1   **Emotional Intelligence and Career Decision-Making Difficulties:**

2   **The Mediating Role of Career Decision Self-Efficacy**

3   **Abstract**

4   Emotions and confidence are said to play an important role in the career decision-making

5   process. The present study, comprising 472 students attending a large university in the United

6   Kingdom, advances current thinking in this area in two ways. First, by identifying specific

7   emotional intelligence (EI) abilities that are key to decision making, and second, by exploring

8   the role of career decision self-efficacy (CDSE) as a potential mediator in the relationship

9   between EI and career decision-making difficulties (CDD). Regression and mediation

10   analyses indicated that EI was negatively related to CDD and that effects were strongest for

11   self-emotion appraisal. EI was also positively related to CDSE, with use of emotion eliciting

12   the strongest effect. Career decision self-efficacy was largely found to mediate the

13   relationship between overall and specific abilities of EI and CDD, with full mediation effects

14   observed for self-emotion appraisal and use of emotion and various difficulties. The findings

15   and limitations are discussed with reference to the literature together with practical

16   implications for career counseling and suggestions for future research.

17   *Key Words*: emotional intelligence; career decision self-efficacy; career decision-

18   making difficulties; university students; mediation

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1 **Emotional Intelligence and Career Decision-Making Difficulties:**

2 **The Mediating Role of Career Decision Self-Efficacy**

3 During the course of their University studies, students are often confronted with important

4 career decisions. Making a career decision, however, is not always easy, but often involves a

5 complex process. It is not surprising that many university students experience difficulties

6 making decisions about their future careers. Indeed, academics and professionals consider

7 difficulties in the career decision-making process to be a widespread problem (Di Fabio,

8 Palazzeschi, Asulin-Peretz, & Gati, 2012), and a topic of utmost concern to students, career

9 counselors, and the like.

10 Gati, Krausz, and Osipow (1996) developed a framework of *career decision-making*

11 *difficulties* (CDD) that individuals face when making career decisions. This taxonomy

12 includes three general types of difficulties, which originate from a *lack of readiness, lack of*

13 *information,* and *inconsistent information.* These three categories can be temporally

14 distinguished into difficulties encountered before and during the decision-making process.

15 Specifically, lack of readiness is experienced before the decision-making process and includes

16 diminished motivation to embark on the career decision-making process, a general

17 indecisiveness in making decisions and dysfunctional myths about career decision-making

18 (Amir & Gati, 2006). Lack of information and inconsistent information are often encountered

19 while trying to make a career-related decision. Students may experience lack of information

20 in the form of inadequate knowledge about the procedures involved in the career-decision

21 making process; lack of information about themselves, their preferences and perceived their

22 capabilities; lack of information about occupations and their characteristics; and the ways

23 through which one might obtain such information about themselves and prospective

24 occupations (Amir & Gati, 2006). Difficulties arising from inconsistent information are based

25 on unreliable information, a lack of compatibility between an individual's preferences and

1   capabilities, and a lack of congruence between one's own preferences and that of significant

2   others' (Amir & Gati, 2006; Koumoundourou, Tsaousis & Kounenou, 2011).

3   　　　　To cope with career decision-making difficulties, students often seek academic advice

4   from career counselling services. When career decision-making difficulties are not effectively

5   dealt with, students may be unable to make optimal career decisions which could, in turn, lead

6   to problems in student retention (Drake, 2011). Consequently, career counseling services in

7   universities play a crucial part in the process of career decision-making. In order to be able to

8   assist students in overcoming the difficulties associated with choosing a future career path,

9   career counselors need to understand the many factors and aspects associated with career

10   decision-making difficulties. A key construct that has consistently been shown to have a

11   measureable impact students' career decision-making difficulties is career decision self-

12   efficacy (CDSE). CDSE, which is defined as an individual's belief or confidence that he or

13   she is able to carry out tasks specific to making career decisions (Taylor & Betz, 1983), has

14   been found in career intervention research, to be successful in reducing overall levels of

15   career indecision and career decision-making difficulties (Lam & Santos, 2017). Research by

16   Gati, Amir, and Landman (2010) suggest that difficulties stemming from external causes of a

17   cognitive nature are usually more tangible and can benefit from a well-defined treatment (e.g.,

18   providing relevant information), whereas difficulties stemming from internal causes of an

19   emotional nature are more difficult to depict and thus appropriate treatment is less obvious

20   and may require a different approach. Valach, Young, and Lynam, (1996) argue that

21   awareness of one's emotions is essential in making a career decision for three reasons: (a)

22   emotions drive actions, (b) emotions modulate actions, and (c) emotions assist the formation

23   of narratives about careers. Emotions are thus crucial to the career decision-making process,

24   and for this reason, the concept of *emotional intelligence* (EI) has emerged as a significant

25   variable in the career decision-making literature (Brown, George-Curran & Smith, 2003;

1 Puffer, 2011; Di Fabio & Kenny, 2011; Di Fabio, 2012; Di Fabio, Palazzeschi & Bar-On,

2 2012; Di Fabio & Saklofske, 2014).

3   The present study makes a significant contribution to the literature in three ways. First,

4 it seeks to address a crucial gap in the literature by examining the role of ability-based

5 emotional intelligence and its components in predicting career-decision-making difficulties.

6 The authors contend that when emotional intelligence is operationalised as an ability-based

7 construct, unlike personality traits, it readily lends itself to interventions that can be enhanced

8 through targeted training, coaching or counselling (Grant, 2007; Di Fabio & Kenny, 2011;

9 Hodzic, Ripoll, Lira & Zenasni, 2015). Identifying precisely which components of emotional

10 intelligence are crucial to the decision-making process affords a more targeted approach to

11 training interventions, which can then be implemented by counselors and the like to help

12 students make better career decisions. Second, the present study also seeks to examine the

13 inter-relationships between the various components of emotional intelligence and career-

14 decision self-efficacy in predicting career decision-making difficulties. While it is known that

15 emotional intelligence and self-efficacy each have an impact on career decision making

16 outcomes, the mediating role of self-efficacy upon specific components of emotional

17 intelligence and their subsequent impact on career decision making difficulties is less

18 understood. Understanding the mechanisms through which these constructs operate can

19 provide invaluable information for the design of future career interventions. Lastly, the study

20 seeks to provide a factorial validation of all the instruments used in a diverse, UK-based

21 population.

22   **Emotional Intelligence**

23 The early beginnings of EI emerged from Thorndike's concept of social intelligence

24 developed in 1920 which concerned one's capability to engage in interpersonal interactions in

25 accordance with his/her understanding of others. The term emotional intelligence appeared in

1   the literature several times long before the first formal model was introduced (Leuner, 1966)

2   in 1990 by Mayer and Salovey (1995). Following Mayer and Salovey's work, many different

3   definitions and models of EI have emerged. Despite varying definitions of EI, however, the

4   general consensus is that the construct is useful for identifying the necessary skills for

5   understanding and experiencing emotions (Esmond-Kiger et al., 2006; Koman and Wolff,

6   2008; Mayer, Roberts & Barsade, 2008), which could direct behavior and thoughts and

7   enhance performance. The research on EI generally follows two approaches. These are the

8   ability-based approach, which concerns individual mental capacities important to EI, and the

9   trait-based approach, which regards EI as a cohesive and global trait, akin to personality.

10 While it is beyond the scope of the present research to debate the validity of ability versus

11 trait based approaches, a distinction must be drawn between the two. Trait based approaches

12 define EI as "a constellation of behavioural dispositions and self-perceptions concerning

13 one's ability to recognize, process and utilise emotion-laden information" (Furnham &

14 Petrides, 2003, p. 278), including well-being, sociability, self-control and emotionality,

15 thereby placing EI clearly within the domain of personality. Although trait-based measures do

16 have utility in emotions research, they do not lend themselves to enhancement through

17 intervention, and are thus less relevant to career intervention research than ability-based

18 approaches which elicit improvements through training and intervention.

