The relationship between cognitive ability, emotional intelligence and negative career thoughts: A study of career-exploring adults

Authors:
Dennis Dahl[1]
Frans Cilliers[1]

Affiliations:
[1]Department of Industrial and Organisational Psychology, University of South Africa, South Africa

Correspondence to:
Frans Cilliers

Email:
cillifvn@unisa.ac.za

Postal address:
PO Box 392, University of South Africa 0003, South Africa

Dates:
Received: 28 Jan. 2012
Accepted: 28 Sept. 2012
Published: 27 Nov. 2012

How to cite this article:
Dahl, D., & Cilliers, F. (2012). The relationship between cognitive ability, emotional intelligence and negative career thoughts: A study of career-exploring adults. *SA Journal of Human Resource Management/SA Tydskrif vir Menslikehulpbronbestuur*, *10*(2), Art. #461, 14 pages. http://dx.doi.org/10.4102/sajhrm.v10i2.461

Orientation: Career exploration can be a stressful experience, often manifested by negative career thoughts. In this article, the factors which influence the ability to cope with negative thinking are investigated.

Research purpose: This study investigated the relationship between cognitive ability, emotional intelligence and negative thoughts pertaining to career in a sample of unemployed, non-student adults.

Motivation for study: There is a need for research which investigates the psychological factors that contribute to successful career exploration and decision-making. Cognitive ability is one such factor, whilst emotional intelligence is another whose validity is not yet well established.

Research design, approach and method: A survey design and quantitative procedures were used in gathering and analysing data gathered from 193 non-student, middle-aged adults attending a community-based career exploration programme in British Columbia, Canada. Cognitive ability, emotional intelligence and negative career thoughts before and after a career exploration programme were measured.

Main findings: Neither cognitive ability nor any aspect of emotional intelligence predicted negative career thinking *change*. Cognitive ability predicted overall negative career thoughts as well as decision-making confusion, but only after the programme. The ability to manage emotions, however, predicted negative career thoughts both before and after the career decision-making programme.

Practical/managerial implications: The managing emotions component of emotional intelligence is significantly associated with negative career thoughts. These findings suggest that career counselling requires that the role of emotions and their influence on behaviours must be given more consideration. Industrial and organisational (IO) psychologists would benefit from engaging in programmes that train them to assist clients in becoming more aware of, and increasing, their own emotional intelligence.

Contribution/value-add: The study added insights to the field of career psychology regarding the ability of emotional intelligence to predict important outcomes regarding the dimensions of emotional intelligence (EI) as measured by a performance-based test predicting negative career thoughts amongst the non-student, adult population.

Introduction

Key focus of the study

Individuals approach career decision-making with varying degrees of trepidation which can be manifested by negative career thinking. Two roles of the career and vocational practitioner are to address this negative thinking and to facilitate the decision-making process, thereby 'helping individuals pursue meaningful and enriching work' (Kline, 1996, p. 206). Typically this is done through an intervention programme – either individual or group – whereby clients are assisted in exploring their own strengths and weaknesses in a variety of areas, as well as investigating the current labour market. Some individuals appear to benefit much more from such programmes than others. Research that sheds light on the factors contributing to successful career exploration and decision-making is necessary.

Individuals employ many resources to cope with the challenges of everyday living. Intelligence is viewed as a psychological resource which is available to individuals in varying degrees (Carroll, 1993; Gottfredson, 1998; Gottfredson & Saklofske, 2009; Hunter & Schmidt, 1996; Jensen, 1998). General mental ability accounts for a large part of the intelligence resources a person has at his

or her disposal, but other more specific components are also available. One possible additional resource is that of emotional intelligence, a construct for which there has been considerable interest and criticism, and for which validation is still in progress.

There is insufficient knowledge of how both cognitive abilities and emotional intelligence affect career decision-making with respect to negative career thinking. A review of the literature in the areas of cognitive ability, emotional intelligence (EI) and negative career thoughts reveals unknowns that, if addressed, could shed light on all three of these domains. Firstly, there is a need to demonstrate the relationships that EI might have with other constructs. For example, there is a need for more studies that investigate the relationship between different measures of cognitive ability and measures of EI (Van Rooy, Viswesvaran & Pluta, 2005), and in particular, studies in which a performance or ability-based EI measure is used (Brown, George-Curran & Smith, 2003; McEnrue & Groves, 2006). To establish the validity of the EI construct, research is necessary to determine whether EI actually does predict useful outcomes (Antonakis, 2004; Matthews, Zeidner & Roberts, 2002; Mayer, Salovey & Caruso, 2004). In other words, it is important to determine whether EI as well as cognitive ability can be employed by individuals as psychological resources in effecting change in behaviour.

Secondly, within the field of Industrial and Organisational (IO) psychology, career intervention research needs to investigate the mechanisms of change within individuals in the career decision-making process (Reese & Miller, 2006; Slaski & Cartwright, 2003). In particular, there is a need to investigate the role of so-called non-cognitive predictors and their relationships to various outcomes (Van Rooy *et al*., 2005, p. 446), and whether there are relationships between cognitive and emotional functioning in making decisions (Muramatsu & Hanoch, 2005), specifically with respect to negative thinking about career exploration. One method for accomplishing this is to observe the change in negative career thoughts as a result of a career exploration programme and determine the relative importance of factors associated with that change.

Many investigations regarding emotional intelligence and/or career decision-making are conducted using college student samples. Research that uses adult, non-student populations is required (Brown *et al*., 2003).

Background to the study

There has been a paradigm shift within the field of IO psychology within the last several decades. Typically, research regarding career exploration has focused on general mental ability as the dominant influence in predicting behaviour at work, in particular job satisfaction and work performance (Ashkanasy, 2004; Hunter & Schmidt, 1996; Kidd, 1998). However, Barsade and Gibson (2007, p. 36) argue that IO psychology has undergone an 'affective revolution' in which affective constructs such as emotional intelligence, in addition to the cognitive dimensions, are also seen as influential in career settings. These authors predict that investigating emotional intelligence will considerably expand our understanding of organisational life. Unfortunately, the links between emotional intelligence, its subcomponents, and other factors such as cognitive intelligence and negative and positive affect are still unclear. Ashkanasy and Daus (2005) argue that emotions, and specifically emotional intelligence, are important to study in the context of organisational behaviour. Muramatsu and Hanoch (2005, p. 202) advance the theory that emotions '… play a significant role in guiding and regulating choice behaviour, by virtue of their capacity to modulate numerous cognitive and physiological activities'. The authors argue that these emotional processes contribute to adaptive behaviours, and propose that research is necessary in order to understand in a better way cognitive-emotional interactions in human judgement and decision-making.

The world of work is an important space where most individuals spend a great deal of their time as well as their physical and emotional energy. Some research has already focused on the relationships between EI and the functioning of individuals in organisations (Druskat, Sala & Mount, 2006). Of even more importance than actual work settings, however, is the crucial area of career exploration and decision-making. This has been shown to be not only a cognitively demanding task, but is likely to be experienced as an emotionally taxing and stressful task as well (Sampson, Peterson, Lenz, Reardon & Saunders, 1996; Sampson, Reardon, Peterson & Lenz, 2004). This stress may have been initiated by a variety of changes in the environment, namely, job loss, insecurity, dissatisfaction, restructuring and instability amongst others, resulting in an impediment to achieving one's personal goals (Dekker & Schaufeli, 1995; Hamilton, Karoly & Kitzman, 2004; Slaski & Cartwright, 2003). These changes elicit emotional responses, the magnitude and quality of which depend on the interpretation and value placed on them by the individual. These emotional responses impact cognitive and physiological activities, and thereby promote or impede subsequent performance (Lam & Kirby, 2002).

Some research suggests that increased EI is associated with fewer intrusive thoughts and less intense emotional responses to a stressor which helps the individual cope better with the stressful situation (Ramos, Fernandez-Berrocal & Extremera, 2007). An increased ability to understand and manage emotions during a stressful event appears to be important to maintaining healthy functioning after the event. Rude and McCarthy (2003) argue that greater EI reduces the tendency for an individual to engage in maladaptive coping strategies such as rumination or thought suppression. On the other hand, Zeidner, Matthews and Roberts (2006) observe that EI research has not been adequately linked with indicators of stress symptoms such as negative emotions. Investigating the way in which individuals appraise and respond to the stress that precedes and accompanies career exploration, as

indicated by negative thinking with respect to career, would begin to address this gap in the literature.

Much of the research regarding negative career thinking has focused on young adult student groups (Gordon, 1998; McWhirtner, Rasheed & Carothers, 2000; Weinstein, Healy & Ender, 2002). In addition, many of the studies conducted on the concept of emotional intelligence have also used college age or student samples (e.g. Brackett & Mayer, 2003; Brackett, Mayer & Warner, 2004; Mayer, Salovey, Caruso & Sitarenios, 2003). Brown *et al*. (2003) point out that the generalisability of studies using student populations is limited and needs to include non-student groups. Non-student adults are more liable to be challenged by a variety of stressors including unemployment, possible family issues surrounding children, separation, divorce, finances, aging parents et cetera, and possible physical issues that are less likely to be faced by students (Amundson & Borgan, 1996; Osipow, 1999; Patton & Creed, 2001; Phillips & Blustein, 1994; Super, Savickas & Super, 1996). For these adults, negative career thinking and coping mechanisms may be different. As well, it has been recommended that research in emotional intelligence focus more on middle-aged adults whose differentiation of abilities is more likely to be maximised as compared with young adults or seniors (Schaie, 2001).

Research objectives

Appropriate resources that focus on the problem at hand are more likely to result in outcomes that are of benefit to the individual. Responding to external or internal changes in some context of the environment in such a way that quality of life, work or relationships is improved, can be said to be adaptive. In this research, negative career thoughts are investigated as an important life outcome because they are closely tied with successful career exploration. Two psychological factors that may influence, and therefore predict, negative career thoughts are cognitive ability and emotional intelligence. The primary purpose of this research is to determine the extent, if any, to which cognitive ability and EI, can predict negative career thoughts and negative career thoughts change. In this respect, this research addresses the validity of emotional intelligence as a construct. If emotional intelligence is, in fact, an ability defined as perceiving, using, understanding and managing emotions so as to adapt to one's environment, then there should be a significant relationship between measured emotional intelligence and negative career thoughts and negative career thoughts change. In addition, if emotional intelligence is a discrete ability apart from general intelligence, then it will be able to predict negative career thoughts and their change when another factor, such as general cognitive ability is accounted for.

