normative sample. Reported here is the Total EI score and the two Area EI scores (Experiential Area EI and Strategic Area EI). The psychometric properties of the MSCEIT have been described elsewhere (Mayer et al., 2003).

### **Procedure**

The study was completed in two sessions. During the first session, participants completed an online version of the MSCEIT. During the second session, participants completed a questionnaire measuring anxiety and depressive symptoms. The average time between the first and the second session was 3 days and the range was 1-7 days. Informed consent was maintained throughout the study and all procedures were approved by the local Institutional Review Board.

### **Results**

To test whether gender moderates the link between emotional intelligence and mood disorder symptoms, we mean-centered all continuous variables and entered the main effect of EI, the main effect of effect-coded gender, and the two-way interaction between EI and gender in a

series of regression analysis as predictors of mood disorder symptoms. Specifically, we conducted this analysis for each of the three EI scores (i.e., Total EI, Strategic Area EI, and Experiential Area EI), and for both of the mood disorder symptom outcomes (i.e., anxiety and depressive symptoms).

### **Anxiety Symptoms**

**Total Emotional Intelligence.** We first tested whether gender moderated the link between Total EI and anxiety symptoms. This analysis revealed a marginal main effect of Total EI such that higher Total EI was associated with fewer symptoms of anxiety,  $\beta = -.14$ ,  $t(171) = -1.81$ ,  $p = .073$ . There was also a marginal main effect of gender such that males reported somewhat fewer anxiety symptoms than females,  $\beta = -.14$ ,  $t(171) = -1.80$ ,  $p = .074$ . However, these two marginal main effects were qualified by a significant interaction between Total EI and gender,  $\beta = -.16$ ,  $t(171) = -2.16$ ,  $p = .032$ .

To decompose this interaction, simple-slopes analyses were used to examine values of Total EI at +/- 1SD from the mean (Aiken & West, 1991). As illustrated by Figure 1 (Panel A), Total EI was associated with fewer anxiety symptoms for men,  $\beta = -.31$ ,  $t(171) = -2.62$ ,  $p = .010$ , but was unrelated to anxiety symptoms for women,  $\beta = .03$ ,  $t(171) = .27$ ,  $p = .786$ . Additionally, while there was no difference in anxiety symptoms between men and women at low levels of Total EI,  $\beta = .03$ ,  $t(171) = .28$ ,  $p = .778$ , men with higher Total EI scores reported significantly fewer symptoms of anxiety than women with higher Total EI scores,  $\beta = -.31$ ,  $t(171) = -2.74$ ,  $p = .007$ .

**Strategic Area Emotional Intelligence.** Subsequently, we tested whether gender moderated the link between Strategic Area EI and anxiety symptoms. This analysis yielded a marginal main effect of Strategic Area EI such that higher Strategic Area EI was associated with fewer symptoms of anxiety,  $\beta = -.14$ ,  $t(171) = -1.84$ ,  $p = .068$ . There was also a marginal main effect of gender such that males reported somewhat fewer anxiety symptoms than females,  $\beta = -.14$ ,  $t(171) = -1.81$ ,  $p = .072$ . However, these two marginal main effects were qualified by a significant interaction between Strategic Area EI and gender,  $\beta = -.15$ ,  $t(171) = -2.01$ ,  $p = .046$ .

Simple-slopes analyses revealed that Strategic Area EI was associated with fewer anxiety symptoms for men,  $\beta = -.30$ ,  $t(171) = -2.55$ ,  $p = .012$ , but was unrelated to anxiety symptoms for women,  $\beta = .01$ ,  $t(171) = .13$ ,  $p = .899$  (Figure 1, Panel B). Additionally, while there was no difference in anxiety symptoms between men and women at low levels of Strategic Area EI,  $\beta = .02$ ,  $t(271) = .15$ ,  $p = .882$ , men with higher Strategic Area EI scores reported significantly

fewer symptoms of anxiety than women with higher Strategic Area EI scores,  $\beta = -.30$ ,  $t(171) = -2.63$ ,  $p = .009$ .