19   Ability-based emotional intelligence was initially defined by Salovey & Mayer (1990,

20 p189.) as "the ability to monitor one's own and others' feelings and emotions, to discriminate

21 among them, and to use this information to guide one's thinking and action". They later

22 extended this definition to include skills relating to the "ability to perceive accurately,

23 appraise, and express emotion; the ability to access feelings when they facilitate thought; the

24 ability to understand and analyse emotions and emotional knowledge; and the ability to

25 regulate emotions to promote emotional and intellectual growth" (Salovey & Mayer, 1997,

1   P.10). Davies, Stankov & Roberts (1998) qualitatively reviewed the EI literature and from it

2   proposed a four-dimensional taxonomy of EI which includes: a) appraisal and expression of

3   emotion in oneself, b) appraisal and recognition of emotion in others, c) regulation of emotion

4   in oneself, and d) use of emotion to facilitate performance. It is from Mayer's 1997 definition

5   of EI and Davies et al.'s taxonomy that Wong and Law (2002) developed a four-dimensional

6   construct of EI utilised in the present study. What is unique to the Wong and Law's

7   operationalization of EI however is the mechanism of emotion regulation proposed by Gross

8   (1998a, 1998b), which refers to "the processes by which individuals influence which

9   emotions they have, when they have them, and how they experience and express these

10   emotions''. Through this mechanism employees will able to modulate their perceptions of the

11   work environment through antecedent-focused emotion regulation strategies such as by

12   selectively interacting with others or modifying their work environment. Similarly, they may

13   also be able to modulate the impact of emotional stimuli from the work environment through

14   response-focused emotion strategies by intensifying, diminishing, prolonging, or curtailing

15   certain emotions. According to Wong and Law (2002), EI comprises: a) *self-emotion*

16   *appraisal* (SEA), b) *others' emotion appraisal* (OEA), c) *regulation of emotion* (ROE), and d)

17   *use of emotion* (UOE). Self-emotion appraisal refers to the ability to comprehend one's own

18   internal emotions and express these naturally. Others' emotion appraisal refers to the ability to

19   comprehend and sensitive to others' emotions. Similarly, regulation of emotion pertains to the

20   skills utilized to regulate one's emotions, such as controlling one's temper or rapid recovery

21   from a state of psychological distress. Use of emotion concerns the capacity to apply

22   emotions to performance and action.

23   In recent years, a number of studies have demonstrated the importance of EI as a

24   useful resource in educational settings and in predicting career-related outcomes (Stough,

25   Saklofske, & Parker, 2009) Previous research has shown that emotional intelligence has a

1   critical impact on career decision-making difficulties (Di Fabio et al., 2012; Di Fabio &

2   Saklofske, 2014). Indeed, lower levels of emotional intelligence have been associated with

3   increases in each of the three categories of CDD (Di Fabio & Palazzeschi, 2009). It is worth

4   highlighting, however, that Di Fabio and Palazzeschi's research utilized what is known as a

5   mixed model of emotional intelligence, which is part ability and part trait, and includes the

6   dimensions interpersonal, intrapersonal, adaptability, stress management and general mood.

7   Interestingly, however, it was the intrapersonal and stress management dimensions which

8   were inversely associated with a lack of readiness; the intrapersonal and adaptability

9   dimensions inversely related to lack of information; and the intrapersonal and interpersonal

10   dimensions inversely related to the inconsistent information dimension. In short, their

11   research suggests that it is those ability components of EI that are primarily related to

12   understanding their own as well as others' emotions that are significantly related to career

13   decision-making difficulties. More recent research by Di Fabio and Saklofske (2014),

14   however, failed to find any significant relationship between ability-based EI as measured by

15   the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT) (Mayer, Salovey &

16   Caruso, 2002) and career decision-making difficulties but found significant results for trait EI

17   and CDD. Although the MSCEIT comprises 4 dimensions, perceiving emotions, facilitating

18   thought, understanding emotions and managing emotions, it does not capture emotion

19   regulation in the same way as the Wong and Law scale.

20   According to the Wong and Law conceptualization of EI, individuals who are high in

21   SEA are likely to have a better understanding of one's own preferences and capabilities,

22   potentially resulting in a more targeted search for information. This, could, in turn, result in

23   fewer difficulties in career decision-making. Similarly, individuals who are high in UOE are

24   more likely to encourage themselves to do better in terms of career aspirations and direct their

25   emotions into positive career-related endeavours. The authors predict that both these aspects

1   of emotional intelligence that are central to career-decision making. In line with the above, the

2   following hypothesis is proposed.

3   **H1: There is an inverse relationship between EI and CDD, specifically, the impact is**

4   **strongest for the EI sub-dimensions self-emotion appraisal (SEA) (H 1a) and use of**

5   **emotion (UOE) (H 1b).**

6

7   **Career Decision Self-Efficacy and Career Decision-Making Difficulties**

8   While some individuals experience difficulties in making career decisions, others make such

9   choices with greater ease. Indeed, an individual's self-belief in making career-related

10   decisions is considered a crucial aspect of the career decision-making process (Di Fabio &

11   Saklofske, 2014). Originally proposed by Bandura (1977) within his social cognitive theory,

12   *career decision self-efficacy* (CDSE) can be defined as an individual's belief or confidence

13   that he or she is able to carry out tasks specific to making career decisions (Taylor & Betz,

14   1983). Career decision self-efficacy comprises task-related domains which concern optimal

15   levels of self-appraisal, information gathering, career-related goal selection, planning, and

16   problem-solving. Taylor and Betz (1983) initially hypothesized that weak decision self-

17   efficacy would inhibit career exploratory behavior and the development of decision-making

18   skills, which could, in turn, exacerbate career indecision and other problems in career

19   decision-making. Conversely, high levels of career decision self-efficacy could have a

20   positive influence on the decision-making process. It can now be said with some certainty that

21   CDSE is related to indices of adaptive career decision-making such as career indecision (e.g.,

22   Bergeron & Romano, 1994; Betz, Klein, & Taylor, 1996; Taylor & Popma, 1990), vocational

23   identity (Robbins, 1985), more adaptive career beliefs (Luzzo & Day, 1999), fear of career

24   commitment (Betz & Serling, 1993), career exploratory behaviour (Blustein, 1989), and more

25   recently, to career decision-making difficulties (Lam, 2016, Osipow & Gati, 1998, and Amir

1 & Gati, 2006). Gati and colleagues contend that individuals who are more adept in making

2 career decisions, are consequently, at a more mature stage of the career decision-making

3 process (Amir & Gati, 2006). CDSE also seems to affect an individual's inclination to seek

4 professional help in making career decisions (Taylor & Betz, 1983). Evidence also seems to

5 suggest that because self-efficacy in a malleable construct, interventions aimed at increasing

6 CDSE can ultimately reduce career indecision and CDD (Lam & Santos 2017). Hence, the

7 following hypothesis is proposed.

8 **H2. There is an inverse relationship between CDSE on total CDD and its main**

9 **categories of lack of readiness (H 2a), lack of information (H 2b) and of inconsistent**

10 **information (H2c).**

11 <center>**The Impact of EI on CDSE**</center>

12 A number of studies have suggested that there exists a positive relationship between

13 emotional intelligence and career decision self-efficacy. A study by Brown et al. (2003) in

14 the US found that overall emotional intelligence as measured by the Emotional Intelligence

15 Inventory Revised (Tapia, 2001) was significantly related to CDSE and that all four factors,

16 empathy, utilization of feelings, handling relationships and self-control significantly predicted

17 CDSE. Specifically, it was the utilization of feelings and self-control factors that exhibited

18 stronger effects on CDSE. A study by Jiang (2014) utilizing the Wong and Law EI scale in a

19 sample of Chinese and Korean undergraduates found that all EI factors were positively related

20 to CDSE with UOE having the strongest effect. A study by Di Fabio et al. (2012) however

21 found that while trait EI and mixed model EI significantly predicted CDSE, ability EI did not.