The following hypotheses are put forward:

- **Hypothesis 1:** Cognitive ability will be inversely correlated with and predictive of negative career thoughts.
- **Hypothesis 2:** Emotional intelligence will be inversely correlated with and predictive of negative career thoughts.
- **Hypothesis 3:** Emotional intelligence will be a better predictor of negative career thoughts than cognitive ability.

Potential value-add of the study

The utility of any construct increases with its ability to predict useful outcomes (Bastian, Burns & Nettelbeck, 2005) and the construct of EI is presently in its infancy in this process. This research is particularly important in IO psychology in that it leads to a better understanding of how individuals might react to a variety of stressful workplace situations and how possibly vulnerable individuals in those situations might be identified and assisted. Psychological resources, which can be drawn upon to enhance career decision-making, need to be identified and, if possible, developed.

Literature review

Cognitive ability

Despite more than a century of scientific investigation, the lack of consensus amongst researchers regarding the fundamental qualities of intelligence speaks to its very complex nature. Psychometric approaches to studying intelligence are based on data obtained from tests of mental abilities (Sternberg, 2004). By analysing the patterns of correlations between scores on these tests, it is thought possible to determine the structure of intelligence and what parts, if any, comprise it (Davidson & Downing, 2000; Embretson & Schmidt McCollam, 2000). Statistical procedures for determining their psychometric properties, as well as standardised procedures for administration and scoring, have made possible meaningful comparisons of scores between mental abilities and also between groups of individuals. The complex system's theories broaden the scope of intelligence to propose that mental abilities are manifest within a cultural or situation-specific context above and beyond what factor analyses may show, and that there are other factors that contribute to success. Intelligent behaviour is best seen in everyday interactions with the environment and the subsequent adaptation to that environment. More recently, neurobiological theories provide evidence that intelligent behaviour has a neurological basis and that individuals do appear to have differing amounts of intellectual or mental resources with which to deal with their environments.

In the context of this study, cognitive ability is viewed as a psychological resource that is available to individuals in varying degrees. Cognitive ability involves the ability to learn, to acquire stores of knowledge and make skilled decisions based on that knowledge (Cattell, 1963; Embretson & Schmidt Mccollam, 2000). In addition, it involves problem-solving in novel situations where previously acquired knowledge is not necessarily available (Catell, 1963; Deary, 2001). Furthermore, inductive and deductive reasoning (Deary, 2001; Hunt, 2005), and mental manipulation of information (Stankov, 2003) are also required.

Cognitive ability also can be regarded as one's ability to adapt to the environment. Adaptability includes a number of

 doi:10.4102/sajhrm.v10i2.461

subcomponents such as learning from experience, problem-solving when faced with novel situations, and controlling one's internal and external environments by moulding them when necessary. It involves capitalising on strengths whilst at the same time compensating for weaknesses (Sternberg, 2003, 2009). In addition to meeting the challenges of new situations, adaptability must also include purposefulness or goal-directed behaviour (Newman & Just, 2004; Sternberg & Salter, 1982). According to Sternberg (1997):

> [I]ntelligence comprises the mental abilities necessary for adaptation to, as well as shaping and selection of, any environmental context. According to this definition, intelligence is not just reactive to the environment but also active in forming it. (p. 1030)

Industrial and Organisational psychologists are divided on the issue of the importance of general mental ability in aspects of work such as personnel selection and job performance (Viswesvaran & Ones, 2002). On the one hand are those who argue that cognitive abilities are not good enough predictors (Goldstein, Zedeck & Goldstein, 2002; Sternberg & Hedlund, 2002). On the other are those who point to research supporting its utility in predicting outcomes. According to Anderson (2004, p. 271) '… intelligence tests are very good predictors of real-world accomplishments'. Within the world of work, general mental ability has been found to be associated with job performance and career success (Herrnstein & Murray, 1994; Hunter, 1986; Schmidt & Hunter, 1998), and in a far greater way than other factors, such as structured interviews or reference letters in selecting appropriate personnel (Muchinsky, 2006).

Gottfredson (1998) has claimed that:

> intelligence as measured by IQ tests is the single most effective predictor known of individual performance at school and on the job. It also predicts many other aspects of well-being … (p. 24)

Dilchert, Ones, Davis and Rostow (2007), observed a substantial negative relationship between cognitive ability and counterproductive work behaviours such as work avoidance, abuse of resources, absenteeism and destruction of property. Ree and Earles (1991) found that psychometric g and not specific abilities (such as word knowledge, mathematics, automotive or electronics knowledge for example) was the best predictor of success in job training a massive group of air force enlistees. In a further study, Ree, Carretta and Teachout (1995) determined that general ability influenced work performance to a greater extent than did prior job knowledge. Hunter and Schmidt (1996) reported studies indicating general cognitive ability (g) to be the best predictor for job performance when hiring personnel.

Emotional intelligence

Emotional intelligence is likely to represent a much larger construct than any one particular model currently describes and can therefore be studied from a variety of perspectives (Austin & Saklofske, 2005; Zeidner, Roberts & Matthews, 2008). However, the use of the term 'intelligence' assumes that emotional intelligence as a construct should fit in with the nomological network that most scientists would recognise and understand. To be considered as intelligence, there is a general consensus that at least three criteria must be met (Mayer, Salovey & Caruso, 2000). Firstly, the intelligence must demonstrate mental ability rather than non-intellectual characteristics or personality descriptions. This assumes the ability to engage in abstract thought, to learn and to solve problems in order to adapt to the environment (Sternberg, Lautrey & Lubart, 2003). Secondly, the intelligence must be able to be psychometrically associated with a similar constellation of abilities, but not overly so. Dimensions of intelligence such as verbal comprehension or perceptual organisation, for example, can be distinguished by measures that appear to indicate the processing of, and reasoning with, information of a particular type (Carroll, 1993; Horn & Cattell, 1966). The ability to engage in this type of problem-solving can be quantified and psychometrically analysed. Similarly, a dimension of emotional intelligence should be distinguishable by the ability to perform emotionally related problem-solving. Thirdly, there should be a developmental trajectory for the intelligence in question; that is, it should develop from childhood to adulthood as the result of experience.

The extant literature generally distinguishes between two approaches to EI, namely, (1) a group that are much broader in their definitions and include a variety of traits and (2) an ability-based model that is much narrower in its focus. The former group has been labelled 'mixed models' and within this approach EI has been variously conceptualised as a set of personal and social competencies necessary for survival and adaptation (Bar-On, 1997, 2005; Goleman, 1995), or as a lower order personality trait (Petrides & Furnham, 2006). In contrast to the mixed models, the Mayer-Salovey EI model conceptualises emotional intelligence as a mental ability rather than as a preferred way of behaving (Feldman Barrett & Gross, 2001; MacCann & Roberts, 2008; Mayer & Salovey, 1997; Mayer *et al*., 2000). The disadvantage of this is the possibility of excluding personality or other factors which may in fact contribute to emotional intelligence. On the other hand, because the emotional abilities in the model are thought to be more distinct from other constructs, any relationships found are less likely to be attributed to these other constructs. As a result, the Mayer-Salovey approach becomes more useful in scientific research, and has been judged by some (e.g. Conte, 2005; McEnrue & Groves, 2006; Ortony, Revelle & Zinbarg, 2007) to be the best model to be used in empirical research and likely the preferred focus of future EI studies (Zeidner, Matthews & Roberts, 2004). It is at the intersection of emotions and cognition that one finds the ability-based model of EI (Mayer, Salovey & Caruso, 2008). As with other generally accepted factors of mental ability, the ability-based model of EI proposes a parallel component of capacity – that of processing emotionally laden information.

Mayer and Salovey initially proposed a four-branch model of EI including the abilities to (1) perceive emotions (branch 1), facilitate (use) emotions (branch 2), understand emotions

(branch 3) and manage emotions (branch 4) (Mayer, Caruso & Salovey, 1999; Mayer & Salovey, 1997). These abilities are interrelated and viewed hierarchically in that the less psychologically complex abilities such as perceiving and facilitating emotions lay the foundation for the more complex abilities of understanding and managing emotions. Managing emotions, at the peak of the hierarchy, is therefore the most complex ability and incorporates the skills below it.

According to this ability model, individuals with higher EI should better be able to appraise the emotional environment and generate and direct attention to emotions most salient in the thought processes required for reasoning and decision-making. They should have an advantage in understanding the antecedents, sequences and outcomes of various emotions in the career context allowing them to put behaviours in the proper perspective. Most importantly, these individuals should be more likely to be able to adjust their negative thinking by monitoring, managing and reframing these thoughts so as to reach their desired goals (Cartwright & Pappas, 2007; Jordan, Ashkanasy & Hartel, 2002; Lopes, Grewal, Kadis, Gall & Salovey, 2006; Lyons & Schneider, 2005; Mayer & Salovey, 1997; Mayer *et al*., 2004).

To date, research investigating the association of EI as a mental ability with other factors has been relatively scarce. Higher EI has been associated with improved perceived interpersonal relationships (Lopes *et al*., 2004; Lopes, Salovey, Côté & Beers, 2005; Lopes, Salovey & Strauss, 2003; Yip & Martin, 2005), with decreased drug use, alcohol consumption and deviant social behaviour in men (Brackett & Mayer, 2003; Trinidad & Johnson, 2002), and a higher degree of self-sufficiency and capacity to choose partners with more positive characteristics (Amitay & Mongrain, 2007). Dunn, Brackett, Ashton-James, Schneiderman and Salovey (2007) found aspects of EI to be a significant predictor of forecasting accuracy in different emotionally laden situations, possibly leading to better decision-making.

In the workplace, Lopes *et al*. (2006) found EI to be significantly associated with job performance indicators such as merit increase and company rank, as well as interpersonal facilitation skills and higher stress tolerance.