**Experiential Area Emotional Intelligence.** We then tested whether gender moderated the link between Experiential Area EI and anxiety symptoms. This analysis yielded a marginal main effect of Experiential Area EI such that higher Experiential Area EI was associated with fewer symptoms of anxiety,  $\beta = -.14$ ,  $t(171) = -1.83$ ,  $p = .069$ . There was also a marginal main effect of gender such that males reported fewer anxiety symptoms than females,  $\beta = -.14$ ,  $t(171) = -1.78$ ,  $p = .078$ . These two marginal main effects were qualified by a marginally significant interaction between Experiential Area EI and gender,  $\beta = -.13$ ,  $t(171) = -1.68$ ,  $p = .096$ .

Simple-slopes analyses revealed that Experiential Area EI was associated with fewer anxiety symptoms for men,  $\beta = -.28$ ,  $t(171) = -2.33$ ,  $p = .021$ , but was unrelated to depressive symptoms for women,  $\beta = -.01$ ,  $t(171) = -.12$ ,  $p = .907$  (Figure 1, Panel C). Additionally, while there was no difference in anxiety symptoms between men and women at low levels of Experiential Area EI,  $\beta = -.01$ ,  $t(171) = -.05$ ,  $p = .961$ , men with higher Strategic Area EI scores reported somewhat fewer symptoms of anxiety than women with higher Strategic Area EI scores,  $\beta = -.27$ ,  $t(171) = -2.39$ ,  $p = .018$ .

### **Depressive Symptoms**

**Total Emotional Intelligence.** We tested whether gender moderates the link between Total EI and depressive symptoms. This analysis yielded a significant main effect of Total EI such that higher Total EI was associated with fewer symptoms of depression,  $\beta = -.22$ ,  $t(171) = -2.81$ ,  $p = .006$ . However, this analysis yielded a non-significant main effect of gender,  $\beta = -.04$ ,  $t(171) = -.54$ ,  $p = .588$ , and a non-significant interaction between Total EI and gender,  $\beta = -.12$ ,  $t(171) = -1.51$ ,  $p = .132$  (Figure 2, Panel A).

**Strategic Area Emotional Intelligence.** We next tested whether gender moderated the link between Strategic Area EI and depressive symptoms. This analysis yielded a significant main effect of Strategic Area EI such that higher Strategic Area EI was associated with fewer symptoms of depression,  $\beta = -.22$ ,  $t(171) = -2.86$ ,  $p = .005$ . This analysis also yielded a non-significant main effect of gender,  $\beta = -.04$ ,  $t(171) = -.56$ ,  $p = .575$ . Finally, this analysis yielded a significant interaction between gender and Strategic Area EI,  $\beta = -.15$ ,  $t(171) = -1.99$ ,  $p = .048$ .

Simple-slopes analyses revealed that Strategic Area EI was associated with fewer depressive symptoms for men,  $\beta = -.38$ ,  $t(171) = -3.21$ ,  $p = .002$ , but was unrelated to depressive symptoms for women,  $\beta = -.07$ ,  $t(171) = -.66$ ,  $p = .580$  (Figure 2, Panel B).

Additionally, while there was no difference in anxiety symptoms between men and women at low levels of Strategic Area EI,  $\beta = .11$ ,  $t(171) = 1.04$ ,  $p = .299$ , men with higher Strategic Area EI scores reported marginally fewer symptoms of anxiety than women with higher Strategic Area EI scores,  $\beta = -.20$ ,  $t(171) = -1.76$ ,  $p = .080$ .

**Experiential Area Emotional Intelligence.** Finally, we tested whether gender moderated the link between Experiential Area EI and depressive symptoms. This analysis yielded a significant main effect of Experiential Area EI such that higher Strategic Area EI was associated with fewer symptoms of depression,  $\beta = -.19$ ,  $t(171) = -2.40$ ,  $p = .017$ . This analysis also yielded a non-significant main effect of gender,  $\beta = -.03$ ,  $t(171) = -.43$ ,  $p = .680$ , and a non-significant interaction between gender and Experiential Area EI,  $\beta = -.05$ ,  $t(171) = -.41$ ,  $p = .497$  (Figure 2, Panel C).

### Discussion

While theory suggests that emotional intelligence (EI) should be critically important for psychological health, the empirical literature linking ability-based assessments of EI and higher psychological health has been surprisingly mixed. A recent meta-analysis suggests that the link between ability-based EI and psychological health may be quite weak or even non-significant (Schutte et al., 2007). Based on these findings, we aimed to examine whether the ambiguous link between EI and psychological health could be clarified by taking into account an important third factor that may shape how emotional intelligence is developed and experienced over time – gender.

