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Investigating the interaction between gender, age, and emotional intelligence: Results for the situational judgement paradigms

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ABSTRACT

Emotional intelligence (EI), a concept with roots in social and multiple intelligence theories (Petrides, 2011), reflects the capability of using emotions to aid reasoning, and reasoning accurately about emotions (Mayer, Roberts, & Barsade, 2008). Incorporating four central abilities: perceiving, using, understanding, and managing emotions (Mayer & Salovey, 1997), it can be measured as an ability or trait (Petrides & Furnham, 2006). The Situational Tests of Emotional Understanding and Emotion Management (STEU, STEM; MacCann & Roberts, 2008) are the most promising ability EI measures, possessing theoretical bases. Many researchers have sought to investigate the relation of demographic characteristics to EI, with inconsistent results. The present study consisted of 159 participants (67 male, 92 female) and used STEU and STEM short-forms to assess the interaction between gender, age and EI. A 2x4 Factorial ANOVA was conducted for both of the instruments. Results showed no significant gender difference in EI on either the STEU or STEM, as well as no significant interaction effect. A significant effect of age on EI was found on both measures, with EI scores highest among 36-45 year olds. The STEU and STEM instruments held acceptable levels of internal reliability. Results did not comply with the popular assumption that women are more emotionally intelligent. Findings illustrate a developmental trajectory of EI, similar to that of other intelligences. Further research should be conducted to determine whether gender, age, and EI significantly interact.

KEY WORDS:	EMOTIONAL INTELLIGENCE	STEU	STEM	GENDER	AGE

Introduction

The concept of emotional intelligence (EI) can be traced back to the workings of Thorndike (1920 - as cited in Alumran & Punamäki, 2008; Harrod & Scheer, 2005) and his theorising of social intelligence. Thorndike coined this term as referring to the capacity to understand and manage people and display wisdom in our relationships (Matthews, Zeidner, & Roberts, 2002; Petrides, 2011). Further advocating the existence of an affective aspect of intelligence was Gardner (1983 - as cited in Petrides & Furnham, 2001): the proximal roots of EI are believed to lie in his theory of multiple intelligences - namely, the types of intelligence he defined as intrapersonal and interpersonal (Adeyemo, 2008; Goleman, 1996; Nasir & Masrur, 2010; Petrides, 2011; Petrides, Furnham, & Frederickson 2004).

Whereas some believe emotionality to inhibit our capacity to think logically and rationally (e.g. Heymans, 1910 - as cited in Brody, 2001), others would have it that emotions in fact possess a motivational purpose, serving to arouse, sustain, and direct activity (Leeper, 1948 - as cited in Reiff, Hatzes, Bramel, & Gibbon, 2001; Leahy, 2007 - as cited in Matthews, Zeidner, & Roberts, 2012; Brody, 2001; Goleman, 1996). In fact, the contemporary view of this relationship is one that stresses a harmony between head (rationality) and heart (emotionality), leading to adaptive functioning (Mandler, 1975; Simon, 1982 - as cited in Salovey & Mayer, 1990; Salovey & Grewal, 2005 - as cited in Schutte, Malouff, Thorsteinsson, Bhullar, & Rooke, 2007; Goleman, 1996, 1999; Mayer, Salovey, Caruso, & Cherkasskiy, 2011). Attention was also brought to the notion that there is intelligence within emotions, and the sense that intelligence can also be brought to emotions (Goleman, 1996). Following then, the theory of emotional intelligence encompasses both the capacity to use emotions and emotional knowledge to enhance cognitive processes, and also the ability to carry out accurate reasoning regarding emotions (Mayer, Roberts, & Barsade, 2008).

As a relatively recent concept for assessing individual differences, EI has been the subject of fervent research activity and general interest (Austin, 2010; Matthews et al., 2002; Petrides et al., 2004). The phrase emotional intelligence had been present within the literature for many years prior to this surge of interest (Leuner, 1966 - as cited in Petrides, 2011). However, it was only in the midst of such dynamic investigation that scientific conceptualisations of the construct began to appear (Mayer, DiPaolo, & Salovey, 1990; Salovey & Mayer, 1990).

Outside of scientific inquiry, in the lay public, EI rose to prominence following the publication of Goleman's (1996) book entitled *'Emotional Intelligence'*, which generated global interest in the concept, resulting in the title becoming one of the best-selling popular psychology books of all time (Bar-On, 2006; Matthews, Zeidner, & Roberts, 2011; Nasir & Iqbal, 2009; Nazari & Emami, 2012; Petrides, 2011). Goleman (1996, 1999) viewed EI as 'a different way of being smart', one that reflects an individual's self-motivation, self-control, and capacity to recognise feelings and manage emotions both in ourselves and others (Adeyemo, 2008; Nasir & Masrur, 2010).

The most widely established theoretical definition of emotional intelligence was provided in 1997 by Peter Salovey and Jack Mayer, with equal emphasis afforded to

both intelligence and emotions (Maltby, Day, & Macaskill, 2007; Mayer, Salovey, & Caruso, 2004). As such, their definition depicts EI as a construct that involves "the ability to perceive accurately, appraise, and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; and the ability to regulate emotions to promote emotional and intellectual growth" (Mayer & Salovey, 1997, p. 10). Broadly defined, it encompasses a range of skills and aptitudes that facilitate a person's management of emotive encounters, enabling them to work towards certain goals as well as wisely accepting and overcoming the reverses of life (Goleman, 1999; Matthews et al., 2002, 2011; Zeidner, Matthews, & Roberts, 2009). It is this capacity which serves to enforce EI's status as a member of an emerging group of 'hot' intelligences, operating on cognitions that deal with matters of personal and emotional significance to the individual (Abelson, 1963; Mayer & Mitchell, 1998; Zajonc, 1980 - as cited in Mayer et al., 2004; Mayer, Caruso, & Salovey, 1999).

In terms of describing the typical emotionally intelligent individual, they who appropriately process and utilise affect-laden information of both an interpersonal and intrapersonal nature are often believed to correspond to this label (Petrides & Furnham, 2006; Reiff et al., 2001). Such an individual is capable of recognising and pursuing effective, sophisticated ways of coping, for instance less rumination and more emotional disclosure within a larger network of social support (Salovey et al., 2000 - as cited in Matthews et al., 2002). Worryingly, those individuals who struggle to recognise emotions within the self, may find themselves incapable of planning their life in a way that fulfils them emotionally. A deficit like this could lead to a life comprised of unfulfilling experiences, with potentially detrimental effects on well-being (Skinner, 1986 - as cited in Salovey & Mayer, 1990). A society awash with such individuals could therefore prove very problematic.

Emotional intelligence has repeatedly been shown to be beneficial in many diverse walks of life, with numerous practical applications (Nasir & Masrur, 2010; Nazari & Emami, 2012; Tsaousis & Kazi, 2013). Well-being and life satisfaction, for instance, have frequently been found to correlate positively with EI (Austin, 2010; Burrus et al., 2012; Warwick & Nettelbeck, 2004; Zeidner et al., 2009). Alternatively, evidence from preliminary studies indicate low EI to be one of a number of factors associated with involvement in harmful, self-destructive behaviours such as alcohol and drug abuse, and deviance (Brackett, Mayer, & Warner, 2004).