No research investigating EI as a resource in coping with negative thinking accompanying the career exploration process has been found.

Negative career thoughts

Career thoughts have been defined as 'outcomes of one's thinking about assumptions, attitudes, behaviours, beliefs, feelings, plans, and strategies related to career problem solving and decision making' (Strauser, Lustig & Ciftci, 2008, p. 24). When these thoughts are negatively biased, they become unhelpful cognitions - perceptions that are often distorted and idiosyncratic in nature and which hinder effective career problem-solving and decision-making (Lam & Cheng, 2001; Osborn, Howard & Leierer, 2007; Sampson *et al*., 1996). These distorted beliefs may remain unnoticed (Kinnier & Krumboltz, 1986), and their genuineness is often not questioned by the individual (Lam & Cheng, 2001).

Negative career thoughts have been linked to diminished feelings of self-worth and subjective well-being (Judge & Locke, 1993), depression (Saunders, Peterson, Sampson & Reardon, 2000), anxiety, reduced self-esteem (Morano, 2006; Newman, Fuqua & Seaworth, 1989; Serling & Betz, 1990) and reported decrease in life satisfaction (Sampson *et al*., 1996). They appear to be moderately correlated with excessive rumination and maximisation (Paivandy, Bullock, Reardon & Kelly, 2008). Outwardly, the emotional reactions to these feelings may be manifest in disappointment, anger and hurt when self-imposed expectations are not met (Lam & Gale, 2004) and in a display of perfectionism (Osborn, 1998; Roll & Arthur, 2002). Verbal expressions may be negative and over-generalised (Corbishley & Yost, 1989). Amongst students, negative career thoughts have been found to:

- reduce retention in college (Tinto, 1993)
- act as a barrier to productive career planning (Reed, Lenz, Reardon & Leierer, 2000; Saunders *et al*., 2000)
- cause poorer psychosocial adjustment in disabled students (Dipeolu, Reardon, Sampson & Burkhead, 2002)
- correlate significantly with higher test anxiety and achievement motivation (Sud & Kumar, 2006).

Considering that 'the workplace is a forum for the expression of various behaviours' (Judge, Scott & Ilies, 2006, p. 126), negative career thinking can be expected to be displayed in that environment. Decreased job satisfaction, poor work performance, job avoidance and job failure have been reported (Judge & Locke, 1993; Sampson *et al*., 2004). These behaviours also affect significant others outside the work setting (Sampson *et al*., 2004).

Negative career thought change is defined as a movement away from a negative framing of career assumptions, attitudes, behaviours, beliefs, feelings, plans and strategies towards a positive approach to career problem-solving and decision-making (Strauser *et al*., 2008).

Synthesis

No research could be found that explores cognitive ability, emotional intelligence and negative career thinking as the variables of interest in one study. However, emotional intelligence and cognitive ability, together or separately, have been investigated in conjunction with other aspects of the world of work such as work performance, emotional labour, job insecurity and career decision-making. Côté and Miners (2006) investigated the relationship between emotional intelligence, cognitive ability and performance in the workplace. They measured three facets of work performance, as well as cognitive ability and emotional intelligence, in a sample of staff employed at a university. Results indicated that there is not a linear relationship between each of cognitive ability and emotional intelligence with job performance, but that participants with lower cognitive ability compensated

for this deficiency by displaying higher levels of emotional intelligence in at least two of the job performance criteria.

Liu, Prati, Perrewé and Ferris (2008, p. 2415) investigated emotional intelligence and negative affect as personal resources influencing the ''emotional labour' that employees perform in coping with customer interactions, as well as outcomes such as job tension and job satisfaction. Results indicated a medium and significant relationship (r = -0.37; p < .05) between emotional intelligence and negative affectivity.

Jordan *et al*. (2002) have presented a model in which EI acts as a moderator of behavioural reactions to job insecurity. They argue that higher EI, in particular emotional awareness and emotional management, better equips employees to cope with two outcomes of perceived job insecurity, namely, decreased affective commitment to the organisation and increased tension related to the job. According to this view, higher emotionally intelligent individuals are better able to break the cycle of negative thinking and negative coping behaviours that surround job insecurity.

Brown *et al*. (2003) hypothesised that an individual's ability to guide his or her thinking and actions using EI would be efficacious in the career exploration and decision-making process. The authors conclude that the ability to understand, analyse and employ emotional knowledge, as well as the ability to regulate emotions, can be used advantageously in completing career- exploration related tasks.

Research design

Research approach

A quantitative, survey approach, using correlation analysis (Terre Blanche, Durrheim & Painter, 2006) was employed to meet the research objectives.

Research method

Research participants

Given the paucity of studies focussing on adult samples that are not attending post-secondary institutions, the sample was limited to middle-aged, non-student adults. There is, of course, no definitive age at which one can be said to be a middle-aged adult, and so it was decided that the career stages proposed by Super (1990) be used as a guide. With respect to the 'life/career rainbow' (Reardon, Lenz, Sampson & Peterson, 2000, p. 14), Super divides the working life of an individual into five age spans of which two are most germane to this study, namely, the Establishment phase and the Maintenance phase, covering the ages of approximately 25 to 65. For this study, the criteria for inclusion, therefore, was that individuals needed to be adults between the ages of 25 and 65 and should not be attending post-secondary institutions or other training programmes.

Participants were unemployed, non-student adults referred to a career exploration programme funded by the federal government of Canada. One hundred and ninety-three adults (64% women) between the ages of 25 and 60 were included in the study. Average age was 41.7 years; average education achieved was 12.7 years. Participation in the study was voluntary. All participants had adequate knowledge of the English language.

Measuring instruments

Three measuring instruments were used in this study, namely, (1) the Wonderlic Personnel Test (WPT), (2) the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) and (3) the Career Thoughts Inventory (CTI).

Wonderlic Personnel Test: Cognitive ability was measured using the WPT (Wonderlic, 2002). The aim of the WPT is to provide a quantitative measure of a person's general cognitive ability, especially as it pertains to the world of work. The 50 items on the WPT encompass a variety of verbal and non-verbal reasoning and problem-solving tasks such as arranging words into a proper sentence, comparing sequences of numbers, analysing geometric figures and performing math calculations in response to story problems. Wonderlic's (2002) research showed acceptable levels of validity and reliability.

Mayer-Salovey-Caruso Emotional Intelligence Test: Emotional intelligence was measured by the Mayer-Salovey-Caruso Emotional Intelligence Test version 2 (MSCEIT v.2). The aim of the MSCEIT is to assess one's ability to process emotionally laden information and use emotions to solve problems. It is based on the premise that EI can best be measured by performance on four factors or branches: perceiving, facilitating, understanding and managing emotions. Perceiving (or perceiving, appraising and expressing) emotions refers not only to being aware of emotional content in the environment, but also accurately identifying it, differentiating between genuine and counterfeit emotions, monitoring internal feelings, identifying bodily sensations in one's own body and expressing emotions accurately (Caruso, Mayer & Salovey 2002). The facilitating emotions dimension assists an individual in focusing attention on salient emotional cues in the environment to enhance rational thinking (Gohm, Corser & Dalsky, 2005; Salovey & Pizarro, 2003). It enables one to choose the emotional attitude or posture most conducive to problem-solving in the situation, as well as allowing multiple perspectives of the problem. The third branch, understanding emotions, includes the ability to recognise the triggers or antecedent events of emotions, and to gauge the intensity the emotions are likely to reach. It also includes understanding the temporal sequences of emotions, the ways in which emotions can transform from one to another and the complex ways in which different emotions interact. The fourth branch, managing emotions, includes the ability to control the emotional situation within one's self and with others by solving emotionally laden problems. This also involves managing emotions in context, reframing appraisals of emotions, and deliberately choosing productive emotional responses and avoiding counterproductive ones. Ultimately, this ability promotes adaptation through the achievement of goals to enhance one's life and well-being.

The four branches are interrelated and hierarchical in that the first ability, perceiving, provides a platform for facilitating emotions, which in turn forms the foundations for understanding emotions which in turn contributes to emotional management. Whilst the four factors can be considered independently, they also interact to produce a global ability of EI (Jordan *et al*., 2002; Mayer & Salovey, 1997). In addition, the progression from branch one through to four is seen as increasing the degree to which the abilities and skills are incorporated into other psychological subsystems (Mayer *et al*., 2004). In other words, perceiving emotions is a more discrete or modularised ability, whilst managing emotions involves much more integration with the information processing around planning, motivation and goal achievement. Caruso *et al*.'s (2002) research showed acceptable levels of validity and reliability.

Career Thoughts Inventory: Negative career thinking was measured using the CTI (Sampson *et al*., 1996). The aim of the CTI is to provide a quantitative measure of a person's negative career thoughts. The core dimensions of negative career thinking have been determined through principal component analysis to include a global factor as well as three subcomponents for normative groups in a career decision-making milieu (Sampson *et al*., 1996). These three general types of negative career thoughts include decision-making confusion, commitment anxiety and external conflict. Decision-making confusion (DMC) is a reflection of an individual's ability to initiate or maintain the cognitive processes necessary to make career decisions (Sampson *et al*., 1996; Strauser *et al*., 2008). These decisions are facilitated by sufficient clarity regarding how decisions are made and by positive emotional states. In contrast, individuals with reduced ability in this area may be inhibited in their understanding of how to make a decision or may have emotional barriers interfering with effective decision-making (Sampson *et al*., 2004; Stauser *et al*., 2008). These emotional barriers may take the form of anxiety, depression or discouragement which may overwhelm the individual so that sustaining the decision-making process seems impossible.

Commitment anxiety (CA) refers to one's ability to commit to a particular career choice and successfully manage the anxieties that may arise as a result of that decision (Sampson *et al*., 1996; Strauser *et al*., 2008). After selecting the most appropriate career path, individuals with lower levels of commitment anxiety are able to continue focusing on their choice whilst disengaging from other possible alternatives and coping with the tensions that are bound to arise from choosing one path over another. Individuals with high levels of commitment anxiety may find letting go of alternative plans very stressful to the extent that the accompanying anxiety perpetuates the indecision cycle.