### Conceptual Implications

There are multiple conceptual implications of the present study. First, the interaction analyses in the present study demonstrated that gender largely moderates the relationship between ability-based EI and psychological health. When examining anxiety symptoms, all three EI scores (Total EI, Strategic Area EI, and Experiential Area EI) were associated with fewer symptoms for men, but not for women. When examining depressive symptoms, Strategic Area EI was associated with fewer symptoms for men, but not for women. Overall, this pattern of results suggests that while there is a robust link between EI and higher psychological health for men, there is a much weaker or even null relationship between EI and psychological health for women. This moderation by gender may help explain why the prior literature linking ability-based assessments of EI and psychological health has been relatively mixed.

Second, we also found that the moderating effect of gender was somewhat stronger for the links between the Strategic Area of EI and psychological health, particularly with regard to depressive symptoms. This is not surprising given that the Strategic Area concerns the ability to understand and regulate emotions, which may be more relevant for maintaining psychological health compared to abilities involved in the Experiential Area of EI (e.g., the perception of emotion). Specifically, this Area assesses the ability to adaptively adjust to changing environmental demands and cope with the stress of daily life, skills that are known to protect and improve psychological health (Brackett & Salovey, 2006).

Third, in addition to the moderation by gender, however, the present results also suggest that there may still be a main effect between EI and psychological health. On average, individuals who scored high on EI reported significantly fewer depressive symptoms and marginally fewer anxiety symptoms. This is inconsistent with the meta-analysis of Schutte et al. (2007), which showed an overall null effect of the relationship between ability EI and psychological health. How do we reconcile our findings with this meta-analysis? The studies included in the meta-analysis oversampled female participants (e.g., it is common to collect data from psychology students, who are on average, more likely to be female), which could have weakened the ability to detect the differential pattern for men. It is also possible that the meta-analysis assessed females who actually experienced a negative link between EI and psychological health (e.g., if the female population was stressed and more sensitive to that stress as a result of being more emotionally perceptive; Ciarrochi et al., 2002), and this could balance out with the positive link for the males to yield the null main effect. Overall, the results of the present investigation join other findings that support a main effect between EI and psychological health. However, this main effect was qualified by a significant interaction by gender, which strongly suggests that gender should be taken into account in future research on the link between EI and psychological health.

Fourth, these results suggest that men benefit more from having a higher EI than women and while it was beyond the scope of the current investigation to assess the mechanism behind this effect, we propose here a few possible explanations. First, men may receive more social support than women for having a higher EI, which may translate to more psychological benefits. This pattern is consistent with the finding that men (but not women) reap social benefits as a function of their higher EI (Brackett et al., 2006). Second, women are more likely to ruminate about their emotions (Nolen-Hoeksema, 1987), which could negate the benefit of having higher EI (Brody & Hall, 2008). Thus, while higher EI could be related to using more effective coping

strategies overall (Salovey, Bedell, Detweiller, & Mayer, 2000), gender differences in emotional processes like rumination or self-blame could interfere with the regulatory benefits of higher EI.

These results indicate that key contextual variables moderate the main effect of EI on psychological health. Thus, these results strongly suggest that future research should move beyond only assessing main effects of EI and various outcomes given how divergent the pattern between EI and outcomes can be when taking moderating factors into account.

### **Practical Implications**

There are also multiple practical implications of the present study. First, this research is consistent with a larger body of work suggesting that gender differentially shapes our emotional lives (Shields, 2002). Differences in EI likely begin in childhood, shaped by the child-parent interaction. Children learn how to express and regulate their emotions in interaction with adults (Haden, Haine, & Fivush, 1997), which likely contributes to women displaying more differentiation and complexity in their emotional awareness and reporting more intense and more frequent emotions than men (Barrett et al., 2000; Grossman & Wood, 1993). Practically speaking, the MSCEIT may not take these gender differences into account and might be more sensitive to the emotional abilities of men (Brackett et al., 2006). While there are limitations to any assessment of EI (see Mayer, Roberts, & Barsade, 2008, for a discussion), it is possible that the MSCEIT may be differentially effective by gender, thus underscoring the need for a more generalizable measure of EI.