Ultimately however, the most cited domain in which the application of EI has proved useful is indubitably the workplace (e.g. Lopes, Salovey, & Straus, 2003; Nazari & Emami, 2012; Van Rooy, Alonso, & Viswesvaran, 2005; Warwick, Nettelbeck, & Ward, 2010). Goleman (1996, 1999) even goes so far as to say that the assessment and promotion of EI within employees should be considered of paramount importance in light of the increasingly competitive job market and the impression that EI can be more easily learnt than traditional intelligence (Matthews et al., 2011). In virtually all workplace environments, employees will take their emotional cues from the boss, the person at the top (Goleman, Boyatzis, & McKee, 2011). Therefore, a leader who works by their emotions, using them appropriately and effectively in self and relations, is more likely to generate increased productivity among employees, inspire teamwork, and boost the commitment and morale of their workforce (Adeyemo, 2008; Goleman et al., 2011; Matthews et al., 2002, 2011).

Besides the workplace, EI has been claimed to provide "an advantage in any domain in life" (Goleman, 1996, p. 36), and is often regarded as a more significant indicator of success in one's profession and life in general than is traditional intelligence (IQ) (Goleman, 1999; Matthews et al., 2002; Reiff et al., 2001).

Back on scientific terms, the providing of a theoretical definition for EI initiated many attempts to support this with an accurate model of what comprises the construct. Within current research on emotional intelligence, there are three principal models (Bar-On, 2006; Tsaousis & Kazi, 2013). Again, Goleman (2001 - as cited in Maltby et al., 2007) has been a leading figure in this aspect. He classified four domains of EI, representative of four separate emotional competencies: self-awareness, self-management, social awareness, and relationship management. These abilities were further divided according to whether they refer to a personal or social competence, and whether they reflect recognition (awareness) or regulation (management) of emotions (Matthews et al., 2011). Another key exponent of EI, Bar-On (2006), identified five major domains - intrapersonal skills, interpersonal skills, adaptability, stress-management, and general mood - that comprise 15 separate aspects.

Nevertheless, Mayer and Salovey have been and continue to be most pivotal and prolific in the advancement of EI (Matthews et al., 2002): the model they presented in 1997 is generally the most accepted theoretical model available (Cherniss, 2010 - as cited in Petrides, 2010; Allen, Weissman, Hellwig, MacCann, & Roberts, 2014). Covering four 'branches' of EI, it embodies the ability to accurately perceive and express emotions, use them to facilitate thought, understand emotions, and also manage them (Mayer & Salovey, 1997). The model assumes to represent these emotional competencies as a hierarchy, increasing in complexity from simple perception and expression, to more complex management of emotions (Mayer et al., 2008). Empirical support exists (e.g. Mayer, Salovey, Caruso, & Sitarenios, 2003 - as cited in MacCann, 2006; Maltby et al., 2007) to support the division of EI into an experiential area (collectively the perception and facilitation branches) and a strategic area (the understanding and management branches).

These advances in the theoretical account of EI were soon followed by an endeavour to develop viable measures of this new and promising construct (Petrides, 2011; Petrides & Furnham, 2001). As research into emotional intelligence has progressed, the concept has diverged into two separate concepts: trait EI and ability EI (Matthews et al., 2011; Petrides, Furnham, & Mavroveli, 2007; Tsaousis & Kazi, 2013). Almost all relevant empirical studies demonstrate a pronounced conceptual distinction between trait and ability EI (Pérez, Petrides, & Furnham, 2005; Petrides & Furnham, 2000a, 2000b), with this disparity reflected in the low correlations found between the measures (e.g. O'Connor & Little, 2003 - as cited in Petrides et al., 2004; Warwick & Nettelbeck, 2004).

Such a distinction is only to be expected though, as the concepts utilise different methods of measurement. Trait EI, a measure of typical performance, is embedded within the personality framework and best operationalised by self-report tests (Petrides & Furnham, 2000b, 2001). Conversely, ability EI measures maximal performance, relates to information-processing, cognitive ability, and is best operationalised by performance-based measures with correct and incorrect

responses (Austin, 2010; Mayer et al., 1999; Petrides, 2011; Petrides & Furnham, 2000a). Therefore, said conceptual distinction denotes that, unlike the universal tests of IQ, there is currently no single test of EI that yields a comprehensive, all-encompassing 'emotional intelligence score', and in fact there may never be one (Goleman, 1996).

Many tests have been devised to measure trait EI - most notably, Bar-On's Emotional Quotient Inventory (EQ-i; Bar-On, 1997, 2000 - as cited in Pérez et al., 2005), Goleman's Emotional Competence Inventory (ECI; Goleman & Boyatzis, 2005 - as cited in Maltby et al., 2007), and the Trait Emotional Intelligence Questionnaire (TEIQue; Petrides, 2001 - as cited in Pérez et al., 2005). Despite the fact these tests are relatively easy and quick to administer, an inherent concern with self-report measures is the honesty and reliability of response as people unconsciously tend to enhance their strengths and minimise their weaknesses (Alumran & Punamäki, 2008; Matthews et al., 2002, 2011). Petrides et al. (2004) claim that the future of EI exists in its conceptualisation as a personality trait - bold, considering trait EI measures tend to lack adequate discriminant validity, overlapping greatly with existing personality tests (Lopes et al., 2003; Matthews et al., 2002).

The issue of discriminant validity which plagues trait EI measures does not characterise ability-based measures of EI, as these scales tend to be largely independent from intelligence and personality, and therefore appear to measure a new construct (MacCann, Matthews, Zeidner, & Roberts, 2003). It is commonly postulated that such performance-based tests appear the most promising measures for the future development of the EI construct (e.g. Matthews et al., 2002; Mayer et al., 1999, 2004, 2008). However, such tests are lengthy, complicated to administer, and also lack veridical scoring criteria due to the essential subjectivity of emotional experience (Matthews et al., 2002; Pérez et al., 2005; Petrides, 2011; Petrides et al., 2007). In fact, ability EI measures such as the prominent Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT; Mayer, Salovey, & Caruso, 2002; Mayer et al., 2003 - as cited in Mayer, Salovey, & Caruso, 2012) often have problems in their scoring method (Ferguson & Austin, 2011).

With this in mind, MacCann and Roberts' (2008) formulation of the Situational Test of Emotional Understanding (STEU) and the Situational Test of Emotion Management (STEM) appears a promising development in the field of ability EI research, as well as EI in general (Austin, 2010; MacCann et al., 2003; Matthews et al., 2012). Assessing the higher two branches of Mayer and Salovey's four-branch model (Strategic EI) (Allen et al., 2014), these two instruments are constructed and scored based on theory and methodology not often applied in this field (MacCann, 2006).