External conflict (EC) addresses negative thoughts regarding the ability to balance one's own perceptions and needs with those of others. Excessive focus on external factors, such as opinions of family, friends and colleagues, as well as life circumstances, contribute to a reluctance in making career decisions in individuals displaying high levels of external conflict. On the other hand, those with low external conflict are better able to distinguish which perceptions from others in their environment are more important for decision-making and are more likely to assume personal responsibility for their choices.

The CTI is a self-report, paper and pencil instrument consisting of 48 statements written to reflect negative career thoughts. Test-takers choose one of four responses for each item ranging from *Strongly disagree* to *Strongly agree*. Higher scores indicate more negative thoughts. Internal consistency alphas for adults have been found to be high (total CTI $\alpha = 0.97$; DMC $\alpha = 0.94$; CA $\alpha = 0.91$ and EC $\alpha = 0.81$). Principle component analysis provides support for the three factors of decision-making confusion, commitment anxiety and external conflict (Sampson *et al*., 1996).

Research procedure

Participants completed the first administration of the CTI (pre-CTI) on the first day before the 16-day programme started. The programme consisted of teaching basic career components, career stages, and individual or group counselling towards facilitating the individual's exploration of his or her own career matters and decision-making. Cognitive ability was measured on the second day using the WPT, and the MSCEIT was administered via computer on the fourth day. Upon completion of the programme, each participant completed the CTI again (post-CTI). Data were collected over a period of 24 months because of the limitations imposed by available resources and the nature of the programme. Every effort was made to retain consistency in format for each participant.

This study contained no psychological or disclosure risks to the subjects. The benefit for them was that their measured behaviours can be utilised by the IO psychology fraternity to enlighten scholars and researchers on the relationship between the measured constructs. All possible care was taken to ensure ethical psychometric practice and informed consent for using the data was obtained from all participants.

Statistical analysis

The primary focus of this research was the relationships between cognitive ability, emotional intelligence and negative career thoughts, and the extent to which emotional intelligence and cognitive ability factors could explain the total variance in the scores of the criterion variables (the four CTI variables). Descriptive and inferential statistical analyses were carried out using the SPSS version 13 statistics programme. Correlation and multiple regression analyses were used to determine the relationships between variables. Significance values were set at $p \leq 0.05$.

Results

Table 1 shows means and standard deviations for the variables measured. Career Thoughts Inventory change values were obtained by subtracting post- from pre-CTI scores and therefore a positive value for CTI change scores

indicates a decrease in negative career thoughts. A *t*-test for paired samples showed that all differences for CTI total, DMC, CA and EC were significant at the $p < 0.001$ level. Effect sizes for *r* differences for CTI total, DMC and CA were large ($d > 0.80$) whilst for EC the effect size was small to medium ($d = 0.44$). Results thus show that negative career thinking was significantly reduced after the programme compared to before the programme.

Correlations between cognitive ability and EI were positive and significant for EI Total, Perceiving and Understanding, but not significant for Facilitating or Managing. The overall cognitive ability/EI correlation ($r = 0.31$; $p < .001$; medium effect size) is in keeping with those reported in the normative study (Mayer *et al*., 2002, p. 38) and subsequent studies (Brackett & Mayer, 2003; Mayer *et al*., 2003). Amongst the four branches of the MSCEIT, Perceiving emotions showed a small to medium effect size ($r = 0.19$; $p < .01$). Both Facilitating emotions and Managing emotions correlated the least ($r = 0.14$; $p = 0.064$ and $r = 0.12$; $p = 0.113$ respectively; small effect size). Understanding emotions was most highly correlated with cognitive ability ($r = 0.48$; $p = 0.000$, large effect size). This is in keeping with Mayer and Salovey's assertion that Understanding emotions represents the most cognitive of the branches (Mayer *et al*., 2004). The cognitive ability/EI total correlation is of moderate size that could be expected to exist between overall g and other possible factors of intelligence, which lends credence to the test's claim of being an ability model (Zeidner *et al*., 2008).

Table 2 presents correlations between CTI pre-scores, post-scores and change scores with EI and cognitive ability. Significant correlations of cognitive ability with any pre-CTI or CTI change scores were not observed. However, cognitive ability was seen to be significantly inversely correlated with negative career thoughts post-programme for total CTI ($r = -0.15$; $p = 0.044$) and with decision-making confusion ($r = -0.22$; $p = 0.002$).

Contrary to expectations, no significant relationships between any of the total EI or the four branch scores with change in CTI scores were observed. In addition, none of the overall EI or three of the four EI branches (EIP, EIF, EIU) were seen to correlate with any CTI scores both prior to and after the programme. However, data analysis found that negative career thoughts overall prior to the programme were significantly and inversely correlated with the Managing emotions branch of the MSCEIT for total CTI ($r = -0.19$; $p = 0.008$) and with two of the three CTI subscales, CA ($r = -0.19$; $p = 0.011$) and EC ($r = -0.18$; $p = 0.013$). These represent a small to medium-effect size (Cohen, 1992). Likewise, significant inverse correlations existed between emotional management ability and overall CTI, as well as all three subscales, upon completion of the programme; total CTI $r = -0.21$; $p = 0.004$; decision-making confusion $r = -0.19$; $p = 0.009$; commitment anxiety $r = -0.21$; $p = 0.004$ and external conflict $r = -0.16$; $p = 0.024$.

An initial stepwise regression was performed in which cognitive ability and EI total score were entered as predictors of CTI change. Neither of these variables was seen to predict any of CTI change for total or any of the three subscales. A further regression analysis was performed in which cognitive ability, and the four branches of EI were entered as predictors of CTI change. CTI change for total plus all three subscales was not predicted by any of the predictor variables.

Regression analyses were carried out for CTI pre-test and post-test. Table 3 shows the summary of results of the multiple regression analyses predicting negative career thoughts prior to and after the programme. Cognitive ability was seen to predict both total CTI and decision-making confusion post-

TABLE 1: Means and standard deviations for Career Thoughts Inventory (pre, post and change), emotional intelligence and intelligence quotient.

Descriptive statistics	CTI pre-test				CTI post-test				CTI change				EI					
	Total	DMC	CA	EC	Total	DMC	CA	EC	Total	DMC	CA	EC	Total	P	F	U	M	IQ
M	58.3	58.0	61.1	58.1	48.9	48.7	49.7	52.7	9.6	9.3	11.4	5.3	92.5	97.7	97.7	91.2	91.3	25.7
SD	8.0	9.5	7.7	13.3	8.2	7.8	8.7	12.3	8.2	9.0	9.3	12.1	10.8	12.6	12.3	9.8	8.3	6.7

M, mean; SD, standard deviation; CTI, Career Thoughts Inventory; DMC, decision making confusion; CA, commitment anxiety; EC, external conflict; EI, emotional intelligence; P, perceiving; F, facilitating; U, understanding; M, managing; IQ, intelligence quotient.
CTI scores are T-scores where M = 50; SD = 10.
EI are standard scores where M = 100; SD = 15.
IQ scores are raw scores.
$N = 193$.

TABLE 2: Correlations between Career Thoughts Inventory (pre, post and change) scores with emotional intelligence and intelligence quotient.

Predictors	CTI pre				CTI post				CTI change			
	Total	DMC	CA	EC	Total	DMC	CA	EC	Total	DMC	CA	EC
IQ	-.04	-.09	.00	. 00	-.15*	-.22**	-.03	-.11	.11	.10	.03	.09
EI total	-.05	-.04	-.01	-.09	-.11	-.10	-.09	-.09	.05	.03	.07	-.01
EI P	. 04	.04	.11	-.07	-.01	.00	.01	-.04	.05	.04	.07	-.03
EI F	-.02	.02	-.05	-.05	.00	.01	-.05	-.03	-.03	.00	-.01	-.02
EI U	-.03	-.07	.02	.02	-.09	-.12	-.02	-.01	-.06	.03	.04	.03
EI M	-.19**	-.13	-.19**	-.18*	-.21**	-.19**	-.21**	-.16*	.02	.01	.02	-.04

IQ, intelligence quotient; EI, emotional intelligence; EI P, emotional intelligence perceiving; EI F, emotional intelligence facilitating; EI U, emotional intelligence understanding; EI M, emotional intelligence managing; CTI, Career Thoughts Inventory; DMC, decision-making confusion; CA, commitment anxiety; EC, external conflict.
$N = 193$.
*, $p \leq .05$; **, $p \leq .01$, 2 tailed

programme (2.1% and 5.0% of the variance; small effect sizes $f^2 = 0.02$ and 0.06 respectively). Therefore, Hypothesis 1 was partially supported, but only for overall negative career thoughts and decision-making confusion as measured upon completion of the career exploration programme.

None of the EI Perceiving, Facilitating, or Understanding branches accounted for any appreciable variance. Emotional management was seen to predict negative career thoughts both before and after programme for total and all three subscales. Pre-CTI variances were of similar magnitude (total $\Delta R^2 = 0.044$; DMC $\Delta R^2 = 0.024$; CA $\Delta R^2 = 0.043$ and EC $\Delta R^2 = 0.034$; small effect sizes of 0.02 to 0.05). Post-CTI variances were also of similar magnitude (total $\Delta R^2 = 0.048$; DMC $\Delta R^2 = 0.039$; CA $\Delta R^2 = 0.043$ and EC $\Delta R^2 = 0.030$; small effect sizes of 0.04 to 0.05). Therefore, Hypothesis 2 was partially supported, but only for the emotional management branch of EI and only for pre-CTI and post CTI scores. Overall, EI management was seen to predict more CTI scores and at the same magnitude as cognitive ability. Therefore, it can be concluded that Hypothesis 3 is supported by the data.

Discussion

This study explored two factors, cognitive ability and EI as measured by an ability-based test which may influence the negative career thoughts experienced by non-student career-exploring adults. Integration of these constructs was motivated by the perspective that career exploration is both cognitively demanding and emotionally taxing and is often accompanied by negative thinking regarding the world of work. Understanding the relationships between cognitive abilities, emotional abilities and negative career thoughts, therefore, adds to the literature regarding the relative importance of cognitive ability and emotional intelligence in an outcome not yet explored and in a segment of the population for which there is limited research. The study provides new information regarding the relationship between cognitive ability and EI and therefore the validity of EI as a separate aspect of intelligence that acts as a resource in problem-solving and adaptation to the environment. This understanding may provide both counsellor and client insight into dealing with the stresses associated with career exploration and career decision-making.