Second, the present results indicate that EI predicts lower depression and anxiety in men, suggesting that men could preferentially benefit from having a higher emotional intelligence. Therefore, it could be particularly productive to teach EI abilities to men. By encouraging and teaching boys to strengthen their abilities to use, perceive, understand and regulate their emotions, we may be able to set them on an adaptive trajectory that promotes long-term psychological health benefits.

Third, the present results indicate that while women have a higher EI in general, they don't necessarily benefit from it. This is possibly due to women being more likely to use strategies by which they passively focus their attention on negative affect, which could negate the benefit of having higher EI (Nolen-Hoeksema, 2002). It is also possible that women are less socially-rewarded for their higher EI (Brackett et al., 2006). To be able to strengthen the link between women's EI and their psychological health, it may be necessary to improve the use of adaptive

emotion regulation strategies or facilitate a more supportive social environment in which women are employing their EI.

### **Limitations and Future Directions**

This research suggests that gender is an additional third factor that can shape the link between EI and psychological health. Our findings, however, are exploratory and can be extended in different ways. First, we used a sample of college-age students that was relatively ethnically homogeneous. Therefore, the findings should be replicated with participants of more varied ages and ethnicities to be able to generalize these patterns to more diverse populations.

Second, because the current study was part of a larger research project, we were limited in our measurements of psychological health. Future research could include more and different measurements of psychological health and well-being. Given that anxiety and depressive symptoms are indices of 'ill-being', it would be meaningful to assess indices of 'well-being' (e.g., satisfaction with life and positive mood).

Third, future research would benefit from examining other contextual factors that could moderate the link between EI and psychological health. In this study, we assessed gender, but there may be other key moderators. For example, different cultures value different emotional experience and emotion regulation strategies (Tsai, Knutson, & Fung, 2006; Gross & John, 2003), which may shape whether EI predicts psychological health more vs. less strongly. Also, it could be important to look at individuals' levels of personal resources in shaping the benefit of EI. Thus socioeconomic status could be a second possible key factor that shapes the link between EI and psychological health. A third potential moderator could be life stress, given the links between stress, emotion regulation skills, and psychological health (Troy, Wilhelm, Shallcross, & Mauss, 2010). Research has established a significant link between EI and psychological health, so life stress could be an important factor in understanding the link between EI and psychological health.

Fourth, as a preliminary investigation, the present study did not identify the mechanism behind why gender moderates the link between EI and psychological health. This mechanism – whether it be developmental or social in origin – should be thoroughly assessed in future studies.

### **Concluding comment**

This study provides evidence for the importance of assessing gender differences in studies investigating emotional intelligence and psychological health. EI appears to preferentially benefit depression and anxiety symptoms for men, suggesting that EI may be a particularly important ability for men, perhaps helping them adjust to environmental demands more adaptively. Thus,



while promoting EI in men may be particularly beneficial for their psychological health, it is also necessary to understand why EI does not appear to be helping women as effectively.

### References

- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Newbury Park, CA: Sage.
- Barrett, L. F., Robin, L., Pietromonaco, P. R., & Eyssell, K. M. (1998). Are Women the "More Emotional" Sex? Evidence From Emotional Experiences in Social Context. *Cognition & Emotion*.
- Barrett, L. F., Lane, R. D., Sechrest, L., & Schwartz, G. E. (2000). Sex differences in emotional awareness. *Personality and Social Psychology Bulletin*, 26(9), 1027-1035.
- Beck, A. T. & Steer, R. A. (1990). *Manual for the Beck Anxiety Inventory*. The Psychological Corporation: San Antonio, Tex.
- Brackett, M. A., & Mayer, J. D. (2003). Convergent, discriminant, and incremental validity of competing measures of emotional intelligence. *Personality and social psychology bulletin*, 29(9), 1147-1158.
- Brackett, M. A., Mayer, J. D., & Warner, R. M. (2004). Emotional intelligence and its relation to everyday behavior. *Personality and Individual differences*, 36(6), 1387-1402.
- Brackett, M. A., Rivers, S. E., Shiffman, S., Lerner, N., & Salovey, P. (2006). Relating emotional abilities to social functioning: a comparison of self-report and performance measures of emotional intelligence. *Journal of personality and social psychology*, 91(4), 780.
- Brackett, M. A., & Salovey, P. (2006). Measuring emotional intelligence with the Mayer-Salovey Caruso Emotional Intelligence Test (MSCEIT). *Psicothema*, 18(Suplemento), 34-41.
- Brody, L. R., & Hall, J. A. (2008). Gender and emotion in context. *Handbook of emotions*, 3, 395-408.
- Ciarrochi, J., Deane, F. P., & Anderson, S. (2002). Emotional intelligence moderates the relationship between stress and mental health. *Personality and individual differences*, 32(2), 197-209.
- Fivush, R., Brotman, M. A., Buckner, J. P., & Goodman, S. H. (2000). Gender differences in parent child emotion narratives. *Sex roles*, 42(3-4), 233-253.
- Ghorbani, N., Bing, M. N., Watson, P. J., Davison, H. K., & Mack, D. A. (2002). Self-reported emotional intelligence: Construct similarity and functional dissimilarity of higher-order processing in Iran and the United States. *International Journal of psychology*, 37(5), 297-308.
- Girdler, S. S., Turner, J. R., Sherwood, A., & Light, K. C. (1990). Gender differences in blood pressure control during a variety of behavioral stressors. *Psychosomatic Medicine*, 52, 571-591.