The STEU is a measure of a person's "ability to comprehend emotional information about relationships, transitions from one emotion to another, and convey linguistic information about emotions" (Mayer et al., 2003, p. 235 - as cited in MacCann, 2006; Mayer & Salovey, 1997). Primarily, it is about knowing which emotions generally accompany certain situations - for instance, loss produces sadness. Taking this into consideration, MacCann and Roberts believed that using Roseman's (2001) appraisal theory of emotion to create test items would give the STEU instrument theoretical basis (MacCann, 2006; MacCann & Roberts, 2008).

Roseman's theory proposes that a person's emotional reaction is derived from elements of their appraisal of the emotion-generating situation. Thus, relief is associated with perceiving an unpleasant situation as having stopped or been prevented, and similarly joy is predicted when a wanted situation is realised (Allen et al., 2014; Austin, 2010). The STEU itself consists of 42 multiple-choice questions which test respondents' knowledge of the most likely emotion to be generated in a range of different situations (MacCann & Roberts, 2008). Test items are phrased in either an abstract, context-less manner, or as analogues representing workplace and personal-life contexts, and response options represent numerous emotions such as sadness, relief, contempt, regret, surprise, frustration, anger, and fear (Austin, 2010; MacCann, 2006, 2010; MacCann & Roberts, 2008).

Conversely, the STEM is designed to assess a person's "knowledge of which strategies are most effective in managing specific emotional situations" (MacCann, 2006, p. 28) and is based on the situational judgement test (SJT) paradigm (MacCann & Roberts, 2008). As such, individuals are presented with emotional scenarios and are required to select the 'best', most appropriate response for that person in that situation (MacCann, Wang, Matthews, & Roberts, 2010; Matthews et al., 2012). The use of such realistic scenarios provides rich context and ecological validity (Matthews et al., 2011, 2012; Mayer et al., 2004; Orchard et al., 2009). Though administering of the STEM is possible via rate-the-extent format, it is most commonly and effectively administered as a multiple-choice test (Nguyen & McDaniel, 2003 - as cited in MacCann, 2006). Comprising 44 multiple-choice items, the instrument assesses the management of three main emotions in work-life and personal-life contexts: fear, anger, and sadness (Ferguson & Austin, 2010, 2011; MacCann & Roberts, 2008; Orchard et al., 2009).

Unlike standard cognitive ability tests, there are no clear cut scoring criteria for ability EI measures as to what constitutes a correct response (Matthews et al., 2002). In fact, the inherent subjectivity of emotional experience means that applying truly objective criteria in scoring EI is a particularly difficult task (Mayer & Salovey, 1995; Petrides & Furnham, 2001; Petrides et al., 2004). However, the STEU's use of an empirically-derived theory for scoring, namely appraisal theory, allows verification of correct answers and so gives this instrument an advantage over existing ability EI measures (Austin, 2010; Ferguson & Austin, 2011; MacCann, 2006). Likewise, as with tests of cognitive ability, the STEM uses expert scoring in an attempt to provide veridical criteria (McDaniel & Nguyen, 2001 - as cited in Orchard et al., 2009; Matthews et al., 2002). The STEM also has a standards-based scoring system, developed from a review of the effectiveness of various situation-specific coping strategies (MacCann, 2006).

As expected of measures of ability EI, both the STEU and STEM demonstrate discriminant validity from personality tests (Libbrecht & Lievens, 2012 - as cited in Allen et al., 2014; MacCann, 2006) and significant convergent validity with other measures of cognitive ability (Austin, 2010; MacCann & Roberts, 2008; Mayer et al., 2012). Test-retest reliability of both of the instruments is reasonable too (MacCann, 2010). Yet, as these two tests are still relatively new, they do not currently hold reliability and validity standards analogous to those of other well-established, pre-existing measures of ability EI (Maul, 2012). This should not discourage researchers

from using the STEU and STEM however, as both have valid theoretical bases and so should be considered key to the future development of EI.

Several researchers have sought to establish differences in emotional and intellectual abilities as a function of various socio-demographic variables including gender and age, to name but a few (Fernández-Berrocal, Cabello, Castillo, & Extremera, 2012). With regards to intelligence, males have consistently shown higher scores than females in studies of cognitive ability (e.g. MacCann, 2010; Petrides & Furnham, 2000a), and particularly so in relation to mathematical-logical and visuo-spatial IQ (e.g. Bennett, 1996; Furnham, Clark, & Bailey, 1999 - as cited in Petrides & Furnham, 2000a). There is strong scientific evidence to suggest the contrary in terms of emotionality (Fischer, 1998; Hess, Adams, & Kleck, 2004). In comparison to males, females are: more likely to ruminate on sad feelings (Nolen-Hoeksema, 1991 - as cited in Brody, 2001; Canary, Emmers-Sommer, & Faulkner, 1997); more empathic (Eisenberg & Lennon, 1983 - as cited in Brody, 2001; Graham & Ickes, 1997 - as cited in Goleman, 1999); more adept at reading both verbal and non-verbal emotional signals (Brody & Hall, 1993 - as cited in Goleman, 1996); and experience emotions with greater intensity (Grossman & Wood, 1993 - as cited in Robinson & Johnson, 1997).

Such findings endorse the prevailing gender stereotype that women are the more 'emotional' sex (e.g. Barrett & Bliss-Moreau, 2009; Fabes & Martin, 1991; Plant, Hyde, Keltner, & Devine, 2000; Shields, 2002), and also support the perception that rationality is a male trait and emotionality is a female trait (Petrides, Furnham, & Martin, 2004). This gender difference in emotionality is likely to have arisen due to the differential socialisation of emotions, particularly during early parent-child interactions and childhood (Brody, 1985 - as cited in Brackett et al., 2004; Goleman, 1999; Kelly & Hutson-Comeaux, 1999; Sanchez-Nunez, Fernández-Berrocal, Montanes, & Latorre, 2008). The impact of these practices accrues over time, leading to societal expectations of women to be empathic and possess ample social skills, whereas men are expected to show independence and aggressively pursue their life goals (Adeyemo, 2008). Our fascination with gender differences in emotion is also arguably reflected in popular literature, where titles such as *Men are from Mars, Women are from Venus* (Gray, 1993 - as cited in Reiff et al., 2001) have gone on to become bestsellers.

Emotional intelligence remains a relatively new concept in comparison to the fields of intelligence and emotion and so little research has been carried out thus far regarding group differences in EI scores (Van Rooy et al., 2005). Furthermore, although there is claimed to be a well-established gender difference in EI, a review of existing studies on this matter reveals inconsistent results (Nasir & Masrur, 2010). The majority of researchers examining this topic have all established results that confirm a gender difference, favouring females, across the four branches of Mayer and Salovey's (1997) model of EI (e.g. Adeyemo, 2008; Day & Carroll, 2004, Harrod & Scheer, 2005; Joseph & Newman, 2010; Mandell & Pherwani, 2003; Mayer et al., 1999; Reiff et al., 2001; Van Rooy et al., 2005). Equally however, there are a proportion of studies known to have found no significant evidence of any overall gender difference in EI (e.g. Bar-On, 1997, 2000 - as cited in Matthews et al., 2002; Çelık, & Denız, 2008; Gaitniece-Putāne, 2006; Nasir & Masrur, 2010). Goleman (1999) presents a potential justification for these conflicting findings, suggesting

there are more similarities than differences between the genders: each and every one of us has a 'personal profile' of strengths and weaknesses in emotional competence. Therefore, while on average women may score higher for a certain EI skill, there is likely to be some men who individually score better than most women.