22 A common trend in the research suggests that when making a career-related decision, the use

23 of emotions is particularly influential in actualizing personal goals and achievements. In line

24 with the evidence presented thus far, the following hypothesis is proposed:

1   **H3. There is a positive relationship between EI and CDSE, specifically, the effects are**

2   **strongest for SEA (H 3a) and UOE (H 3b).**

3

4   **The Relationship between EI, CDSE, and CDD**

5   The role CDSE plays in the relationship between an individual's ability to regulate their

6   emotions and how they make decisions about their future careers has not been previously

7   investigated. Hence, a central aim of the present study is to explore the role of CDSE on the

8   relationship between EI and CDD. Based on the literature reviewed, it can be established that

9   emotional intelligence is negatively related to career decision-making difficulties (Di Fabio et

10 al., 2012; Di Fabio & Saklofske, 2014). Similarly, evidence has suggested that career decision

11 self-efficacy is related to career decision-making difficulties (Gati, Fishman-Nadav, & Shiloh,

12 2006). More recently, however, research also suggests that emotional intelligence plays an

13 important role in relation to career decision self-efficacy (Di Fabio & Saklofske, 2014; Jiang,

14 2014). Improving emotional intelligence may not only help reduce career decision-making

15 difficulties but also increase confidence in one's capability in making an optimal career

16 decision (Brown et al., 2003; Di Fabio & Saklofske, 2014). This raises the question whether

17 career decision self-efficacy could explain, at least in part, the relationship between emotional

18 intelligence and career decision-making difficulties. The present study examines the inter-

19 relationship of three constructs, EI, CDSE and CDD by adapting Lent's social cognitive

20 career theory (Lent, Brown, & Hackett, 2002). According to the theory, career-related

21 performance is influenced by a triadic interplay among *ability*, *self-efficacy*, and *outcome*

22 *expectations and goals*. The authors thus argue that emotional intelligence abilities influence

23 self-efficacy expectations which, in turn, affect career intentions and outcome expectations in

24 the form of career decision-making difficulties. Figure 1 illustrates this relationship between

25 EI, EI subscales, CDSE, CDD and CDD main categories. The authors hypothesize that

26 emotional abilities could affect decision-making difficulties through career-related

                                                                                          9

1   confidence, specifically that CDSE mediates the relationship between EI and CDD. In line

2   with the above, the following hypotheses are proposed.

3   **H4. CDSE will mediate the relationship between total EI and total CDD.**

4   **H 4a.CDSE will mediate the relationship between SEA and total CDD and its main**

5   **categories.**

6   **H 4b. CDSE will mediate the relationship between UOE and total CDD and its main**

7   **categories**

8   [Insert figure 1 here]

9   **Method**

10   **Participants**

11   The study sample consisted of 472 students (Mage=25, SD = 7.75; 64.6% female) attending a

12   large university in the United Kingdom, with a large proportion aged between 18 and 25

13   (emerging adulthood = 68.9%) and a smaller proportion aged between 26 and 55 (adulthood =

14   31.1%). The study sample comprised British (65.7%) and European/International (34.3%)

15   students. The respondents' education strata were more or less evenly distributed between

16   undergraduate (50.6%) and postgraduate (49.4%) students. A small proportion of respondents

17   were part-time (13.3%) while most were full-time students (86.7%).

18   **Procedure**

19   After receiving ethical approval for the study, an online survey was designed. Students were

20   contacted by email and invited to participate in an online survey that sought to examine the

21   role of emotions and confidence in career decision-making. Access to students' email

22   addresses was obtained through the university's career and employability service. The

23   invitation email included participant information describing the aim of the survey,

24   confidentiality issues and the right to withdraw from the survey at any time. A hyperlink to

25   the online survey was provided at the end of the email. The survey took approximately 15

1   minutes to complete and included a consent form, a few demographic questions, the three

2   questionnaires used in the study and a debriefing page.

3   **Measures**

4   **1.   Career decision-making difficulties revised version (CDDQr by Gati and Saka,**

5   **2001b)**

6   Career decision-making difficulties were measured using the 34-item revised version of the

7   Career Decision Difficulties Questionnaire (CDDQr) by Gati and Saka (2001b). The CDDQr

8   is a self-report instrument that asks respondents to indicate the degree to which each statement

9   describes them on a 9-point Likert-type scale (1–does not describe me to 9–describes me

10   well). The measure includes statements such as ''I know that I have to choose a career, but I

11   don't have the motivation to make the decision now'' and ''I find it difficult to make a career

12   decision because I do not have enough information about the variety of occupations or

13   training programs that exist''. The CDDQr generates scores on three subcategories, readiness

14   (R), lack of information (LI) and inconsistent information (II), each of which represents

15   different types of decision-making difficulties based on the taxonomy proposed by Gati et al.

16   (1996). Overall, the construct has been found to be a reliable and valid instrument for

17   assessing career decision-making difficulties across various cultural contexts, including a

18   number of Anglo-Western contexts such as the USA (Gati & Saka, 2001a; Kelly & Lee,

19   2002), Canada (Morgan & Ness, 2003), Australia (Albion & Fogarty, 2002) and the UK

20   (Zhou & Santos, 2006).

21   **2.   Emotional intelligence (by Wong and Law, 2002)**

22   Emotional Intelligence was measured using the Wong and Law Emotional Intelligence Scale

23   (WLEIS) developed by Wong and Law (2002). This self-report instrument is based on

24   Salovey and Mayer's (1997) definition of EI and consists of 16 items. The WLEIS has four

1 dimensions with four items each: self-emotion appraisal (SEA), others' emotional appraisal

2 (OEA), regulation of emotion (ROE) and, use of emotion (UOE). The WLEIS requires

3 respondents to indicate the degree to which they agree with each statement on a 7-point

4 Likert-scale (1–totally disagree to 7–totally agree). Higher scores on the WLEIS indicate

5 higher EI. The measure includes statements such as ''I have a good sense of why I have

6 certain feelings most of the time" and "I always set goals for myself and then try my best to

7 achieve them". Although the WLEIS was originally developed in China, it's been previously

8 used on a UK sample (Potter, 2015) and it's factorial invariance has been confirmed across

9 samples from regions such as North America, Europe and the Middle East (Libbrecht,

10 Beuckelaer, Lievens, & Rockstuhl, 2014; Wang, Kim, & Ng, 2012)

11 **3. Career decision self-efficacy (by Betz et al., 1996)**

12 Career decision self-efficacy was measured using the Career Decision Self-Efficacy Scale–

13 Short Form (CDSES-SF) developed by Betz et al. (1996). The CDSES-SF is a 25-item

14 measure, assessing an individual's perceived self-efficacy on specific tasks relating to career

15 decision-making. Respondents were asked to rate their confidence in completing certain tasks

16 of the career decision-making process on a 5-point Likert scale (1–no confidence at all to 5–

17 complete confidence). The CDSES-SF has been tested using single factor and multi-factor

18 solutions, however the present research adopted the single factor model because it has been

19 shown by several studies as more adequate (Török, Tóth-Király, Bőthe, & Orosz, 2017).The

20 measure includes statements such as ''Use the internet to find information about occupations

21 that interest you" and "Determine what your ideal job would be". Scores range from 0 to 225,

22 where higher scores represent greater self-efficacy in career decision-making and lower scores

23 represent less self-efficacy in career decision-making. The CDSES-SF has adequate construct

24 validity and internal consistency reliability (Betz et al., 1996).