- Gohm, C. L., Corser, G. C., & Dalsky, D. J. (2005). Emotional intelligence under stress: Useful, unnecessary, or irrelevant?. *Personality and Individual Differences, 39*(6), 1017-1028.
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: implications for affect, relationships, and well-being. *Journal of personality and social psychology, 85*(2), 348.
- Grossman, M., & Wood, W. (1993). Sex differences in intensity of emotional experience: a social role interpretation. *Journal of personality and social psychology, 65*(5), 1010.
- Haden, C. A., Haine, R. A., & Fivush, R. (1997). Developing narrative structure in parent-child reminiscing across the preschool years. *Developmental psychology, 33*(2), 295.
- Hall, J. A. (1984). *Nonverbal sex differences: Communication accuracy and expressive style*. Baltimore: Johns Hopkins University Press.
- Head, C. (2002). *Revealing moods: a diary study of everyday events, personality and mood*. Unpublished senior thesis, Yale University.
- Humpel, N., Caputi, P., & Martin, C. (2001). The relationship between emotions and stress among mental health nurses. *Australian and New Zealand Journal of Mental Health Nursing, 10*(1), 55-60.
- Jaušovec, N., & Jaušovec, K. (2005). Differences in induced gamma and upper alpha oscillations in the human brain related to verbal/performance and emotional intelligence. *International Journal of Psychophysiology, 56*(3), 223-235.
- Joseph, D. L., & Newman, D. A. (2010). Emotional intelligence: an integrative meta-analysis and cascading model. *Journal of Applied Psychology, 95*(1), 54.
- Mayer, J. D., Caruso, D. R., & Salovey, P. (1999). Emotional intelligence meets traditional standards for an intelligence. *Intelligence, 27*(4), 267-298.
- Mayer, J. D., Caruso, D. R., & Salovey, P. (2000). Selecting a measure of emotional intelligence: The case for ability scales. In R. Bar-On & J. D. A. Parker (Eds.), *The handbook of emotional intelligence*. (pp. 320-342). New York: Jossey-Bass.
- Mayer, J. D., Salovey, P., Caruso, D. R., & Sitarenios, G. (2001). Emotional intelligence as a standard intelligence. *Emotion (Washington, D.C.), 1*(3), 232-242.
- Mayer, J. D., Salovey, P., Caruso, D. R., & Sitarenios, G. (2003). Measuring emotional intelligence with the MSCEIT V2.0. *Emotion, 3*(1), 97-105.
- Mayer, J. D., Roberts, R. D., & Barsade, S. G. (2008). Human abilities: emotional intelligence. *Annual review of psychology, 59*, 507-536.
- Nolen-Hoeksema, S. (1987). Sex differences in unipolar depression: evidence and theory. *Psychological bulletin, 101*(2), 259.