As is to be expected, the influence of cultural values and accumulated life experience increasingly affect the expression and recognition of emotion throughout life (Brody, 2001; Mill, Allik, Realo, & Valk, 2009). Equally, our level of emotional intelligence is largely learned, continuing to develop as we progress through life and learn from our experiences (Çelık, & Denız, 2008; Goleman, 1999; Matthews et al., 2011). With age, we become more adept at handling our own emotions, less liable emotionally, and perfect our social proficiency (Robins, Fraley, Roberts, & Trzesniewski, 2001 - as cited in Petrides & Furnham, 2006).

Accordingly, a copious amount of research has indicated EI levels to increase as age increases (e.g. Fariselli, Ghini, & Freedman, 2008; MacCann, 2006; MacCann & Roberts, 2008; Mayer et al., 1999, 2004; Reiff et al., 2001; Van Rooy et al., 2005). Then again, there exist findings to the contrary which suggest no significant relationship between EI and age (e.g. Day & Carroll, 2004; Gaitniece-Putāne, 2006; Harrod & Scheer, 2005; Nasir & Masrur, 2010). Essentially, if EI is to be considered a legitimate form of intelligence then test scores must display a positive relationship with age, resembling that of other cognitive abilities (Mayer, Caruso, & Salovey, 2000 - as cited in Gignac, 2009).

Commonly observed in research assessing the developmental trajectory of EI is the finding that EI scores are highest among those aged 35-50, and subsequently decrease among older respondents (Bar-On, 1997; Derksen, Kramer, & Katzko, 2002 - as cited in Gaitniece-Putāne, 2006). This positive relationship can be explained by accumulated life experience, reflected in the assumption 'with age comes wisdom' (Mill et al., 2009). The decline in the later years of adult life, on the other hand, could be due to memory loss, cognitive slow-down, and deficient emotional perception skills.

In addition to predicting EI as independent dimensions, emerging research supposes that gender and age also combine, forming an interaction effect (Fernández-Berrocal et al., 2012; Van Rooy et al., 2005). Similar to that seen in research on cognitive abilities such as numerical and visuo-spatial skills (Halpern et al., 2007 - as cited in Fernández-Berrocal et al., 2012), age is considered a feasible mediator of the relation between gender and EI. With research of this nature still in its infancy however, findings are inconclusive as of yet. Gaitniece-Putāne (2006) and Van Rooy et al. (2005) failed to find any evidence of a significant interaction between gender, age, and emotional intelligence. Nonetheless, there were issues with a restriction of range in the samples used for these studies - the sample of the former study consisted of 20-25 and 30-35 year olds only; the latter study's sample had an age range of only 18-44 and consisted solely of undergraduate psychology students. Hence, with a varied sampling base, larger sample size and more diverse age range, an interaction effect has the potential to be observed in future studies.

The present study aimed to investigate gender and age differences in emotional intelligence, as well as examining the interaction between the two independent

domains. Measurement of EI takes the form of two ability measures: the Situational Test of Emotional Understanding, and the Situational Test of Emotion Management (STEU, STEM; MacCann & Roberts, 2008). Reason being, these instruments appear promising innovations due to their theoretical bases in test construction and scoring, and with item content being more ecologically valid (MacCann et al., 2003). The rationale for the current study was gathered from previous investigators (e.g. Day & Carroll, 2004; Mayer et al., 2004; Nazari & Emami, 2012; Van Rooy et al., 2005) asserting that further analysis should occur, with the aim to help clarify or refute the existence of differences in EI as a function of socio-demographic variables.

In light of reviewing the findings from existing literature, it was hypothesised that a gender difference would be observed in the opposite direction to that of IQ data, such that females would have higher EI scores than males. Further, age was expected to be positively related to EI in that scores would be higher among older respondents than for the younger generation. Also hypothesised, was that there would be an interaction effect between gender and age on emotional intelligence.

The implications of research with demographics and EI can be profound. Identification of a gender difference in EI in favour of females could potentially be used to lower adverse impact (MacCann, 2006, 2010). Findings illustrative of a developmental trajectory of EI would validate the claim that EI can be considered a legitimate form of intelligence (Mayer et al., 1999). Any evidence of gender and age interacting to predict EI likely would interest psychologists concerned with aging and developmental processes (Van Rooy et al., 2005).

Method

Design

The current study takes the form of a web-based survey containing two separate questionnaires assessing emotional intelligence. Across both the questionnaires, there are two independent variables. The first being gender, which has 2 levels (male, female), and the second being age, consisting of 4 levels denoting certain age ranges (18-25, 26-35, 36-45, 46-60). Such demographic information was sourced from each participant after informed consent was obtained, preceding commencement of the questionnaire section of the survey. The age range of 18 to 60 can be justified through various reasons: the study attempted to assess levels of emotional intelligence among adults, with those aged 18 and above adjudged to represent this category; individuals aged 18 or over were also able to give consent themselves; and it was expected, as with certain previous research (e.g. Fariselli et al., 2008), that difficulties would arise when attempting to gain participants above the age of 60.

Emotional intelligence served as the dependent variable and was measured in the form of the short-form versions of the STEU and STEM (adapted from MacCann & Roberts, 2008). Designed in such a way, the study was regarded as relevant and suitable for testing of the aforementioned research hypotheses, aiming to determine the effects of gender and age on emotional intelligence and assess whether an

interaction between the two independent variables (gender and age) could be observed.

Participants

The participants in this study were sampled by means of convenience, approached via email, social media, and word of mouth and invited to participate in the online survey. Such a sampling method proved to be straightforward, efficient, and economical. The majority of the sample was expected to consist of acquaintances of the researcher and fellow undergraduate students. A total of 159 individuals responded to the questionnaire, yet there were a further 66 people who failed to complete the survey for unknown reasons. There were slightly more females in the present sample ($N = 92$) compared to males ($N = 67$). Within each age range, the proportion of participants was relatively equivalent (18-25 = 57 participants, 26-35 = 37 participants, 36-45 = 27 participants, 46-60 = 38 participants). The representation of both males and females within each of these age ranges is shown in Table 1.1.