Level of cognitive ability was seen to be inversely and significantly correlated with, and predictive of, negative career-thinking scores, but only on the post-test administration and only for decision-making confusion and overall CTI. One possibility for these results is that individuals with higher cognitive abilities are able to benefit more from the self-knowledge and labour market knowledge acquired during a career exploration programme, and are better able to make decisions regarding how their particular circumstances might be altered to meet their needs. It may be that higher order cognitive components such as decision-making become activated during the career exploration programme and become more important in predicting decision-making confusion. Cognitive ability did not show any significant relationships with negative career thinking change overall or with any of the subcomponents although all the correlations showed a positive trend.

Levels of EI were obtained for an adult non-student sample. Whilst Perceiving and Facilitating branch scores approached the mean of 100 as calculated for the norming sample, overall EI, Understanding and Managing scores were significantly lower. When compared with other research in which scores have been reported in sufficient detail to permit analysis, the results in this research were lower than those reported elsewhere with the exception of one study (Corbishley & Yost, 1989). For example, the total and branch scores in this research are lower than those reported in some studies (e.g. Amitay & Mongrain, 2007; Bastian *et al*., 2005; Farelly & Austin, 2007; Yip & Martin, 2005), but, whilst still lower, more similar to others (e.g. Brackett *et al*., 2004). Whether this is related to the adult, non-student sample or a function of unemployment is not known at this point.

However, at least three reasons may account for the difference in scores obtained in the current research. Firstly, without exception, the participants in the aforementioned studies were university students, mostly recruited from undergraduate or graduate psychology courses and therefore with knowledge (presumably) regarding psychological constructs. Secondly, their ages were considerably younger; all age means were less than 30 and most were less than 20. In the current study, individuals under 25 were excluded from the data and the average age was almost 42 years, meaning that the sample was not representative of those reported above. Thirdly, the current sample was limited to career-exploring adults who were unemployed. Perhaps this population demonstrates

TABLE 3: Summary of multiple regression analysis for variables predicting negative career thoughts pre-programme and post-programme.

Predictors	CTI pre								CTI post							
	Total		DMC		CA		EC		Total		DMC		CA		EC	
	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β	ΔR^2	β
IQ	0.002	-0.043	0.009	-0.086	0.000	-0.035	0.000	-0.017	0.021*	-0.137	0.050**	-0.217	0.001	-0.039	0.012	-0.139
EI P	0.003	0.096	0.005	0.093	0.015	0.181	0.005	-0.048	0.000	0.037	0.002	0.060	0.000	0.066	0.000	-0.003
EI F	0.001	0.047	0.000	0.083	0.010	-0.038	0.001	0.027	0.000	0.110	0.000	0.019	0.003	0.014	0.000	0.035
EI U	0.000	0.015	0.003	-0.035	0.001	0.069	0.002	0.088	0.001	-0.005	0.002	-0.016	0.000	0.039	0.003	0.102
EI M	0.044**	-0.236	0.024*	-0.174	0.043*	-0.234	0.034*	-0.208	0.048**	-0.246	0.039**	-0.220	0.043**	-0.234	0.030**	-0.196
Total	**0.050**	-	**0.041**	-	**0.069**	-	**0.042**	-	**0.070**	-	**0.093**	-	**0.047**	-	**0.045**	-

IQ, intelligence quotient; EI P, emotional intelligence perceiving; EI F, emotional intelligence facilitating; EI U, emotional intelligence understanding; EI M, emotional intelligence managing; CTI, Career Thoughts Inventory; ΔR^2, coefficient of determination; β, Beta; DMC, decision making confusion; CA, commitment anxiety; EC, external conflict.
$N = 193$.
*, $p \leq .05$; **, $p \leq .01$

lower EI and that is what contributes to their unemployment. There are no other similar samples with which to compare.

Neither correlation nor regression analyses showed any significant relationship between EI, total or branches and *change* in negative career thoughts. This could suggest that EI is not a resource individuals employ to modify their thinking. However, a somewhat different picture emerges when the regression analysis was observed for these same predictors on the pre-programme level of negative career thinking. Whilst the effect size is small, Managing emotions was seen to predict the overall CTI as well as all three subscales. Individuals with higher emotional managing abilities appear to begin the career exploration experience with fewer negative thoughts. Similarly, for results of the multiple regression using post-programme CTI scores as the criterion variables, managing emotions was seen to predict total CTI as well as all three subscales. The change in variance in negative career thoughts explained by Managing emotions when cognitive ability is statistically controlled ranges from 2.4% to 4.4% prior to career exploration and from 3.0% to 4.8% after. These modest amounts are of similar magnitude to those generally found in other studies (Zeidner *et al*., 2008). The results suggest that managing emotions, alone amongst the four EI branches, was already inversely associated with negative career thinking before the beginning of the career exploration programme and also afterward. As a result, the differences between negative career thoughts prior to and after the programme appear to be reduced to non-significance. The evidence suggests that the Managing emotions component of emotional intelligence as it is conceptualised and measured in this study is associated inversely with negative career thinking and predicts levels of negative career thinking both prior to and after career exploration.

Generally, the ability to regulate one's emotions is viewed as an explanation for understanding how individuals respond to stressful situations in their environment (Cartwright & Pappas, 2007). The ability to control the meaning of potentially problematic experiences so that the harmful effects are more neutral and kept within manageable bounds enhances an individual's ability to cope. In the current study, it may be that increased emotional management abilities played a role in moderating participants' initial negative thoughts with respect to the stresses surrounding their career situation, which then allowed them to negotiate the career exploration process more successfully as was evident in their thoughts after the programme (Zeidner *et al*., 2006). These associations tend to support the view that individuals are possessed of resources upon which they draw to manage the stressors of daily life.

Jordan *et al*. (2002) suggested that individuals higher in EI are better able to break the cycle of negative thinking and coping behaviours that usually accompany job insecurity. They encouraged research that investigates which factor of EI might be more important, and where in the sequence of emotional reactions EI is likely to be most effective. The current research supports and adds to Jordan *et al*.'s research by determining that it is higher levels of EI Managing that are associated with lower levels of negative career thoughts and may, in fact, influence the degree to which individuals experience negative thoughts. It also appears that this ability is present in the individual before any career exploration has taken place, and the continued regulation of negative career thoughts is also evident following career exploration. Considering that emotional managing was predictive of negative career thoughts both before and after career exploration, and cognitive ability only predictive after career exploration, it suggests the possibility that perhaps individuals access their emotional psychological resources first and cognitive resources later, at least in dealing with negative career thoughts.

It may be that higher EI individuals construe the eliciting emotional situation of career exploration with a more positively balanced reaction allowing them to regulate the stress deliberately (Lyons & Schneider, 2005; Muramatsu & Hanoch, 2005). Managing emotions as conceptualised by the Mayer-Salovey ability model, involves deliberately avoiding thoughts and emotions that may be counter-productive and adjusting negative emotions because of increased insight into the factors impacting a particular event (Dunn *et al*., 2007; Jordon *et al*., 2002). It appears that persons with higher EI Managing abilities approach career decisions with fewer negative career thoughts and also navigate the process more successfully. In this sense, EI, or at least emotional management, may be seen as evidence of intelligent behaviour specific to the emotions domain as the individual seeks to adjust to the changes in their life circumstances and attempts to change the environment to suit their purposes.

Conclusions

Fluctuations in the worldwide economy have generally resulted in changes in employment patterns and never has this been so apparent than in the last several years. There has been a growing feeling of uncertainty and insecurity in the workplace leading to increased stress on individuals. Learning how to navigate career changes successfully will require that individuals have greater access to career counselling. Practitioners must, therefore, become knowledgeable regarding the factors that can facilitate career transitions and diminish stress. In the past, models of career decision-making have viewed attitudes and thoughts regarding career strictly as outcomes. Career transitions are rarely devoid of emotions and career decision-making is unlikely to be strictly a rational cognitive process. There is an increasing need to consider attitudes and thoughts as part of the sequence of problem-solving in career exploration and an obligation to assist clients in developing what Kidd (1998, p. 283) calls 'career resilience'. This involves a more holistic approach to career counselling and requires that the role of emotions and their influence on behaviours must be given more consideration.

Investigating the degree of negative thinking with respect to career appears to be a useful component when dealing

with career-exploring clients. Particularly when pre-administration and post-administration can be completed, the career counsellor has at least one gauge by which progress in reducing counter-productive attitudes can be measured. In addition, the results of an EI assessment can be useful, in spite of the costs that are usually associated with purchasing, administrating and reporting. Including an assessment of an individual's EI amongst the other measures typically administered during career exploration would have a number of advantages. Firstly, EI results can be used as an indicator of one's ability to manage negative thinking. This gives the career practitioner a foundation for the kinds of questions asked during counselling and can be used as a screen to suggest what kind and depth of further testing may need to be done. In addition, such results can add one more piece of information that supports or contradicts one's choice of career. Some careers have much higher demands regarding emotional problem-solving and emotional management. For example, a person with very low emotional intelligence scores wishing to become a teacher of children or work in public relations might be counselled to consider other options where chances of success are greater.

Industrial and organisational pychologists can benefit from understanding the theories and current research on intelligence in general and emotional intelligence specifically, which have typically been studied within the realm of cognitive psychology. In addition, it is possible that emotional intelligence, or at least aspects of it, can be modified by training. Industrial and Organisational psychologists would benefit from engaging in programmes that train them to assist clients in becoming more aware of, and increasing, their own emotional intelligence. If vocational counsellors are able both to assess emotional intelligence and provide intervention in managing emotions, they may be able to reduce the perceived uncertainty in their clients and make the career decision-making experience less formidable.

Limitations

Caution should be observed if generalising the results obtained in the current study to other locations and other career exploration programmes. Subjects in the study were localised in one area of British Columbia and were participants in only one programme. In addition, participants were selected because they were experiencing career-related difficulties. It is to be expected that their level of negative career thinking would be higher as a consequence. Any time that scores for a group may be more extreme, natural regression to the mean rather than an actual change must be considered a possible limitation.