- O'Connor, R. M., & Little, I. S. (2003). Revisiting the predictive validity of emotional intelligence: Self-report versus ability-based measures. *Personality and Individual Differences, 35*(8), 1893-1902.
- Radloff, L. S. (1977). The CES-D scale a self-report depression scale for research in the general population. *Applied psychological measurement, 1*(3), 385-401.
- Rotter, N. G., & Rotter, G. S. (1988). Sex differences in the encoding and decoding of negative facial emotions. *Journal of Nonverbal Behavior, 12*(2), 139-148.
- Salovey, P., Bedell, B. T., Detweiller, J. B., & Mayer, J. D. (2000). Coping intelligently: emotional intelligence and the coping process. In C. R. Snyder (Ed.), *Coping: the psychology of what works* (pp. 141-164). New York: Oxford University Press.
- Sanchez-Nunez, M., Fernandez-Berrocal, P., Montanes, J., & Latorre, J. M. (2008). Does Emotional Intelligence Depend on Gender? The Socialization of Emotional Competencies in Men and Women and Its Implications. *Electronic Journal of research in educational psychology, 6*(2), 455-474.
- Schutte, N. S., Malouff, J. M., Thorsteinsson, E. B., Bhullar, N., & Rooke, S. E. (2007). A meta analytic investigation of the relationship between emotional intelligence and health. *Personality and Individual Differences, 42*(6), 921-933.
- Shields, C. M. (2004). Dialogic leadership for social justice: Overcoming pathologies of silence. *Educational Administration Quarterly, 40*(1), 109-132.
- Shields, S. A. (2002). *Speaking from the heart: Gender and the social meaning of emotion*. Cambridge University Press.
- Troy, A. S., Wilhelm, F. H., Shallcross, A. J., & Mauss, I. B. (2010). Seeing the silver lining: cognitive reappraisal ability moderates the relationship between stress and depressive symptoms. *Emotion (Washington, D.C.), 10*(6), 783-795.
- Tsai, J. L., Knutson, B., & Fung, H. H. (2006). Cultural variation in affect valuation. *Journal of personality and social psychology, 90*(2), 288.
- Tsaousis, I., & Nikolaou, I. (2005). Exploring the relationship of emotional intelligence with physical and psychological health functioning. *Stress and Health, 21*(2), 77-86.

### Appendices

Table 1

*Descriptive statistics and intercorrelations for study variables*

	Descriptive statistics		Intercorrelations					
	<i>M</i>	<i>SD</i>	Gender†	Emotional Intelligence	Strategic Area EI	Experiential Area EI	Anxiety symptoms	Depressive symptoms
<b>Gender†</b>	53.7 % female		-					
<b>Total EI</b>	101.33	11.57	-.25**	-				
<b>Strategic Area EI</b>	102.35	13.78	-.24**	.81**	-			
<b>Experiential Area EI</b>	99.35	7.84	-.25**	.92*	.52*	-		
<b>Anxiety symptoms</b>	8.70	7.69	-.11	-.09	-.09	-.09	-	
<b>Depressive symptoms</b>	14.38	9.76	.01	-.21**	-.21*	-.19*	.54**	-

*Note:* \* $p < .05$ , \*\* $p < .01$ ; †female=0, male =1; EI = Emotional Intelligence.