Table 1.1
The Proportion of Males and Females Constituting Each Age Range in the Sample

AGE	18-25 yrs	26-35 yrs	36-45 yrs	46-60 yrs
MALE	14	19	17	17
FEMALE	43	18	10	21

Materials

The web-based survey was composed using Bristol Online Survey. Shortened, concise versions of the information sheet (see Appendix 1) and consent declaration form (see Appendix 2) were included at the start of the survey. The information sheet provided the participant with key details regarding the current study. Consent was given by participants ticking a box in response to an explicit consent statement. Debrief forms (see Appendix 3) were also presented to participants, outlining the purpose and nature of the research, providing signposts to available sources of further support. Multiple-choice questions were used to gather relevant demographic information i.e. gender (male, female) and age range (18-25, 26-35, 36-45, 46-60). Web-versions of the STEU short-form (see Appendix 4) and STEM short-form (see Appendix 5), as adapted from MacCann and Roberts (2008), were used to measure emotional intelligence. MacCann and Roberts were prompted to produce these short-form versions of the two instruments as numerous researchers wished to use them in shorter studies of emotional intelligence, as is the case with this current study.

The Situational Test of Emotional Understanding (STEU) is a 25-item measure of emotional understanding consisting multiple-choice questions. Each question

describes a situation (either context-less, relating to personal life, or with a workplace context - MacCann, 2006) and the participant is asked to choose which out of the five emotions is most likely to result from that situation. For example, *"Xavier completes a difficult task on time and under budget. Xavier is most likely to feel? a) Surprise b) Pride c) Relief d) Hope e) Joy".* Here, the correct alternative would be '*b) pride*'. The scoring method used for the items within the STEU is derived from Roseman's (2001) empirical theory of appraisals. This theory provides a theoretical basis for scoring, and assumes that our appraisal of a situation, a combination of our perception and judgement, is responsible for eliciting of an emotion as well as for the differentiation of emotional responses (MacCann, 2006; Roseman, 2001). The original STEU 42-item instrument has frequently been found to have a Cronbach's alpha (α) value averaging .71 (MacCann & Roberts, 2008), whereas the reliability of the 25-item short-form version, as used in this study, varies anything between .67 and .81 (see technical report - MacCann & Roberts, n.d. - as adapted from MacCann & Roberts, 2008).

The Situational Test of Emotion Management (STEM) contains 20 items measuring emotion management via multiple-choice questions. Participants are again presented with an emotional situation in each question, but this time there are five different types of situation: chronic illness, acute illness, work-related situations, loneliness, or other interpersonal situations (MacCann, 2006). For this test, they are required to choose which out of the four responses they think would be the most effective course of action for that person in that situation which would allow them to manage their emotions and the problem the situation poses. For instance, *"Pete has specific skills that his workmates do not and he feels that his workload is higher because of it. What action would be the most effective for Pete? a) Speak to his boss about this b) Start looking for a new job c) Be very proud of his unique skills d) Speak to his workmates about this".* The items that constitute the STEM were constructed according to the Situation Judgement paradigm and scored through expert judgement (MacCann, 2006; MacCann & Roberts, 2008). Utilising a situation-based method of assessment offers a rich real-life context to test items and enhances ecological validity (Orchard et al., 2009). In the current study, the response with the highest expert-scoring weight for each question was chosen as the correct response, i.e. the most effective course of action. In the case of the example provided above, the most effective response was regarded as '*a) Speak to his boss about this*'. In terms of reliability, the short-form STEM that is used for the current study holds more reliable than the original instrument. Cronbach's α reliability for the 25-item measure is .83, compared to the alpha value of .68 frequently ascribed to the 44-item version (Austin, 2010; MacCann & Roberts, 2008; see technical report - MacCann & Roberts, n.d.).

Ethical considerations

The British Psychological Society (BPS, 2011) states that investigators ought to conduct their research in such a way that fosters mutual respect and trust between themselves and their participants, with the latter having confidence in the former. The current study conforms to this requirement: the knowledge, experience, and expertise of each participant was respected, as was the privacy and confidentiality of the information they provided. All data remained anonymous throughout the entirety of the study, ensuring that individuals were unable to be personally identified (BPS,

2011), and were ultimately stored securely in accordance with the Data Protection Act (1998). Information sheets, presented to participants before the study began, detailed the nature of the research to which they were being asked to contribute to (BPS, 2011). Here, participants were made aware of their right to withdraw themselves and their responses at any time prior to submission of the survey - beyond this point, their data would be untraceable (BPS, 2009, 2013).

In accordance with the BPS Code of Ethics and Conduct (2009), consent was sought from all individuals participating in the study, with them having been provided with adequate information allowing them to understand the nature, purpose and possible consequences of the research. Being a form of internet-mediated research, the current study involved acquiring data from individuals in the absence of face-to-face presence therefore written consent was unattainable (BPS, 2013). In this case, consent was considered to have been given by the action of ticking a box in response to the explicit statement: "I have read the above information and consent to take part in the study" (BPS, 2011, 2013).

An appropriate debriefing was provided for participants, reiterating the nature and purpose of the research. Information was also provided here regarding alternative sources of support or assistance should any individuals have been affected by the study, though harm to participants was avoided (BPS, 2009). The current research was designed and conducted in a way that attempts to ensure its quality and contribution to the advancement in knowledge and understanding, with the aim of being used for beneficial purposes in terms of the participant individually and also impacting the wider social context (BPS, 2011).

Procedure

Participants were approached through email, social media, and word of mouth, invited to take part in the study. A web-link for the survey was included when approaching potential participants which meant they were able to complete the study at a time that would be convenient for them. When completing the survey, participants were first presented with an information sheet outlining the purpose and nature of the research, and indicating that the study was expected to take no longer than 20 minutes to complete. The next page included a consent declaration with the individual required to respond by ticking a box to indicate their giving consent. Respondents were then asked to state their gender (male, female) and the age range that applied to them (18-25, 26-35, 36-45, 46-60). The survey then progressed into the testing of emotional intelligence. To begin with, they were to complete the 25-item STEU short-form instrument, followed by the 20-item STEM short-form. A suitable debrief containing study information and signposts to further support was given upon completion of the survey items, whilst also thanking respondents for giving their time to participate.

Following data collection, the results for each participant were analysed, examining the interaction between gender, age, and emotional intelligence. Whilst differential research commonly uses an Analysis of Variance (ANOVA) to test for differences (Evans, 2007), conducting multiple one-way ANOVA's would be time-consuming, non-economical, and increase the likelihood of a Type I error occurring. Therefore, a 2 x 4 between subjects Factorial ANOVA was conducted for scores on

the STEU instrument, followed by a separate 2 x 4 between subjects Factorial ANOVA for scores on the STEM measure. Using a Factorial ANOVA allowed for testing of the main effects of both gender and age, whilst also testing for an interaction effect between the two.

Results

Participants' scores in both of the emotional intelligence tests were analysed, with descriptive and inferential statistics being computed. Analysis of the scores from the STEU section of the study progressed in five stages - the same can be said for the STEM. The outcomes of these statistical analyses are presented below. For the statistical output from the STEU test in full, see Appendix 6, and for the full output of STEM test analyses, see Appendix 7.

Situational Test of Emotional Understanding (STEU)

The first phase of analysis for the STEU involved calculating the mean test scores and standard deviations for each participant. Average scores were calculated for both genders (male, female) and for each age range (18-25, 26-35, 36-45, 46-60) overall, as well as for gender within each age range, and are shown summarised in Table 2.1 below.