25 **Data Analysis**

1   Following data screening, a confirmatory factor analysis (CFA with ML estimation) using

2   structural equation modelling (STATA 15) was carried out to test the factorial validity of

3   CDD, CDSE, and EI respectively on the current sample. This procedure was performed to

4   examine the relevance and model stability of the measures used since there have been

5   documented cases of the instruments' dimensional instability in different cultures (Török et

6   al., 2017; Mau, 2001; Sovet et al., 2015). Univariate and multivariate analyses of variance

7   (ANOVA and MANOVA design) were then performed to test for potential socio-

8   demographic group differences in order to detect and control for potential confounding

9   effects of these variables in subsequent analyses (SPSS v.24). Following descriptive and

10   bivariate partial correlation analysis, a series of hierarchical regression analyses were then

11   conducted to examine the relationship between EI, CDSE, and CDD. To test for mediation

12   effects, the bootstrapping mediation approach using SPSS PROCESS macro V3.0 was

13   employed, with 95% confidence intervals (CIs) based on a bootstrap sample of 5,000

14   (Preacher & Kelly, 2011). Unlike the causal mediation approach (Baron & Kenny, 1986),

15   which has been repeatedly criticised for low power and a diminished likelihood of detecting

16   actual mediation effects (Fritz & MacKinnon, 2007, Hayes, 2009), bias-corrected

17   bootstrapping is deemed to be more robust even with non-normal distributions and is able to

18   perform an estimation of indirect effects regardless of the presence of significant total or

19   direct effects (Mackinnon, Lockwood, & Williams, 2004; Williams & MacKinnon, 2008). As

20   evidenced in experimental studies, significant indirect effects can be detected even in the

21   absence of total and direct effects, therefore, confidence intervals that do not cross zero are

22   treated as sufficient evidence for a significant mediation effect (Rucker, Preacher, Tormala, &

23   Petty, 2011). According to Wen & Fan (2015), κ^2 and R_M are not suitable measures of effect

24   size for mediation models due to a lack of monotonicity. Equally, P_M is not considered an

25   appropriate measure of effect size for the present study because of the presence of three

26   inconsistent mediation models in the results (Wen & Fan, 2015). Instead, complete

1   standardized coefficient β which are considered to be directly interpretable are reported in the

2   absence of a suitable measure of effect size (Preacher & Kelley, 2011; Rucker et al., 2011;

3   Wen & Fan, 2015).

4

5   **Results**

6   **Factorial validity and reliability of the measures**

7   Confirmatory factor analyses were conducted on the EI, CDSE and CDD scales in order to

8   verify the factorial structure of these measures and their suitability for the current sample.

9   According to Brown (2014), factor loadings of .50 or lower suggest an inadequate

10   contribution of the item to its latent variable and should be excluded. Both CDSE and EI

11   showed stable factor structures as reported in the literature (Libbrecht et al. 2014; Török et al.,

12   2017) (CDSE, tested as a one-factor, first order model, factor loadings ranging from.47 to.80,

13   Mdn=.63, p<.001; EI, tested as a four-factor, first order model, factor loadings ranging from

14   .56 to .88, Mdn= .83, p<.001). Items 2, 3, 8, 9, 10 and 11 of the readiness category of the

15   CDDQ-SF, however, showed very low standardized factor loadings (ranging from -.15 to .18,

16   Mdn=.23, p<.001) and were thus excluded from the analysis. This result was not unexpected

17   as the instability of the readiness category, and in particular, its dysfunctional beliefs subscale,

18   has been widely reported in the literature (Lancaster, Rudolph, Perkins, & Patten, 1999; Mau,

19   2001; Sovet et al., 2015). Moreover, similar problems relating to the psychometric properties

20   of the readiness category have also been reported in other Anglo-Western cultures (Gati et al

21   1996; Kelly & Lee, 2002; Osipow & Gati, 1998), which thus prompted the decision to

22   exclude these items. The adjusted readiness subscale comprising four items (item 1, 4, 5, and

23   6) was again subjected to CFA and adequate factor loadings achieved (ranging from .47 to

24   .81, Mdn=.73, p<.001). Although item 9 of the CDSE and item 1of the CDDQr both had

25   factor loadings of .47, which is lower than the recommended cut-off of .50, the items were

1   retained because of their relevance to their respective constructs. Goodness of fit analyses for

2   the adjusted total CDD, CDSE and EI scales are reported in Table 1.

3   Table 1

4   *Fit Indices for Adjusted Total CDDQ, EI, and CDSE Models*

Measure	Model	χ^2	*df*	p	χ^2/df	CFI	TLI	RMSEA	SRMR
AdCDDQ[a]	25-item, 3-factor, first-order model	912.39	264	<.001	3.46	.92	.90	.07	.06
AdR	4 items								
LI	11 items								
II	10 items								
EI[b]	16-item, 4-factor, first-order model	270.54	99	<.001	2.73	.96	.95	.06	.07
SEA	4 items								
OEA	4 items								
UOE	4 items								
ROE	4 items								
CDSE[c]	25-item, 1-factor, first-order model	804.33	265	<.001	3.04	.91	.90	.07	.05

5   *Note. N=427. df*=degrees of freedom; TLI=Tuckers-Lewis index; CFI=comparative fit index;

6   RMSEA=root mean square error of approximation; SRMR=Standardised root mean square

7   residual. adCDDQ=adjusted total career decision-making difficulties questionnaire,

8   adR=adjusted lack of readiness; LI=lack of information; II=inconsistent information;

9   CDSE=career decision self-efficacy; EI=emotional intelligence; SEA= self-emotional

10   appraisal; OEA= other emotion appraisal; UOE=use of emotion; ROE= regulation of

11   emotion;

12   [a]Adjusted total CDDQ model tested based on a 25-item scale originally developed by Gati et

13   al. (1996) excluding item 2, item 3 item 8, item 9, item 10, and item 11 and validity items of 7

14   and 12. [b]CDSE model tested based on a 25-item scale developed by Betz, Klein, and Taylor

15   (1996). [c]EI model tested based on a 16-items scale developed by Wong and Law (2002).

16   Several goodness of fit indices, including the χ^2 statistic, degrees of freedom and

17   significance level, the Normed χ^2, Tucker-Lewis index (TLI), the comparative fit index (CFI),

18   the root mean square error of approximation (RMSEA) and the standardized root mean square

19   residual (SRMR), were used to determine model fit (Hu & Bentler, 1998; Kline, 1998; Sun,

20   2005). Although χ^2 values should not normally be significant (Hu & Bentler, 1999), as χ^2 is

1   sensitive to large samples (n>350), a normed $\chi 2$ of lower than 5:1 is adopted as the cut-off

2   (Hair, Black, Babin, Anderson, & Tatham, 2006). Similarly, CFI and TLF values greater than

3   .90, RMSEA and SRMR values less than .08 are regarded as acceptable (Awang, 2013; Hu &

4   Bentler, 1998; Brown, 2014; Hair et al, 2006). As illustrated in Table 1, all three measures,

5   the adjusted total CDDQ, CDSE and EI, scales showed acceptable model fit. The resulting

6   factors were thus used in subsequent analyses. In the present sample, Cronbach's α reliability

7   estimates for the adjusted total CDDQ score was .93, with .69 for adR (adjusted readiness

8   subscale), .95 LI, and .88 for II. For the total CDSE, α score is .94. Cronbach's α for the total

9   EI score was .88 with .86 for SEA, .86 for OEA, .81 for UOE and .89 for ROE.). All scales

10 demonstrated adequate levels of reliability (Nunnally & Bernstein, 1994).