It is possible that variables other than those hypothesised to be associated with the criterion variable may be responsible for differences. Further research in which other factors are included as predictor variables would be useful in determining their contributions to change in negative career thinking above and beyond those studied here.

By necessity, data were gathered over a period of approximately two years. One difficulty with this circumstance is the effect of historical events on the behaviour and attitudes of participants.

The measure of cognitive ability for this research was the most convenient and cost-effective to use under the circumstances. However, as with any cognitive test, it does not capture all of the aspects of cognitive ability. Ortony *et al*. (2007) argue that the MSCEIT measure is more in line with crystallised emotional intelligence. If emotional intelligence does have a fluid component it might be associated with fluid intelligence as conceptualised by Cattell. A study in which both fluid and crystallised aspects of intelligence are measured could shed light on this possibility.

Suggestions for future research

Of interest for the sample assessed in this study is that EI Understanding and EI Managing scores are considerably lower than either of Perceiving or Facilitating. In the hierarchical Mayer-Salovey ability model of EI, Understanding and Managing emotions represent higher levels of processing with Managing requiring the foundation provided by the lower three branches. To determine whether these values are typical of unemployed adults, it would be useful to administer the MSCEIT to other samples engaging in career exploration, as well as unemployed adults who are not in career exploration. Analysing mean differences would help determine whether the current sample was unique.

The implementation of a true or quasi-experimental design would address concerns such as regression to the mean as well as shed light on possible causes of negative career change. To do this would require the inclusion of a control group who did not participate in the career exploration programme but completed the necessary assessments.

The developmental trajectory of emotional intelligence over the lifespan needs to be investigated further (Mayer *et al*., 2004). At this point there is conflicting information regarding the development of emotional intelligence with age. Cursory analyses of age groupings in the current study revealed different levels of EI and cognitive ability at different ages. It is recommended that further research investigate the developmental trajectory of cognitive ability, EI and their interaction over time and their relationship with important life outcomes.

Acknowledgements

Competing interests

The authors declare that they have no financial or personal relationship(s) which may have inappropriately influenced them in writing this paper.

Authors' contributions

D.D. (University of South Africa) was responsible for the planning and execution of the project and the analysis of the data. F.C. (University of South Africa) took up the role as supervisor of the research project and managed the academic editing of the article.

References

Amitay, O., & Mongrain, M. (2007). From emotional intelligence to intelligent choice of partner. *The Journal of Social Psychology, 147*(4), 325–343. http://dx.doi.org/10.3200/SOCP.147.4.325-344, PMid:17955747

Amundsen, N., & Borgan, W. (1996). *At the controls: Charting your course through unemployment.* Scarborough, ON: Nelson Canada.

Anderson, M. (2004). Marrying intelligence and cognition. In R. Sternberg & J. Pretz (Eds.), *Cognition and intelligence: Identifying the mechanisms of the mind,* (pp. 268–287). New York, NY: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511607073.015

Antonakis, J. (2004). On why 'emotional intelligence' will not predict leadership effectiveness beyond IQ or the 'big five': An extension and rejoinder. *Organizational Analysis, 12*(2), 171–182. http://dx.doi.org/10.1108/eb028991

Ashkanasy, N. (2004). Emotion and performance. *Human Performance, 17*(2), 137–144. http://dx.doi.org/10.1207/s15327043hup1702_1

Ashkanasy, N., & Daus, C. (2005). Rumors of the death of emotional intelligence in organizational behavior are greatly exaggerated. *Journal of Organizational Behavior, 26*(4), 441–452. http://dx.doi.org/10.1002/job.320

Austin, E., & Saklofske, D. (2005). Far too many intelligences? On the communalities and differences between social, practical, and emotional intelligences. In R. Schulze & R. Roberts (Eds.), *Emotional intelligence: An international handbook,* (pp. 107–128). Ashland, OH: Hogrefe and Huber.

Bar-On, R. (1997). *Bar-On Emotional Quotient Inventory: Technical manual*. Toronto, ON: Multi-Health Systems.

Bar-On, R. (2005). The Bar-On model of emotional-social intelligence. In P. Fernandez Berrocal & N. Extremera (Guest Eds.), Special Issue on Emotional Intelligence. *Psicothema,* 17.

Barsade, S., & Gibson, D. (2007). Why does affect matter in organizations? *Academy of Management Perspectives, 21*(1), 36–59. http://dx.doi.org/10.5465/AMP.2007.24286163

Bastian, V.A., Burns, N.R., & Nettelbeck, T. (2005). Emotional intelligence predicts life skills, but not as well as personality and cognitive abilities. *Personality and Individual Differences, 39*(6), 1135–1145. http://dx.doi.org/10.1016/j.paid.2005.04.006

Brackett, M., & Mayer, J. (2003). Convergent, discriminant, and incremental validity of competing measures of emotional intelligence. *Personality and Social Psychology Bulletin, 29*(9), 1–12. http://dx.doi.org/10.1177/0146167203254596, PMid:15189610

Brackett, M., Mayer, J., & Warner, R. (2004). Emotional intelligence and its relation to everyday behaviour. *Personality and Individual Differences, 36*, 1387–1402. http://dx.doi.org/10.1016/S0191-8869(03)00236-8

Brown, C., George-Curran, R., & Smith, M. (2003). The role of emotional intelligence in the career commitment and decision-making process. *Journal of Career Assessment, 11*(4), 379–392. http://dx.doi.org/10.1177/1069072703255834

Carroll, (1993). *Human cognitive abilities: A survey of factor-analytic studies*. New York, NY: Cambridge University Press.

Cartwright, S., & Pappas, C., (2007). Emotional intelligence, its measurement and implications for the workplace. *International Journal of Management Reviews, 10*(2), 149–171. http://dx.doi.org/10.1111/j.1468-2370.2007.00220.x

Caruso, D., Mayer, J., & Salovey, P. (2002). Relation of an ability measure of emotional intelligence to personality. *Journal of Personality Assessment, 79*(2), 306–320. http://dx.doi.org/10.1207/S15327752JPA7902_12, PMid:12425393

Cattell, R. (1963). Theory for fluid and crystallized intelligence: A critical experiment. *Journal of Educational Psychology, 54*, 1–22. http://dx.doi.org/10.1037/h0046743

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155–159. http://dx.doi.org/10.1037/0033-2909.112.1.155, PMid:19565683

Conte, J.M. (2005). A review and critique of emotional intelligence measures. *Journal of Organizational Behavior, 26*(4), 433–440. http://dx.doi.org/10.1002/job.319

Corbishley, M., & Yost, E. (1989). Assessment and treatment of dysfunctional cognitions in career counseling. *Career Planning and Adult Development Journal, 5*(3), 20–26.

Côté, S., & Miners, C. (2006). Emotional intelligence, cognitive intelligence, and job performance. *Administrative Science Quarterly, 51*, 1–28.

Davidson, J., & Downing, C. (2000). Contemporary models of intelligence. In R.J. Sternberg (Ed.), *Handbook of intelligence.* ch. 3, pp. 34–49. New York, NY: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511807947.004

Deary, I. (2001). *Intelligence: A very short introduction*. New York, NY: Oxford University Press.

Dekker, S., & Schaufeli, W. (1995). The effects of job insecurity on psychological health and withdrawal: A longitudinal study. *Australian Psychologist, 30*(1), 57–63. http://dx.doi.org/10.1080/00050069508259607

Dilchert, S., Ones, D., Davis, R., & Rostow, C. (2007). Cognitive ability predicts objectively measured counterproductive work behaviors. *Journal of Applied Psychology, 92*(3), 616–627. http://dx.doi.org/10.1037/0021-9010.92.3.616, PMid:17484545

Dipeolu, A., Reardon, R., Sampson, J., & Burkhead, J. (2002). The relationship between dysfunctional career thoughts and adjustment to disability in college students with learning disabilities. *Journal of Career Assessment, 10*, 413–427. http://dx.doi.org/10.1177/1069072702238404

Druskat, V., Sala, F., & Mount, G. (Eds.). (2006). *Linking emotional intelligence and performance at work*. Mahwah, NJ: Lawrence Erlbaum.

Dunn, E., Brackett, M., Ashton-James, C., Schneiderman, E., & Salovey, P. (2007). On emotionally intelligent time travel: Individual differences in affective forecasting ability. *Personality and Social Psychology Bulletin, 20*(20), 1–9.

Embretson, S., & Schmidt McCollam, K. (2000). Psychometric approaches to understanding and measuring intelligence. In R.J. Sternberg (Ed.), *Handbook of intelligence,* (pp. 423–444). New York, NY: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511807947.020

Farrelly, D., & Austin, E. (2007). Ability EI as an intelligence? Associations of the MSCEIT with performance on emotion processing and social tasks with cognitive ability. *Cognition and Emotion, 21*(5), 1043–1063. http://dx.doi.org/10.1080/02699930601069404

Feldman Barrett, L., & Gross, J. (2001). Emotional intelligence: A process model of emotion representation and regulation. In T.J. Mayne & G.A. Bonanno (Eds.). *Emotions: Current issues and future directions,* (pp. 286–310). New York, NY: Guilford.

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. http://dx.doi.org/10.1016/j.paid.2005.03.018

Goldstein, H., Zedeck, S., & Goldstein, I. (2002). G: Is this your final answer? *Human Performance, 15*(1–2), 123–142. http://dx.doi.org/10.1080/08959285.2002.9668087

Goleman, D. (1995). *Emotional intelligence: Why it can matter more than IQ*. New York, NY: Bantam Books.

Gordon, V. (1998). Career decidedness types: A literature review. *The Career Development Quarterly, 46*(4), 386–403. http://dx.doi.org/10.1002/j.2161-0045.1998.tb00715.x

Gottfredson, L. (1998). The general intelligence factor. *Scientific American Presents Intelligence, 9*, 24–29.