Table 2.1
Mean Scores and (Standard Deviation) for Males and Females, Age Range, and Overall for the Situational Test of Emotional Understanding (STEU)

AGE	18-25 yrs	26-35 yrs	36-45 yrs	46-60 yrs	OVERALL
MALE	17.14	17.63	19.82	16.00	17.67
	(3.11)	(6.34)	(4.99)	(3.02)	(4.80)
FEMALE	17.26	19.83	19.30	15.86	17.66
	(3.07)	(2.75)	(3.02)	(3.71)	(3.43)
OVERALL	17.23	18.70	19.63	15.92	17.67
	(3.05)	(4.99)	(4.31)	(3.37)	(4.05)

Table 2.1 shows that, in the current study, there was a considerable degree of similarity and little evidence of variability among mean scores on the STEU for males and females both within each age range (e.g. 18-25 - male *M*= 17.14, female *M*= 17.26) and overall (male *M*= 17.67, female *M*= 17.66). On the whole, males scores varied slightly more, with the scores of females overall appearing to be more clustered around the mean value (male *SD*= 4.80, female *SD*= 3.43) in relation. In terms of age, there was a steady rise in scores from the 18-25 age range (*M*= 17.23)

to the 26-35 age range (M= 18.70). The highest scores on the STEU were found among those aged 36-45 (M= 19.63), with a sizeable decline evident in those in the 46-60 age range (M= 15.92).

Secondly, with regards to evidence of potential variability of mean scores within each age range based on gender, a bar chart was produced to provide graphical representation of this relationship, and is presented as Figure 1.1. below.
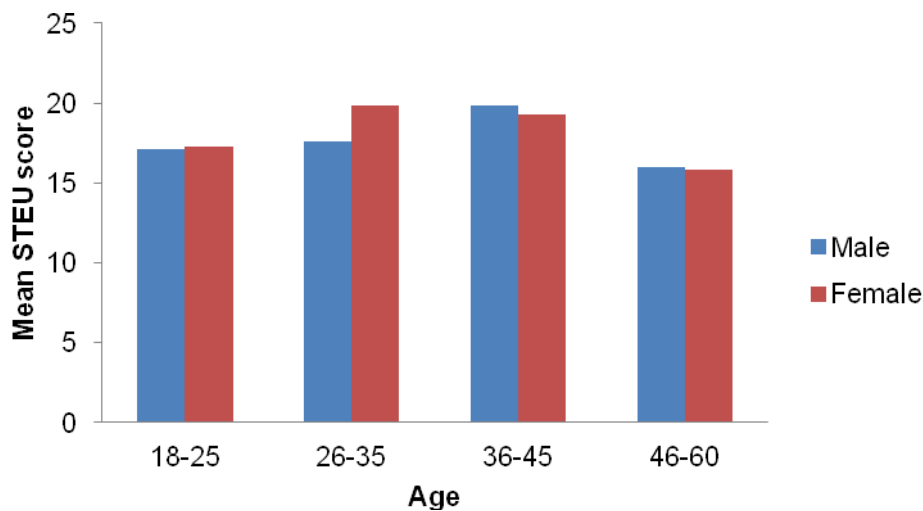
Figure 1.1.   **Bar chart to show the mean Situational Test of Emotional Understanding (STEU) scores across all age ranges by gender**

As Figure 1.1. shows, within the age range of 18-25, females scored higher than males in the STEU (female M= 17.26, male M= 17.14), however this difference is exceedingly marginal. Females aged 26-35 also scored higher than males of the same age (female M= 19.83, male M= 17.63), with this being the most visible of differences in scores within age range in relation to gender. Within the 36-45 age range, it was the scores of males which was highest (male M= 19.82, female M= 19.30). Again, although the mean score for those aged 46-60 was higher among males than for females, this difference was very much marginal (male M= 16.00, female M= 15.86).

The third phase of the present analysis involved collection of inferential statistics. A 2 x 4 between subjects Factorial Analysis of Variance was conducted to explore the effect of gender (male, female) and age (18-25, 26-35, 36-45, 46-60) on emotional intelligence, as assessed by the STEU. The Levene's test revealed that the assumption of homogeneity of variance within the sample was violated (F= 4.31, p< .001). There was no significant main effect of gender on emotional intelligence (F $(1, 151) = 0.39$, p= .536, eta^2= .00). However, there was evidence of a significant main effect of age on emotional intelligence (F $(3, 151) = 5.65$, p< .005, eta^2= .10). There was no significant interaction between gender and age on emotional intelligence (F $(3, 151) = 0.86$, p= .464, eta^2= .02).

Fourthly, Post Hoc testing was conducted to determine where the significant effect of age on emotional intelligence occurs. Post Hoc comparisons using the

Tukey's HSD test indicated that emotional intelligence scores on the STEU were significantly higher among those aged 36-45 compared to those aged 18-25 (MD= 2.40, p< .05) and those 46-60 (MD= 3.71, p< .005). Furthermore, 26-35 year olds also had a significantly higher emotional intelligence score than 46-60 year olds (MD= 2.78, p< .05). The difference between emotional intelligence scores for those aged 18-25 and 46-60 was not significant (MD= 1.31, p= .377). Similarly, there was no significant difference in emotional intelligence scores of participants aged 26-35 when compared to scores for those aged 18-25 (MD= 1.47, p= .277) and those 36-45 (MD= 0.93, p= .781).

The final phase of analysis concerned determining the reliability of the measure employed. Using Bryant, King, and Smart's (2007) standards for internal reliability, the STEU instrument in the current study was shown to have a firmly acceptable level of reliability (Cronbach's α = .74), and approached what Coolican (2009) would consider the cut-off value for ideal reliability (.75).

Situational Test of Emotion Management (STEM)

Analysis of the STEM began with the calculation of mean scores and standard deviations for each participant. Mean tests scores for both genders (male, female) and each age range (18-25, 26-35, 36-45, 46-60) in total were calculated, along with scores for gender within age range, and these can be seen summarised in Table 2.2.

Table 2.2
Mean Scores and (Standard Deviation) for Males and Females, Age Range, and Overall for the Situational Test of Emotion Management (STEM)

AGE	18-25 yrs	26-35 yrs	36-45 yrs	46-60 yrs	OVERALL
MALE	12.86	14.89	15.71	14.24	14.51
	(3.37)	(4.43)	(3.80)	(2.73)	(3.73)
FEMALE	14.00	16.56	16.10	15.05	14.97
	(2.74)	(2.62)	(1.91)	(2.18)	(2.69)
OVERALL	13.72	15.70	15.85	14.68	14.77
	(2.92)	(3.71)	(3.19)	(2.44)	(3.17)

As can be seen in Table 2.2, there was a relatively considerable degree of variance in test scores on the STEM between males and females. Females scored higher on average overall compared to males (female *M*= 14.97, male *M*= 14.51), and also had higher mean scores than males within all four of the age ranges (e.g. 26-35 - female *M*= 16.56, male *M*= 14.89). Furthermore, the scores among females overall varied very little from the mean value in comparison to those scores of males,

which tended to deviate more markedly (female *SD*= 2.69, male *SD*= 3.73). Regarding age, there was an increase in scores from those aged 18-25 (*M*= 13.72) to those aged 26-35 (*M*= 15.70). The highest mean scores for the STEM were found in those aged 36-45 (*M*= 15.85), with a slight decrease evident in 46-60 year olds (*M*= 14.68).