11 **Testing for group differences in socio-demographics**

12 Although previous studies on career-decision making tend to use more homogenous samples,

13 or at the very students from the same education strata, the authors decided not to exclude

14 particular individuals on the basis of their age, education strata, mode of study and nationality

15 so as to more accurately reflect the diverse nature of the student population where the study

16 was conducted. Instead, the authors have chosen to test for group differences in socio-

17 demographics on CDD and its main categories, and CDSE. A series of MANOVA analyses

18 were conducted with gender (male, female), age (emerging adulthood, adulthood), nationality

19 (British, non-British), education strata (undergraduate, postgraduate) and mode of study (part-

20 time, full-time) as grouping factors and CDD and CDSE as outcome variables. Significant

21 differences were found for each. Specifically, mean differences were found for gender

22 (Pillai's Trace=. 05, $F_{(4,467)}$ =5.48, p<. 00, Partial $\eta 2$=. 05), age (Pillai's Trace=. 15, F

23 $(4,467)$ =20.59, p<. 001, Partial $\eta 2$=. 15), nationality (Pillai's Trace=. 04, $F_{(4,467)}$ = 4.79,

24 p<. 01, Partial $\eta 2$=. 04), education strata (Pillai's Trace=. 09, $F_{(4,467)}$ = 11.60, p<. 001,

25 Partial $\eta 2$=. 09) and mode of study (Pillai's Trace=.04, $F_{(4,467)}$ = 4.76, p<.01, Partial $\eta 2$=.

1 04). Further one-way between groups ANOVA were conducted in order to identify where the

2 differences lay. As shown in Table 2, the majority of F values were statistically significant,

3 with effect sizes (Partial η2) ranging from 0.1 to .14. Gender was the only variable with no

4 statistically significant group differences on outcomes with the exception of the adjusted

5 readiness subscale.

6 Table 2

7 *One-Way ANOVA Results for Gender, Age, Nationality, Education Strata and Mode of Study*

8 *with CDD, CDD Main Categories, and CDSE as Dependent Variables*

	adR		LI		II		adCDDQ		CDSE	
Independent variable	F (1,470)	Partial η2	F (1,470)	Partial η2	F (1,470)	Partial η2	F (1,470)	Partial η2	F (1,470)	Partial η2
Gender	8.47**	.02	.50	.00	.71	.00	.05	.00	1.15	.00
Age	43.74***	.09	79.19***	.14	39.23***	.08	73.41***	.14	42.30***	.08
Nationality	7.28**	.02	18.76***	.04	7.79**	.02	15.57***	.03	8.59**	.02
Education strata	16.64***	.03	41.40***	.08	13.65***	.03	32.50***	.07	30.39***	.06
Mode of study	5.51*	.01	16.31***	.03	7.50**	.02	13.71***	.03	15.04***	.03

9

10 *Note. (N=427).* adCDDQ = adjusted total career decision-making difficulties questionnaire,

11 CDD=career decision-making difficulties; adR = adjusted lack of readiness; LI = lack of

12 information; II = inconsistent information; CDSE = career decision self-efficacy;

13 **p<.05; p**<.01; ***p<.001.*

Covariates and control variables

15 In light of the above, subsequent correlation and mediation analyses therefore controlled for

16 age (0 = emerging adulthood, 1= adulthood), nationality (0 = British, 1= non-British),

17 education strata (0=undergraduate, 1=postgraduate), and mode of study (0=part-time, 1 = full-

18 time) as covariates. Gender (0 = male, 1 = female) was added as an additional control variable

19 when the adjusted readiness scale (adR) was used as an outcome. As all EI subscales were

1 intercorrelated (r ranging from .21 to .45, p<.01, shown in Table 3), multicollinearity was

2 deemed to be a potential issue. In order to circumvent the latter and isolate the unique

3 contribution of each EI subscale as a predictor of CDD, the three remaining EI subscales were

4 also treated as covariates.

5 **Descriptive statistics, reliability and intercorrelations**

6 Descriptive statistics, reliability coefficients and bivariate correlations after partialling out the

7 effects of age, gender, nationality, education strata and mode of study, for all study variables

8 are reported in Table 3. An examination of the results showed that, as hypothesized, total EI

9 and its subscales, SEA, OEA, UOE and ROE were all significantly and negatively correlated

10 with total CDD and its subscales with r ranging from -.39 to -.10. Likewise, total EI and its

11 subscales were all, significantly and positively correlated with CDSE with r ranging from .29

12 to .54. CDSE also showed a significant negative relationship with total CDD (r =-.67).

13 Table 3

14 *Descriptive Statistics, Reliability's and Bivariate Correlations among Study Variables after*

15 *Partialing out the Effects of Age, Gender, Nationality, Education Strata and Mode of Study.*

Measure	1	2	3	4	5	6	7	8	9	10	*M*	*SD*
1. adCDDQ	**.95**										3.86	1.62
2. adR	.72***	**.69**									5.00	1.79
3. LI	.94***	.59***	**.95**								3.90	1.96
4. II	.89***	.55***	.73***	**.88**							3.37	1.62
5. CDSE	-.67***	-.59***	-.67***	-.51***	**.94**						3.55	.64
6. EI	-.39***	-.38***	-.32***	-.36***	.54***	**.88**					5.25	.81
7. SEA	-.37***	-.35***	-.31***	-.34***	.43***	.75**	**.86**				5.27	1.14
8. OEA	-.14**	-.11**	-.10*	-.17***	.29***	.58***	.28***	**.86**			5.43	.99
9. UOE	-.33***	-.35**	-.31***	-.25***	.49***	.69***	.39***	.20***	**.81**		5.37	1.09
10. ROE	-.24***	-.26***	-.18***	-.25***	.33***	.78***	.45***	26***	.37***	**.89**	4.91	1.33

16

1   *Note. (N=427).* Reliability coefficients are shown in bold on the diagonal. adCDDQ =

2   adjusted total career decision-making difficulties questionnaire, adR = adjusted lack of

3   readiness; LI = lack of information; II = inconsistent information; CDSE = career decision

4   self-efficacy; EI = emotional intelligence; SEA = self-emotional appraisal; OEA = other

5   emotion appraisal; UOE = use of emotion; ROE = regulation of emotion.

6   *p<.05; p**<.01; ***p<.001.*

7   **Direct and Indirect Effects of EI, CDSE and CDD**

8   A series of hierarchical regression analyses were conducted to test for the effects of emotional

9   intelligence on career decision-making difficulties, and the impact of each of the EI subscales

10 on the main categories of CDD. As shown in Table 4, after controlling the effects of relevant

11 demographic variables, EI significantly but negatively predicted total CDD (β =-.36, p <

12 .001), confirming Hypothesis 1. The EI subscales of SEA (β =-.25, p < .001) and UOE (β =-

13 .20, p < .001) exhibited a significant and negative impact on CDD. No significant

14 relationships were found between OEA and CDD, or ROE and CDD. Hypothesis 1a and 1b

15 were thus supported. As posited in Hypothesis 2, CDSE significantly and negatively predicted

16 total CDD after controlling for the effect of total EI (β =-.64, p < .001), and individual

17 subscales of EI (β =-.63, p < .001), as shown in Table 4. CDSE also significantly predicted

18 the CDD subscales of adR (β =-.53, p < .001, table 5), LI (β =-.66, p < .001, table 6) and II (β

19 =-.45, p < .05, table 7). Hypotheses H2a, H2b and H2c were thus supported. Total EI

20 significantly predicted CDSE (β = .53, p < .001), confirming Hypothesis H3. As predicted in

21 H3a and H3b, the effects were strongest for UOE (β = .33, p < .001) and SEA (β = .23, p <

22 .001). OEA (β = .11, p < .01) was also found to be a significant but weak predictor of CDSE.