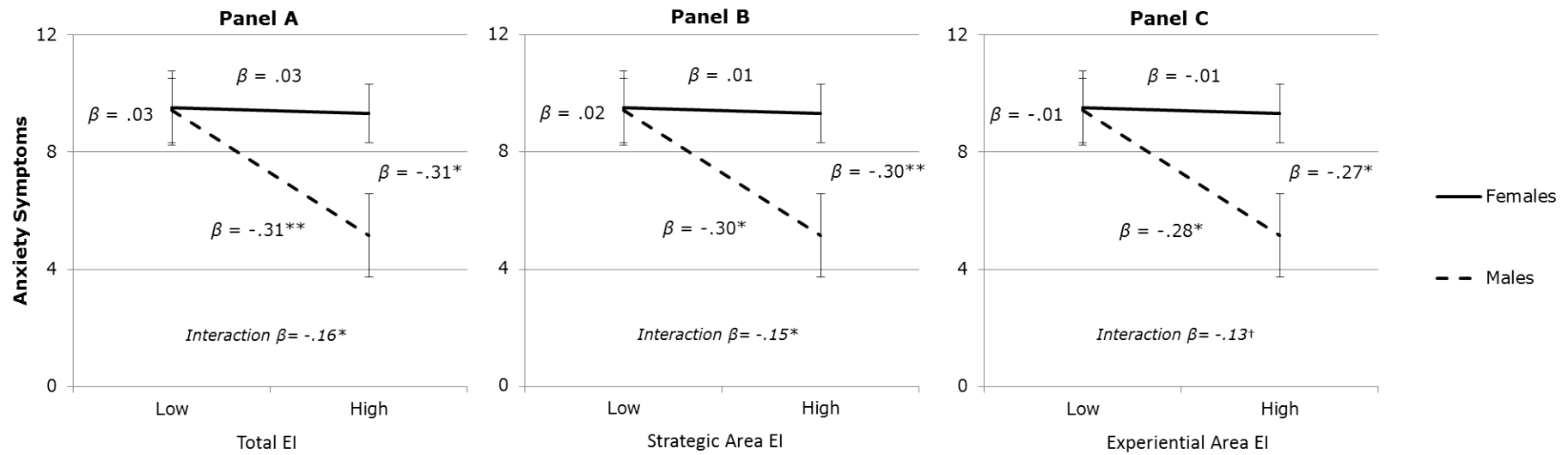


Figure 1. Gender moderates the link between EI and anxiety symptoms. The figure depicts the two-way interaction between low and high values (-/+ 1SD from the mean) of the three EI scores (Total EI, Strategic Area EI and Experiential Area EI) and gender (males vs. females) in predicting anxiety symptoms. Error bars represent one standard error of the mean. Note:  $*p < .05$ ,  $**p < .01$ ,  $^\dagger p < .10$

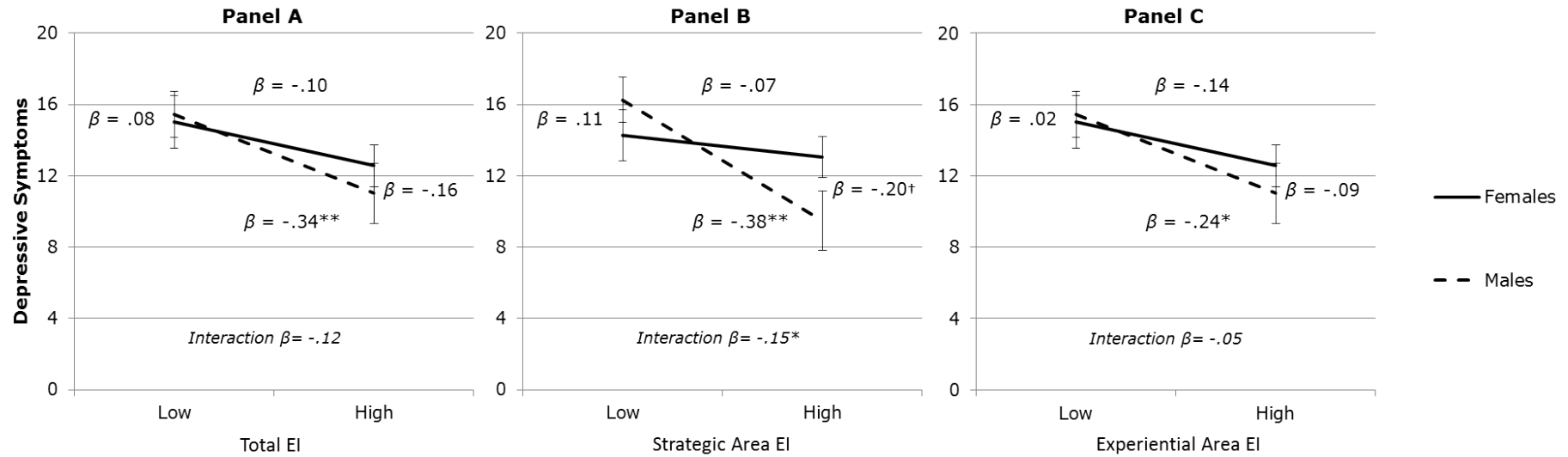


Figure 2. Gender moderates the link between EI and depressive symptoms. The figure depicts the two-way interaction between low and high values (-/+ 1SD from the mean) of the three EI scores (Total EI, Strategic Area EI and Experiential Area EI) and gender (males vs. females) in predicting depressive symptoms. Error bars represent one standard error of the mean. Note:  $*p < .05$ ,  $**p < .01$ ,  $^{\dagger}p < .10$