With the aim of assessing evidence for potential variance in scores within each age range based on gender, a graphical representation of this relationship was produced in the form of a bar chart, and is shown as Figure 1.2 below.
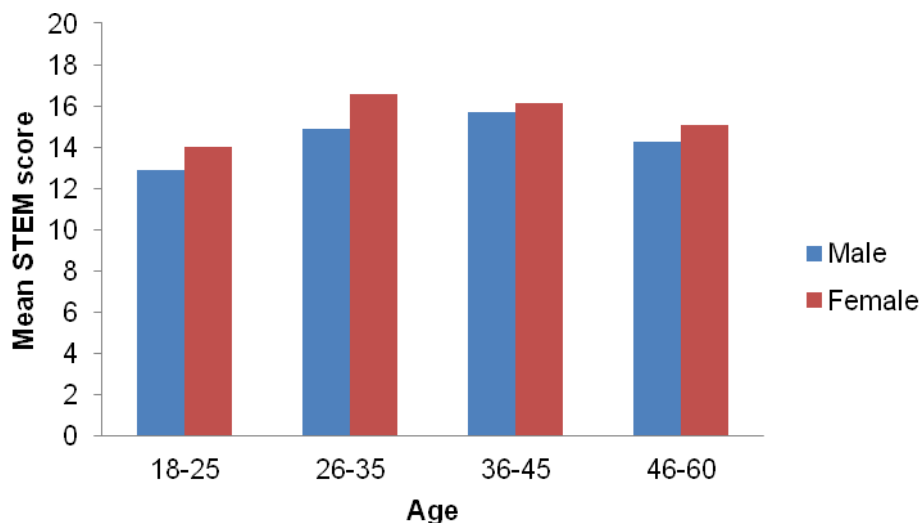
Figure 1.2. **Bar chart to show the mean Situational Test of Emotion Management (STEM) scores across all age ranges by gender**

As Figure 1.2 shows, within all four of the age ranges in the current study, females scored higher on average in the STEM compared to males (e.g. 18-25 - female *M*= 14.00, male *M*= 12.86, 46-60 - female *M*= 15.05, male *M*= 14.24).

Thirdly, inferential statistics were collected. A 2 x 4 between subjects Factorial Analysis of Variance was conducted to explore the effect of gender (male, female) and age (18-25, 26-35, 36-45, 46-60) on emotional intelligence, as assessed by the STEM. The Levene's test revealed that the assumption of equality of variance within the sample was not met (F= 4.58, p< .001). There was no significant main effect of gender on emotional intelligence (F (1, 151) = 3.67, p= .057, eta^2= .02). There was, however, a significant main effect of age on emotional intelligence (F (3, 151) = 5.08, p< .005, eta^2= .09). No significant interaction was found between gender and age on emotional intelligence (F (3, 151) = 0.24, p= .867, eta^2= .01).

In the penultimate stage of analysis, Post Hoc testing was carried out to establish where the significant effect of age on emotional intelligence exists. Post Hoc comparisons using the Tukey's HSD test indicated that emotional intelligence scores on the STEM were significantly higher among 26-35 year olds compared to 18-25 year olds (MD= 1.98, p< .05). Those aged 36-45 also had a significantly

higher emotional intelligence score than 18-25 year olds (MD= 2.13, p< .05). The difference between emotional intelligence scores for those aged 26-35 and 36-45 was not significant (MD= 0.15, p= .997). Likewise, there was no significant difference in emotional intelligence scores of participants aged 46-60 when compared to scores for those aged 18-25 (MD= 0.96, p= .436), those 26-35 (MD= 1.02, p= .475), and those in the age range of 36-45 (MD= 1.17, p= .430).

The fifth and final phase of analysis involved testing the reliability of the measure employed. Cronbach's α for the STEM instrument in this study was .69, indicating that the measure held a minimally acceptable level of internal reliability (Bryant et al., 2007). Conversely, Coolican (2009) would deem such a value as markedly lower than what can be considered an acceptable level (i.e. .75).

Discussion

The current study examined demographic characteristics in relation to emotional intelligence. The primary objectives of this investigation were: to determine whether a significant gender difference in levels of EI exists, and if evidence can be found for a developmental course of EI. It was also examined whether or not an interaction effect between gender and age could be observed.

Analysis revealed no significant difference between EI scores for males and females on either the STEU or STEM test. This result corresponds with a minority of studies which also failed to find a difference in EI (Çelık, & Denız, 2008; Nasir & Iqbal, 2009; Petrides & Furnham, 2000a), yet contradicts the outcome of the majority of studies assessing this matter which have found a female-favouring difference. Consequently, no support was found for the hypothesis that females would score higher on EI than males. In fact, mean test scores were almost identical for each gender, suggestive of there being more of a similarity than difference. Such figures seem to be reflective of Goleman's (1999) theory that we each have our own 'personal profile' of emotional competency. What appears a strength among females may be a weakness among males, and vice versa (Matthews et al., 2002). Therefore, these individual differences are said to neutralise each other, leading to a more similar average level of EI between genders.

The fact that these results did not support the hypothesis and did not reveal a significant difference in EI in favour of females is particularly disappointing. Such a discovery could have boosted the potential usefulness of this study (MacCann, 2006). Substantial evidence exists indicating a male superiority on various measures of general intelligence and cognitive ability (e.g. Allspach & Breining, 2005; Colom et al., 2004 - as cited in MacCann, 2006; Ackerman et al., 2001 - as cited in MacCann, 2010). An indication of a difference in EI favouring females could potentially be useful in counteracting the male-favouring IQ data, thus reducing the adverse impact on women and could possibly alter the kinds of roles which are considered appropriate for males and females, especially in the workplace (Fabes & Martin, 1991; Goleman, 1996, 1999; MacCann, 2006, 2010).

In reality, the lack of a significant gender difference in the present study proposes that the cultural stereotype of women being more 'emotional' is no longer

as profound as it previously has been. Guastello and Guastello (2003 - as cited in Sanchez-Nunez et al., 2008) suggest this is occurring as a result of changing gender roles, and the fact that levels of androgynous behaviour are increasing across generations.

A significant effect of age on level of EI was observed on both measures, with respondents aged 36-45 scoring highest in both instances. Expectedly, levels of EI were found to generally increase with age, and thus support was established for the age hypothesis. As such, results illustrate a developmental trajectory of EI similar to that observed with other intelligences, and correspond with previous findings (e.g. Fariselli et al., 2008; Fernández-Berrocal et al., 2012; MacCann & Roberts, 2008; Mayer et al., 1999, 2004; Petrides & Furnham, 2006). Mayer et al. (1999) have argued that the establishment of a positive association between age and EI scores is crucial if the concept is ever to be considered a true intelligence. The evidence that emerges from the current study, along with findings from past investigations, validates the assertion that EI is a measure of a legitimate form of intelligence.