23 ROE on the other hand, failed to predict CDSE.

24 Table 4

1 *Direct and Indirect Effects of EI, EI Subscales, and CDSE on Total CDD.*

Independent variables (IV)	Effect of IV on M (a)	Effect of M on DV (b)	Total effect (c)	Direct effects (c')	Indirect effect (bias corrected intervals) (a)(b): 95% CI
EI	B=.42*** β=.53*** R^2=.36*** ΔR^2=.27***	B=-1.62*** β=-.64*** R^2=.53*** ΔR^2=.26***	B=-.73*** β=-.36*** R^2=.27*** ΔR^2=.13***	B=-.05	B=-.68 [-.81, -.55] β=-.33 [-.40, -.28]
SEA	B=.13*** β=.23*** R^2=.39*** ΔR^2=.04***		B=-.35*** β=-.25*** R^2=.30*** ΔR^2=.04***	B=-.15*	B=-.20 [-.29, -.13] β=-.14 [-.20, -.10]
OEA	B=.07** β=.11** R^2=.39** ΔR^2=.01**	B=-1.61*** β=-.63*** R^2=.54*** ΔR^2=.24***	B=-.03 β=-.02 R^2=.30 ΔR^2=.00	B=.09	B=-.11 [-.19, -.04] β=-.07 [-.12, -.02]
UOE	B=.19*** β=.33*** R^2=.39*** ΔR^2=.08***		B=-.29*** β=-.20*** R^2=.30*** ΔR^2=.03***	B=.02	B=-.31 [-.40, -.22] β=-.21 [-.27, -.15]
ROE	B=.04 β=.08 R^2=.39 ΔR^2=.005		B=-.05 β=-.04 R^2=.30 ΔR^2=.001	B=.01	B=-.06 [-.12, .00] β=-.05 [-.10, .00]

2

3 *Note. N=427.* CI=confidence interval; M=mediator; DV=dependent variable.

4 CDD= career decision-making difficulties; CDSE= career decision self-efficacy;

5 EI= emotional Intelligence; SEA= self-emotional appraisal; OEA= other emotion

6 appraisal; UOE=use of emotion; ROE= regulation of emotion. Control variables

7 included age, nationality, education strata, and mode of study.

8 *p<.05; p**<.01; ***p<.001.

9   According to Preacher and Hayes (2008), three criteria must be bet for mediation: (1)

10 a significant correlation between independent variable and mediator; (2) a significant

11 correlation between the mediator and the dependent variable after controlling the effect of

12 independent variable on mediator; (3) a significant indirect effect of the independent variable

13 on the dependent variable. As all study variables were found to be significantly correlated

1   with each other, the first two criteria for mediation analysis were thus satisfied. The remaining

2   section reports the findings of the indirect effects of all mediation models.

3   Results of the bootstrapping mediation analyses (using SPSS PROCESS) testing the

4   indirect effect of total EI and its subscales on total CDD and its main categories through

5   CDSE are displayed in Table 4, Table 5, Table 6 and Table 7. Overall, the results indicated a

6   significant indirect effect of total EI on total CDD through CDSE (β =-.33; 95% CI [-.40, -

7   .28]). Hypothesis 4 was thus supported.

8   Table 5

9   *Direct and Indirect Effects of EI Subscales and CDSE on Adjusted Lack of Readiness.*

Independent variables (IV)	Effect of IV on M (a)	Effect of M on DV (b)	Total effect (c)	Direct effects (c')	Indirect effect (bias corrected intervals) (a)(b): 95% CI
SEA	B=.13*** β=.23*** R^2=.39*** ΔR^2=.04***		B=-.35*** β=-.22*** R^2=.27*** ΔR^2=.03***	B=-.16*	B=-.18 [-.27, -.12] β=-.12 [-.17, -.07]
OEA	B=.07** β=.11** R^2=.39** ΔR^2=.01**	B=-1.48*** β=-.53*** R^2=.43*** ΔR^2=.17***	B=.03 β=.02 R^2=.27 ΔR^2=.00	B=.15*	B=-.12 [-.20, -.05] β=-.07 [-.11, -.03]
UOE	B=.19*** β=.33*** R^2=.39*** ΔR^2=.08***		B=-.37*** β=-.23*** R^2=.27*** ΔR^2=.04***	B=-.08	B=-.29 [-.38, -.21] β=-.18 [-.23, -.13]
ROE	B=.04 β=.08 R^2=.39 ΔR^2=.005		B=-.09 β=-.07 R^2=.27 ΔR^2=.03	B=-.05	B=-.04 [-.10, .02] β=-.03 [-.08, .01]

10

11   *Note. N=427.* CI=confidence interval; M=mediator; DV=dependent variable. CDSE=

12   career decision self-efficacy; SEA= self-emotional appraisal; OEA= other emotion

13   appraisal; UOE=use of emotion; ROE= regulation of emotion. Control variables

14   included gender, age, nationality, education strata, and mode of study.

1   *p<.05; p**<.01; ***p<.001.

2

3   In examining the indirect effects of the subscales of EI on total CDD and its main

4   categories through CDSE, the results showed a significant indirect effect for SEA on total

5   CDD (β=-.14; 95% CI [-.20, -.10]) and its categories of lack of readiness (adR) (β =-.12; 95%

6   CI [-.17, -.07]), lack of information (LI) (β =-.15; 95% CI [-.21, -.10]) and inconsistent

7   information (II) (β =-.10; 95% CI [-.15, -.06]). Hypothesis H4a was thus supported. Equally,

8   using CDSE as the mediator, the results showed a significant indirect effect for UOE on total

9   CDD (β =-.21; 95% CI [-.27, -.15]) and its categories of adR (β =-.18; 95% CI [-.23, -.13]), LI

10   (β =-.22; 95% CI [-.28, -.16]), and II (β =-.15; 95% CI [-.20, -.10]). Hypothesis H4b was thus

11   supported. Unexpectedly however, there was a significant indirect effect for OEA on total

12   CDD through CDSE (β =-.07; 95% CI [-.12, -.02]). Significant indirect effects of CDSE were

13   also found for OEA on the CDD categories of adR (β =-.07; 95% CI [-.11, -.03]) LI (β =-.07;

14   95% CI [-.12, -.03]) and II (β =-.05; 95% CI [-.09, -.02]). MacKinnon, Krull and Lockwood

15   (2000) proposed that two factors indicate the presence of a suppression effect: (1) the total

16   effect is closer to zero than the direct effect, (2) and the direct effect and indirect effect are of

17   opposing signs. Based on these indications, the results suggest the presence of inconsistent

18   mediation relationships in which CDSE acts as a suppressor between OEA and total CDD and

19   its categories of adR and LI. CDSE had no significant mediating effects on the relationship

20   between ROE on total CDD or its categories.