Gottfredson, L., & Saklofske, D. (2009). Intelligence: Foundations and issues in assessment. *Canadian Psychology, 50*(3), 183–195. http://dx.doi.org/10.1037/a0016641

Hamilton, N., Karoly, P., & Kitzman, H. (2004). Self-regulation and chronic pain: The role of emotion. *Cognitive Therapy and Research, 28*(5), 559–576. http://dx.doi.org/10.1023/B:COTR.0000045565.88145.76

Hawkins, K., Faraone, S., Pepple, J., Seidman, L., & Tsuang, M. (1990). WAIS-R validation of the Wonderlic Personnel Test as a brief intelligence measure in a psychiatric sample. *Psychological Assessment: A Journal of Consulting and Clinical Psychology, 2*(2), 198–201.

Herrnstein, R., & Murray, C. (1994). *The bell curve.* New York, NY: Free Press.

Horn, J., & Cattell, R. (1966). Refinement and test of the theory of fluid and crystallized general intelligences. *Journal of Educational Psychology, 57*(5), 253–270. http://dx.doi.org/10.1037/h0023816, PMid:5918295

Hunt, E. (2005). Information processing and intelligence. In R. Sternberg & J. Pretz (Eds.). *Cognition and intelligence: Identifying the mechanisms of the mind,* (pp. 1–25). New York, NY: Cambridge University Press.

Hunter, J. (1986). Cognitive ability, cognitive aptitude, job knowledge and job performance. *Journal of Vocational Behavior, 29*(3), 340–362. http://dx.doi.org/10.1016/0001-8791(86)90013-8

Hunter, J., & Schmidt, F. (1996). Intelligence and job performance: Economic and social implications. *Psychology, Public Policy, and Law, 2*(3), 447–472. http://dx.doi.org/10.1037/1076-8971.2.3-4.447

Jensen, A. (1998). *The g factor: The science of mental ability*. Westport, CT: Praeger/Greenwood.

Jordan, P., Ashkanasy, N., & Hartel, C. (2002). Emotional intelligence as a moderator of emotional and behavioural reactions to job insecurity. *Academy of Management Review, 27,* 361–372.

Judge, T., & Locke, E. (1993). Effect of dysfunctional thought processes on subjective well-being and job satisfaction. *Journal of Applied Psychology, 78*, 475–490. http://dx.doi.org/10.1037/0021-9010.78.3.475

Judge, T., Scott, B., & Ilies, R. (2006). Hostility, job attitudes, and workplace deviance: Test of a multilevel model. *Journal of Applied Psychology, 91*(1), 126–138. http://dx.doi.org/10.1037/0021-9010.91.1.126, PMid:16435943

Kidd, J.M. (1998). Emotion: An absent presence in career theory. *Journal of Vocational Behavior, 52*(3), 275–288. http://dx.doi.org/10.1006/jvbe.1997.1629

Kinnier, R., & Krumboltz, J. (1986). Procedures for successful career counselling. In N. Gysbers (Ed.). *Designing careers,* (pp. 307–335). San Francisco, CA: Jossey-Bass.

Kline, T. (1996). Defining the field of industrial-organizational psychology. *Canadian Psychology, 37*, 205–209. http://dx.doi.org/10.1037/0708-5591.37.4.205

Lam, D., & Cheng, L. (2001). Cognitive behaviour therapy approach to assessing dysfunctional thoughts. *Counselling Psychology Quarterly, 14*(3), 255–265. http://dx.doi.org/10.1080/09515070110092325

Lam, D., & Gale, J. (2004). Cognitive behaviour therapy: An evidence-based clinical framework for working with dysfunctional thoughts. *Counselling Psychology Quarterly, 17*(1), 53–67. http://dx.doi.org/10.1080/09515070410001665884

Lam, D., & Kirby, S. (2002). Is emotional intelligence an advantage? An exploration of the impact of emotional and general intelligence on individual performance. *Journal of Social Psychology, 142*, 133–143. http://dx.doi.org/10.1080/00224540209603891, PMid:11913831

Liu, Y., Prati, L.M., Perrewe, P., & Ferris, G. (2008). The relationship between emotional resources and emotional labor: An exploratory study. *Journal of Applied Social Psychology, 38*(10), 2410–2439. http://dx.doi.org/10.1111/j.1559-1816.2008.00398.x

Lopes, P., Salovey, P., & Straus, R. (2003). Emotional intelligence, personality, and the perceived quality of social relationships. *Personality and Individual Differences, 35*, 641–658. http://dx.doi.org/10.1016/S0191-8869(02)00242-8

Lopes, P., Salovey, P., Côté, S., & Beers, M. (2005). Emotion regulation abilities and the quality of social interaction. *Emotion, 5*(1), 113–118. http://dx.doi.org/10.1037/1528-3542.5.1.113, PMid:15755224

Lopes, P., Grewal, D., Kadis, J., Gall, M., & Salovey, P. (2006). Evidence that emotional intelligence is related to job performance and affect and attitudes at work. *Psicothema, 18*(Suppl), 132–138. PMid:17295970

Lopes, P., Brackett, M., Nezlek, J., Schutz, A., Sellin, I., & Salovey, P. (2004). Emotional intelligence and social interaction. *Personality and Social Psychology Bulletin, 30*(8), 1018–1034. http://dx.doi.org/10.1177/0146167204264762, PMid:15257786

Lustig, D., & Strauser, D. (2008). The impact of sense of coherence on career thoughts for individuals with disabilities. *Rehabilitation Counseling Bulletin, 51*(3), 139–147. http://dx.doi.org/10.1177/0034355207311313

Lyons, J., & Schneider, T. (2005). The influence of emotional intelligence on performance. *Personality and Individual Differences, 39*, 693–703. http://dx.doi.org/10.1016/j.paid.2005.02.018

MacCann, C., & Roberts, R. (2008). New paradigms for assessing emotional intelligence: Theory and data. *Emotion, 8*(4), 540–551. http://dx.doi.org/10.1037/a0012746, PMid:18729584

Matthews, G., Zeidner, M., & Roberts, R. (2002). *Emotional Intelligence: Science and Myth.* Cambridge, MA: MIT.

Mayer, J., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. Sluyter (Eds.), *Emotional Development and Emotional Intelligence: Educational Implications*, (pp. 3–31). New York: Perseus Books Group.

Mayer, J., Caruso, D., & Salovey, P. (1999). Emotional intelligence meets traditional standards for an intelligence. *Intelligence, 27*, 267–298. http://dx.doi.org/10.1016/S0160-2896(99)00016-1

Mayer, J., Salovey, P., & Caruso, D. (2000). Models of emotional intelligence. In R.J. Sternberg (Ed.), *The Handbook of Emotional Intelligence*, (pp. 396–420). New York: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511807947.019

Mayer, J., Salovey, P., & Caruso, D. (2004). Emotional intelligence: Theory, findings, and implications. *Psychological Inquiry, 15*(3), 197–215. http://dx.doi.org/10.1207/s15327965pli1503_02

Mayer, J., Salovey, P., & Caruso, D. (2008). Emotional intelligence: New ability or eclectic traits? *American Psychologist, 63*(6), 503–517. http://dx.doi.org/10.1037/0003-066X.63.6.503, PMid:18793038

Mayer, J., Salovey, P., Caruso, D., & Sitarenios, G. (2003). Measuring emotional intelligence with the MSCEIT V2.0. *Emotion, 3*, 97–105. http://dx.doi.org/10.1037/1528-3542.3.1.97, PMid:12899321

McEnrue, M., & Groves, K. (2006). Choosing among tests of emotional intelligence: What is the evidence? *Human Resource Development Quarterly, 17*(1), 9–42. http://dx.doi.org/10.1002/hrdq.1159

McWhirtner, E., Rasheed, S., & Crothers, M. (2000). Effects of high school career education on social cognitive variables. *Journal of Counseling Psychology, 47*(3), 330–341. http://dx.doi.org/10.1037/0022-0167.47.3.330

Morano, M. (2006). How students choose a major: The effect of a college major decision-making course on a student's anxiety. *Dissertation Abstracts International: Section A. Humanities and Social Sciences, 66*(11-A), 3931.

Muchinsky, P. (2006). *Psychology applied to work*. Belmont, CA: Thomson Wadsworth.

Muramatsu, R., & Hanoch, Y. (2005). Emotions as a mechanism for boundedly rational agents: The fast and frugal way. *Journal of Economic Psychology, 26*(2), 201–221. http://dx.doi.org/10.1016/j.joep.2004.03.001

Newman, S., & Just, M. (2004). The neural bases of intelligence: A perspective based on functional neuroimaging. In R. Sternberg & J. Pretz (Eds.), *Cognition and intelligence: Identifying the mechanisms of the mind,* (pp. 88–103). New York, NY: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511607073.006

Newman, J., Fuqua, D., & Seaworth, T. (1989). The role of anxiety in career indecision: Implications for diagnosis and treatment. *Career Development Quarterly, 37*, 221–230. http://dx.doi.org/10.1002/j.2161-0045.1989.tb00826.x

Ortony, A., Revelle, W., & Zinbarg, R. (2007). Why emotional intelligence needs a fluid component. In G. Matthews, M. Zeidner & R. Roberts (Eds.), *The Science of Emotional Intelligence: Knowns and Unknowns,* (pp. 288–304). Oxford: Oxford University Press.

Osborn, D. (1998). The relationships among perfectionism, dysfunctional career thoughts, and career indecision. Doctoral dissertation, Florida State University. *Dissertation Abstracts International, 59*(10), 3746A. (UMI No. 9911447).

Osborn, D., Howard, D., & Leierer, S. (2007). The effect of a career development course on the dysfunctional career thoughts of racially and ethnically diverse college freshmen. *The Career Development Quarterly, 55*, 365–377. http://dx.doi.org/10.1002/j.2161-0045.2007.tb00091.x

Osipow, S. (1999). Assessing career indecision. *Journal of Vocational Behaviour, 55*(3), 147–154. http://dx.doi.org/10.1006/jvbe.1999.1704

Paivandy, S., Bullock, E., Reardon, R., & Kelly, D. (2008). The effects of decision-making style and cognitive thought patterns on negative career thoughts. *Journal of Career Assessment, 16*(4), 474–488. http://dx.doi.org/10.1177/1069072708318904

Patton, W., & Creed, P. (2001). Developmental issues in career maturity and career decision status. *Career Development Quarterly, 49*, 336–351. http://dx.doi.org/10.1002/j.2161-0045.2001.tb00961.x

Peterson, G., Sampson, J., & Reardon, R. (1991). *Career development and services: A cognitive approach.* Pacific Grove, CA: Brooks/Cole.