After peaking among those aged 36-45, levels of EI among respondents in the current sample were shown to decrease among 46-60 year olds. Such a trend parallels findings that have amassed from prior studies, with conclusions frequently denoting higher mean scores among people within the ages of 35-50, and a subsequent decline then plateau thereafter (e.g. Bar-On, 1997; Derksen, Kramer, & Katzko, 2002 - as cited in Gaitniece-Putāne, 2006). A possible explanation of this trend is provided by Mill et al. (2009), indicating an effect of accumulated life experience, often phrased as 'with age comes wisdom'.

The peak in levels of emotional understanding (STEU) and emotion management (STEM) among 36-45 year olds within this sample may well reflect the search for togetherness and balance in interpersonal relations often characteristic of this period of life (Erikson, 1968 - as cited in Gaitniece-Putāne, 2006). On the other hand, decreases in EI scores of respondents in their late forties and fifties could be attributed to memory loss and a diminishing ability to perceive emotions accurately (Mill et al., 2009). People within their twenties are adjudged to undergo a period of identity crisis due to establishment of a vocation, and a need to discover their sense of self and direction in life (Erikson, 1968 - as cited in Gaitniece-Putāne, 2006). The confusion and anxiety likely experienced in relation to these challenges could well account for the low scores on the STEM for respondents within the 18-25 age range in the present study. Alternatively, these low scores could be explained in relation to the test items and situational-contexts used. Between the ages of 18 and 25, people are merely only starting out on the job ladder, at the beginning of their careers. As such, the expected unfamiliarity among 18-25 year olds with the work-place contexts presented in items, in addition to inexperience with management of emotions in such situations, may perhaps explain why the lowest mean EI scores on the STEM in this current investigation were found among this age range. However, Goleman (1996, 1999) contends that EI is a modifiable skill: with the right practice, such emotional competencies can be cultivated. Essentially, it is assumed that people can learn to become more emotionally intelligent (Matthews et al., 2002, 2011).

Regarding the interaction between gender and age, no significant effect was found. This finding applies to both the STEU and STEM measures. Gender

psychologists indicate that gender is always interacting with other socio-demographic variables in explaining various concepts and phenomenon (Barberá, 1998; Candela et al., 2001; McIntyre & Edwards, 2009 - as cited in Fernández-Berrocal et al., 2012). Yet the lack of a significant interaction effect between gender and age within the current investigation appears to contest this assertion. Additionally, although Gaitniece-Putāne (2006) and Van Rooy et al. (2005) assign the reason for the lack of a significant interaction between gender, age and EI to issues with restriction of range and representativeness of their samples, the use of a more representative sample with a diverse age range in this present study did not appear to induce the discovery of a significant interaction. With this in mind, the suggestion is that future research should be endorsed to further examine evidence of such a relationship between these demographic variables concerning EI.

In fact, the sample used in the current investigation is an extension and advancement on those which have been used in research of this nature in the past. Previous researchers have predominantly sourced undergraduate psychology students as participants and included a restrictive age range (e.g. Austin, 2010; Petrides et al., 2004; Van Rooy et al., 2005). The current sample, conversely, consisted of undergraduate students from a diverse range of disciplines and various institutions as well as members of the community, whilst also representing a broader age range of 18-60 year olds. The purpose of using participants other than students was that it was hoped these individuals would vary in their life experience, and leads to a greater likelihood of discovering a valid developmental trajectory of EI.

The STEU and STEM were chosen as the desired measurement of ability-based EI in the current study due to the fact they were made freely available in the public domain by the test developers (MacCann & Roberts, 2008). This meant that, unlike other ability measures such as the MSCEIT, access to these tests was not limited by consideration of cost (Austin, 2010; Matthews et al., 2011). Therefore, it will be easier for continued research of a similar nature to this study to be conducted, building on and supporting the findings.

Situational judgement tests such as those used in this investigation represent an attempt to improve the validity of measurement of emotional competency, having been previously considered a challenging task (Matthews et al., 2012). The use of such a paradigm, along with the appraisal theory of emotions, provides a much needed theoretical basis to measures of ability EI and allows for objective scoring of correct and incorrect responses. Further adding to the scientific credibility of these measures was the discovery that both the STEU and STEM short-form possessed acceptable levels of internal reliability within the present study.

As occurs with practically all paper-based tests, EI scores obtained from the STEU and STEM in this study may in fact be confounded by the reading comprehension of the respondents. The reading load on these instruments is very high and so a low EI score for an individual could actually be reflective of difficulties they have in reading the test items rather than an actual deficiency in emotional competence (Austin, 2010; MacCann & Roberts, 2008; MacCann et al., 2010). Video and audio-based presentation of items has been suggested as an alternative form of test delivery. Studies of such are only just beginning to emerge, yet they show to have potential (Roberts et al., 2011 - as cited in Matthews et al., 2012).

Studying individual differences in psychology is inherently a controversial matter. By investigating and bringing attention to group differences, the researcher risks being confronted with claims of sexism and ageism. However, the study of such populations is necessary in order to communicate knowledge which could help reduce inequalities and adverse impact (Matthews et al., 2002). Without such investigation, neither evidence for a developmental trajectory of EI, nor results contradicting the gender stereotype of EI could have been gauged in the current study. Nonetheless, there was a lack of homogeneity of variance in the present samples, and so care must be taken when considering the findings.

Looking to the future, research should continue to examine variance in levels of EI as a function of gender and age. Firstly to determine whether or not genders differ in EI - as the stereotype would suggest - or whether average scores for males and females are in fact becoming more similar. Secondly, the positive relationship between age and EI found in this study, combined with female-favouring differences observed in the majority of existing studies, indicates that further examining evidence of an interaction effect would represent a useful endeavour.

MacCann and Roberts' (2008) situational judgement tests of EI are still relatively new in relation to other, pre-existing ability-based measures. However, further clarification of the reliability and validity of the STEU and STEM would increase their scientific credibility, and could signal that these instruments in fact represent the future of EI measurement. Additionally, as Matthews et al. (2011) would agree, future work is needed to determine that EI measures are invariant, applying to populations other than those in Westernised societies. Therefore continual research of a cross-cultural nature is recommended.

Concluding comments

In conclusion, the current study found gender did not significantly relate to EI. A significant relationship between age and EI was observed, in a direction suggestive of a developmental trajectory. No significant interaction was discovered between gender and age. Support, then, was found only for the age hypothesis. Continued research is suggested, to validate these claims of such a relationship between age and level of EI. Further research assessing the assumed female-favouring differences in EI is needed, along with more examination of a supposed interaction between gender, age, and emotional intelligence. Research in this area may also benefit from investigating EI cross-culturally.

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