21   Table 6

22   *Direct and Indirect Effects of EI Subscales and CDSE on Lack of Information.*

23

Independent variables (IV)	Effect of IV on M (a)	Effect of M on DV (b)	Total effect (c)	Direct effects (c')	Indirect effect (bias corrected intervals) (a)(b): 95% CI
SEA	$B=.13^{***}$ $\beta=.23^{***}$ $R^2=.39^{***}$ $\Delta R^2=.04^{***}$		$B=-.36^{***}$ $\beta=-.21^{***}$ $R^2=.27^{***}$ $\Delta R^2=.03^{***}$	$B=-.10$	$B=-.26$ $[-.36, -.17]$ $\beta=-.15$ $[-.21, -.10]$
OEA	$B=.07^{**}$ $\beta=.11^{**}$ $R^2=.39^{**}$ $\Delta R^2=.01^{**}$	$B=-2.04^{***}$ $\beta=-.66^{***}$ $R^2=.54^{***}$ $\Delta R^2=.27^{***}$	$B=-.002$ $\beta=-.001$ $R^2=.27$ $\Delta R^2=.00$	$B=.14^*$	$B=-.15$ $[-.24, -.05]$ $\beta=-.07$ $[-.12, -.03]$
UOE	$B=.19^{***}$ $\beta=.33^{***}$ $R^2=.39^{***}$ $\Delta R^2=.08^{***}$		$B=-.37^{***}$ $\beta=-.20^{***}$ $R^2=.27^{***}$ $\Delta R^2=.03^{***}$	$B=.02$	$B=-.39$ $[-.51, -.28]$ $\beta=-.22$ $[-.28, -.16]$
ROE	$B=.04$ $\beta=.08$ $R^2=.39$ $\Delta R^2=.005$		$B=.003$ $\beta=.002$ $R^2=.27$ $\Delta R^2=.00$	$B=.08$	$B=-.08$ $[-.16, .01]$ $\beta=-.05$ $[-.11, .00]$

1

2 *Note. N=427.* CI=confidence interval; M=mediator; DV=dependent variable.

3 CDSE= career decision self-efficacy; SEA= self-emotional appraisal; OEA= other

4 emotion appraisal; UOE=use of emotion; ROE= regulation of emotion. Control

5 variables included age, nationality, education strata, and mode of study.

6 $^*p<.05$; $p^{**}<.01$; $^{***}p<.001$.

7

8   In summary, it can be stated that the results show a pattern in which all subscales of

9 EI, apart from ROE, have significant indirect effects on total CDD and its three categories of

10 adR, LI, and II through CDSE. Comparing the standardized beta values, it can be seen that the

11 mediating effect of CDSE appears to be strongest for the relationship between total EI and

12 CDD. Among the different EI subscales, the mediating effect of CDSE was strongest for the

13 relationships between UOE and CDD and its categories, and less so for the relationships

14 between SEA and CDD and its categories. CDSE also elicited suppression effects on the

15 relationship between OEA and CDD, adR, and LI.

1   Table 7

2   *Direct and Indirect Effects of EI Subscales and CDSE on Inconsistent Information*

Independent variables (IV)	Effect of IV on M (a)	Effect of M on DV (b)	Total effect (c)	Direct effects (c')	Indirect effect (bias corrected intervals) (a)(b): 95% CI
SEA	B=.13*** β=.23*** R^2=.39*** ΔR^2=.04***		B=-.34*** β=-.24*** R^2=.21*** ΔR^2=.04***	B=-.19**	B=-.15 [-.22, -.09] β=-.10 [-.15, -.06]
OEA	B=.07** β=.11** R^2=.39** ΔR^2=.01**	B=-1.14*** β=-.45*** R^2=.34*** ΔR^2=.12***	B=-.10 β=-.06 R^2=.21 ΔR^2=.003	B=-.02	B=-.08 [-.14, -.03] β=-.05 [-.09, -.02]
UOE	B=.19*** β=.33*** R^2=.39*** ΔR^2=.08***		B=-.17* β=-.12* R²=.21* ΔR^2=.01*	B=.04	B=-.22 [-.29, -.15] β=-.15 [-.20, -.10]
ROE	B=.04 β=.08 R^2=.39 ΔR^2=.005		B=-.09 β=-.08 R^2=.21 ΔR^2=.004	B=-.05	B=-.04 [-.09, .00] β=-.04 [-.07, .00]

3

4   *Note. N=427.* CI=confidence interval; M=mediator; DV=dependent variable.

5   CDSE= career decision making self-efficacy; SEA= self-emotional appraisal;

6   OEA= other emotion appraisal; UOE=use of emotion; ROE= regulation of

7   emotion. Control variables included age, nationality, education strata, and

8   mode of study.

9   *p<.05; p**<.01; ***p<.001.

10

11   **Discussion**

12   The purpose of the present study was threefold. First, it sought to determine the impact of

13   ability-based emotional intelligence and its components on career decision-making difficulties

14   and career decision self-efficacy. Second, in line with social cognitive career theory, the

1 present study sought to investigate the potential role of career decision self-efficacy in

2 mediating the relationship between emotional intelligence and its components on career

3 decision-making difficulties and its main categories. Finally, it sought to examine the validity

4 and relevance of existing measures of ability-based emotional intelligence, career decision

5 self-efficacy and career decision-making difficulties among university students in the United

6 Kingdom.

7 The results of the present study demonstrate the importance of ability-based emotional

8 intelligence in the process of career exploration and decision-making (Emmerling & Cherniss,

9 2003), resulting in a reduction of career decision-making difficulties. Hypothesis 1, which

10 predicted that there would be an inverse relationship between emotional intelligence and

11 career decision-making difficulties was confirmed in the study. Specifically, SEA and UOE

12 were negatively related to total CDD and all its main categories, with SEA eliciting the

13 stronger effect of the two, supporting Hypotheses 1a and 1b. These findings suggest that

14 individuals with high emotional intelligence generally have a better appreciation of their

15 emotions and an increased aptitude for making decisions about their future careers. SEA,

16 which relates to one's capacity for emotional self-awareness and expression, and UOE, which

17 relates to one's capacity to manage their emotions to carry out constructive activities and

18 personal performance, are crucial to overcoming difficulties before and during the decision-

19 making process. Interestingly however, the findings contradict earlier research Di Fabio and

20 Saklofske (2014) who failed to find any significant relationship between ability-based EI as

21 measured by the MSCEIT, suggesting that perhaps the Wong and Law measure of EI

22 incorporates an element which is somewhat distinct from the MSCEIT, but nonetheless

23 central to the career decision-making process. One might argue that the unique feature is the

24 emotion regulation aspect of the measure, but further research would be needed to make such

25 conclusions. Another possible reason for these contradictory findings is that Di Fabio and

1   Saklofske's study utilized 3 measures of EI, trait EI, Bar-On EI and the MSCEIT. Because

2   Bar-On EI is based on a mixed model which is part trait and part ability, some of its

3   constructs may have overlapped with those of the MSCEIT and elicited suppressor effects.

4   On the other hand, ROE failed to predict any of the categories of difficulties suggesting that

5   one's ability to control or suppress one's emotions has no bearing on the decision-making

6   process.

7   Results also revealed that career decision self-efficacy has a strong inverse

8   relationship with overall career decision-making difficulties and its three main categories

9   (Hypothesis H2, H2a, H2b and H2c). Higher levels of career decision self-efficacy led to

10   lower levels of difficulties, suggesting that university students who believe in their ability to

11   successfully accomplish certain tasks involved in making career choices are less likely to face

12   difficulties in performing these tasks, such as gathering relevant information (Osipow & Gati,

13   1998; Creed, Patton & Bartrum, 2004; Amir & Gati, 2006; Nota, Ferrari, Solberg & Soresi,

14   2007). These findings are consistent with prior research conducted in Israel which showed

15   that career decision self-efficacy is a significant contributor to career decision-making (Amir

16   & Gati, 2006).