Peterson, G., Sampson, J., Reardon, R., & Lenz, J. (1996). Becoming career problem solvers and decision makers: A cognitive information processing approach. In D. Brown & L. Brooks (Eds.), *Career choice and development,* (3rd edn., pp. 423–475). San Francisco, CA: Jossey Bass.

Petrides, K., & Furnham, A. (2006). The role of trait emotional intelligence in a gender-specific model of organizational variables. *Journal of Applied Social Psychology, 36*(2), 552–569. http://dx.doi.org/10.1111/j.0021-9029.2006.00019.x

Phillips, S., & Blustein, D. (1994). Readiness for career choices: Planning, exploring, and deciding. *Career Development Quarterly, 43*, 63–67. http://dx.doi.org/10.1002/j.2161-0045.1994.tb00847.x

Ramos, N., Fernandez-Berrocal, P., & Extremera, N. (2007). Perceived emotional intelligence facilitates cognitive-emotional processes of adaptation to an acute stressor. *Cognition and Emotion, 21*(4), 758–772. http://dx.doi.org/10.1080/02699930600845846

Reardon, R., Lenz, J., Sampson, J., & Peterson, G. (2000). *Career Development and Planning: A Comprehensive Approach.* Scarborough, ON: Nelson/Thomson Learning.

Ree, M., & Earles, J. (1991). Predicting training success: Not much more than g. *Personnel Psychology, 44*, 321–332. http://dx.doi.org/10.1111/j.1744-6570.1991.tb00961.x

Ree, M., Carretta, T., & Teachout, M. (1995). Role of ability and prior job knowledge in complex training performance. *Journal of Applied Psychology, 80*(6), 721–730. http://dx.doi.org/10.1037/0021-9010.80.6.721

Reed, C., Lenz, J., Reardon, R., & Leierer, S. (2000). *Reducing negative career thoughts with a career course: Technical report No. 25.* Retrieved June 16, 2009, from http//www.career.fsu.edu/techcenter//TR-25.html

Reese, R., & Miller, C.D. (2006). Effects of a university career development course on career decision-making self-efficacy. *Journal of Career Assessment, 14*(2), 252–266. http://dx.doi.org/10.1177/1069072705274985

Roberts, R.D., Zeidner, M., & Matthews, G. (2001). Does emotional intelligence meet traditional standards for an intelligence? Some new data and conclusions. *Emotion, 1*(3), 196–231. http://dx.doi.org/10.1037/1528-3542.1.3.196, PMid:12934681

Roll, T., & Arthur, N. (July 2002). *Beliefs in career counseling.* Paper presented at the National Consultation on Career Development. Ottawa, ON.

Rude, S., & McCarthy, C. (2003). Emotional functioning in depressed and depression-vulnerable college students. *Cognition and Emotion, 17*, 799–806. http://dx.doi.org/10.1080/02699930302283

Salovey, P., & Pizarro, D. (2003). The value of emotional intelligence. In R.J. Sternberg, J. Lautrey & T.I. Lubart (Eds.), *Models of intelligence: International perspectives,* (pp. 263–278). Washington, DC: American Psychological Association.

Sampson, J.P., Peterson, G.W., Lenz, J.G., Reardon, R.C., & Saunders, D.E. (1996). *Career Thoughts Inventory: Professional manual*. Odessa, FL: Psychological Assessment Resources.

Sampson, J.P., Reardon, R.C., Peterson, G.W., & Lenz, J.G. (2004). *Career counselling and services: A cognitive information processing approach*. Belmont, CA: Brooks/Cole.

Saunders, D., Peterson, G., Sampson, J., & Reardon, R. (2000). Relation of depression and dysfunctional career thinking to career indecision. *Journal of Vocational Behavior, 56*, 288–298. http://dx.doi.org/10.1006/jvbe.1999.1715

Schaie, K. (2001). Emotional intelligence: Psychometric status and developmental characteristics – Comment on Roberts, Zeidner, and Matthews. *Emotion, 1*(3), 243–248. http://dx.doi.org/10.1037/1528-3542.1.3.243, PMid:12934683

Schmidt, F., & Hunter, J. (1998). The validity and utility of selection methods in personnel psychology: Practical and theoretical implications of 85 years of research findings. *Psychological Bulletin, 124*, 262–274. http://dx.doi.org/10.1037/0033-2909.124.2.262

Serling, D., & Betz, N. (1990). Development and evaluation of a measure of fear of commitment. *Journal of Counseling Psychology, 37*, 91–97. http://dx.doi.org/10.1037/0022-0167.37.1.91

Slaski, M., & Cartwright, S. (2003). Emotional intelligence training and its implications for stress, health and performance. *Stress and Health, 19*, 233–239. http://dx.doi.org/10.1002/smi.979

Stankov, L. (2003). Complexity in human intelligence. In R. Sternberg, J. Lautrey & T. Lubart (Eds.), *Models of intelligence: International perspectives,* (pp. 27–42). Washington, DC: American Psychological Association.

Sternberg, R. (1997). The concept of intelligence and its role in lifelong learning and success. *American Psychologist, 52*(10), 1030–1037. http://dx.doi.org/10.1037/0003-066X.52.10.1030

Sternberg, R. (2003). A broad view of intelligence: The theory of successful intelligence. *Consulting Psychology Journal: Practice and Research, 55*(3), 139–154. http://dx.doi.org/10.1037/1061-4087.55.3.139

Sternberg, R. (2004). Intelligence in humans. *Encyclopedia of Applied Psychology, 2*, 321–328.

Sternberg, R. (2009). The theory of successful intelligence. In R. Sternberg, J. Kaufman & E. Grigorenko (Eds.), *The essential Sternberg: Essays on intelligence, psychology, and education,* (pp. 71–100). New York, NY: Springer.

Sternberg, R., & Hedlund. (2002). Practical intelligence, g, and work psychology. *Human Performance, 15*(2), 143–160. http://dx.doi.org/10.1080/08959285.2002.9668088

Sternberg, R., & Salter, W. (1982). Conceptions of intelligence. In R. Sternberg (Ed.), *Handbook of Human Intelligence,* (pp. 3–28). Cambridge, UK: Cambridge University Press.

Sternberg, R., Lautrey, J., & Lubart, T. (2003). Where are we in the field of intelligence, How did we get here, and Where are we going? In R. Sternberg, J. Lautrey & T. Lubart (Eds.), *Models of intelligence: International perspectives,* (pp. 3–25). Washington, DC: American Psychological Association.

Strauser, D., Lustig, D., & Ciftci, A. (2008). Psychological well being: Its relation to work personality, vocational identity, and career thoughts. *The Journal of Psychology, 142*(1), 21–35. http://dx.doi.org/10.3200/JRLP.142.1.21-36, PMid:18350842

Sud, A., & Kumar, S. (2006). Dysfunctional career thoughts, achievement motivation, and test anxiety among university students. *Pakistan Journal of Psychological Research, 21*(1–2), 41–51.

Super, D. (1990). A life-span, life-space approach to career development. In D. Brown & L. Brooks (Eds.), *Career choice and development*. (2nd edn.). San Francisco, CA: Jossey-Bass.

Super, D., Savickas, M., & Super, C. (1996). The life span, life-space approach to careers. In D. Brown, L. Brooks & Associates (Eds.), *Career choice and development,* (3rd edn., pp. 121–178). San Francisco, CA: Jossey-Bass.

Terre Blanche, M., Durrheim, K., & Painter, D. (2006). *Research in practice. Applied methods for the social sciences*. Cape Town: UCT Press.

Tinto, V. (1993). *Leaving college: Rethinking the causes and cures of student attrition*. (2nd edn.) Chicago, IL: University of Chicago Press.

Trinidad, D., & Johnson, C.A. (2002). The association between emotional intelligence and early adolescent tobacco and alcohol use. *Personality and Individual Differences, 32*(1), 95–105. http://dx.doi.org/10.1016/S0191-8869(01)00008-3

Van Rooy, D., Viswesvaran, C., & Pluta, P. (2005). An evaluation of construct validity: What is this thing called emotional intelligence? *Human Performance, 18*(4), 445–462. http://dx.doi.org/10.1207/s15327043hup1804_9

Viswesvaran, C., & Ones, D. (2002). Meta-analysis of fakability estimates: Implications for personality measurement. *Educational and Psychological Measurement, 59*(2), 197–210. http://dx.doi.org/10.1177/00131649921969802

Weinstein, F., Healy, C., & Ender, P. (2002). Career choice anxiety, coping and perceived control. *Career Development Quarterly, 50*(4), 339–350. http://dx.doi.org/10.1002/j.2161-0045.2002.tb00582.x

Wonderlic Personnel Test. (2002). *Wonderlic Personnel Test & Scholastic Level Exam User's Manual*. Libertyville, IL: Wonderlic, Inc.

Yip, J., & Martin, R. (2005). Sense of humor, emotional intelligence, and social competence. *Journal of Research in Personality, 40*, 1202–1208. http://dx.doi.org/10.1016/j.jrp.2005.08.005

Zeidner, M., Matthews, G., & Roberts, R., (2004). Emotional intelligence in the workplace: A critical review. *Applied Psychology: An International Review, 53*(3), 371–399. http://dx.doi.org/10.1111/j.1464-0597.2004.00176.x

Zeidner, M., Matthews, G., & Roberts, R., (2006). Emotional intelligence, coping with stress, and adaptation. In J. Ciarrochi, J. Forgas & J. Mayer (Eds.), *Emotional intelligence in everyday life.* (2nd edn.), (pp. 100–125). New York, NY: Psychology Press.

Zeidner, M., Roberts, R., & Matthews, G. (2008). The science of emotional intelligence: Current consensus and controversies. *European Psychologist, 13*(1), 64–78. http://dx.doi.org/10.1027/1016-9040.13.1.64