17   Hypothesis 3, which predicted that ability-based EI is positively related to career

18   decision self-efficacy, was also confirmed in the study. University students who exhibited a

19   superior ability in evaluating their own emotions and the emotions of those around them, and

20   were able to make effective use of their emotions in career-related activities, were more likely

21   to exhibit greater confidence in their ability to make good career-related choices. Specifically,

22   SEA was found to be a weak predictor of CDSE whilst UOE was a moderate predictor of

23   career decision self-efficacy. According to social cognitive theory (Bandura, 1998), self-

24   efficacy can be influenced by somatic and emotional states which requires an appraisal of

25   one's own emotions. Similarly, social persuasion, which is another important aspect of self-

1 efficacy implies a sense of agency promoted by the use of emotions. These findings are

2 consistent with recent research conducted in South Korea (Jiang, 2014) and China (Jiang,

3 2016) that showed a positive relationship between emotional intelligence and career decision

4 self-efficacy with UOE as the strongest predictor. OEA was also found to be a significant but

5 weak predictor of CDSE. The latter might be explained by the role of others' emotional states

6 in social persuasion. ROE, on the other hand, failed to predict CDSE. Hypothesis H3a and

7 H3b were nevertheless supported. Overall, these findings underscore the importance of

8 increasing students' emotional intelligence abilities on their career decision-making

9 confidence.

10   Finally, the results of mediation analysis showed that the relationship between

11 emotional intelligence and career decision-making difficulties is mediated by career decision

12 self-efficacy, confirming Hypothesis 4. Full mediation was observed between SEA and lack

13 of information (Hypothesis 4a) as well as partial mediations between SEA and total CDD,

14 SEA and lack of readiness and inconsistent information. This means that self-awareness of

15 one's emotions only reduces career decision-making difficulties though one's self confidence.

16 Full mediation was observed for Hypothesis 4b which predicted that CDSE would mediate

17 the relationship between UOE and CDD and its main categories.   The presence of a full

18 mediation implies that one's use of emotions such as engaging in activities that promote one's

19 career aspirations, has no impact on the reduction of decision-making difficulties unless one is

20 confident. Unexpectedly, CDSE was found to exhibit suppression effects on the relationship

21 between OEA and total CDD, adR and LI. These findings indicate that one's ability to

22 appreciate the emotions of the others will not lead to a reduction of the difficulties

23 experienced in career decision making unless one is confident in his/her ability to carry out

24 career-related tasks and activities. In sum, without CDSE, OEA will not help reduce career

25 decision-making difficulties, but instead, may serve to aggravate these difficulties. This is

1   especially the case for lack of readiness in making a career decision (adR) and the sense of

2   having inadequate information to make a career decision (LI). The results from the mediation

3   analyses, therefore, lend strong support to the notion that career decision self-efficacy

4   explains the process that underlies the relationship between emotional intelligence and career

5   decision-making difficulties.

6   Confirmatory factor analyses of the measures used in the study provide support that

7   the concepts measured are relevant for the sample in question. Model fit was achieved for

8   total EI and its subscales based on the items comprising the original measure. Similarly, for

9   CDSE, all of the original items were retained. For the CDDQ however, six items needed to

10 be dropped from the readiness subscale in order to achieve satisfactory model fit, suggesting

11 that perhaps, the concept of readiness is interpreted differently by the sample in question.

12 Upon closer examination, readiness comprises lack of motivation (items 1-3), general

13 indecisiveness (items 4-6) and dysfunctional beliefs (items 8-11). The items which were

14 retained (item 1 from the lack of motivation category and all three items from indecisiveness)

15 suggest that, for the sample in question, lack of readiness does not comprise dysfunctional

16 beliefs, but instead, stems from a general lack of motivation and general indecisiveness. This

17 may be because students in the UK have more exposure to career-relevant information

18 regarding changes in the job market and are more aware of the transitory nature of careers.

19 Nevertheless, validation of the measures confirms their suitability for use in a UK population

20 and the generalisability of the findings to a broader international context, albeit more studies

21 are recommended.

22 **Practical Implications**

23 The findings of the present study may be particularly useful for professionals working with

24 students in a variety of settings, such as academic guidance and career counseling. Awareness

25 of emotional intelligence and career decision self-efficacy as key factors affecting students'

1   career decision-making may help career counselors better address students' needs and

2   concerns in career decision-making and provide more suitable career guidance that may lead

3   students to a more desirable career choice. The identification of CDSE as a mediating variable

4   underscores the importance of CDSE as a vehicle for translating emotional intelligence

5   abilities in tackling the difficulties one may experience in career-decision making.

6   As emotional intelligence and self-efficacy are abilities that can be taught and

7   developed, the findings of the present study provide much scope for application. Through

8   adequate assessments, career counselors may be able to identify deficiencies in students'

9   levels of emotional intelligence and career decision self-efficacy and improve them by

10   designing interventions which focus on both the knowledge and skills required to develop

11   their emotional abilities as well as their confidence to act on these abilities with respect to

12   career decision-making. As emotional intelligence and career decision self-efficacy are both

13   essential to the career decision-making process, interventions would need to incorporate

14   elements that address both of these concepts. It may be the case for example, that some

15   students require help in developing their knowledge and skills with respect to appraising and

16   using their emotions, whereas others who already possess adequate levels of emotional

17   intelligence, may need to build their self-efficacy beliefs in order to make use of those

18   emotional abilities. Interventions to develop emotional intelligence abilities that are central to

19   career decision-making should focus on self-reflection and expression of one's emotions, and

20   the effective use of emotions to motivate goal achievement and the formulation of future

21   career goals and plans. In order to improve career decision self-efficacy, an intervention

22   would have to focus on the foundations for self-appraisal, goal selection, career planning,

23   problem-solving and identification of occupational information. Together, these efforts will

24   enable students to make better career decisions. Career counselors could utilize the measures

25   used in this study not only to assess students' levels of emotional intelligence, self-efficacy

1 and career decision-making difficulties but use them to track students' improvement or

2 evaluate the effectiveness of certain interventions.

3   The findings provide empirical support for the model proposed in figure 1, adapted

4 from Lent et al.'s (2002) social cognitive career theory. The four components of emotional

5 intelligence serve as sources of self-efficacy in career decision-making, which affect career

6 intentions, activity selection and performance outcomes.

7 **Limitations**

8 Despite the contributions of this study, some limitations must be mentioned. Although this

9 research provides a rationale for the design and implementation of interventions aimed at

10 reducing career decision-making difficulties through emotional intelligence and career

11 decision self-efficacy, it does not provide practical guidance for universities' career

12 counseling services on how to develop such interventions. This research is limited to a

13 theoretical contribution to the career decision-making literature rather than practical

14 approaches for intervention activities. The sample used in this study comprises a diversified

15 group of students from a single UK university and therefore results may not be generalizable

16 to other populations. Nevertheless, in spite of great variations in age, country of origin,

17 education strata and mode of study of the participants, these variations are reflective of the

18 wider student population at large, international universities in the UK, which support the

19 contention that the findings have wide applicability, at the very least, to the UK educational

20 context. The present study utilized a range of self-report measures. Although this is common

21 practice, participants may have responded to questions in a way they thought socially

22 desirable, nevertheless, the relatively large sample size ensures the veracity of the effects and

23 reduces the risk of bias. The study is cross-sectional in nature and therefore causality cannot

24 be inferred. Future studies should be conducted using longitudinal designs in order to

1   determine the long-term effects of emotional intelligence abilities and career decision self-

2   efficacy on decision-making difficulties and other career related outcomes.

3

4   **Suggestions for Future Research**

5   Theoretically, the study variables of the mediation model are unlikely to exist in isolation

6   from the influence of other variables. Consequently, future research should test how closely

7   related variables may be integrated into the present mediation model as potential mediators or

8   moderators of the career decision-making process in order to create a more comprehensive

9   model. This would serve to increase our insight into the complex nature of the career

10   decision-making process. Moreover, future research should attempt to validate the present

11   findings using samples from other populations or cultures or even other universities in the

12   United Kingdom.

13   In practice, there is a lack of interventions to enhance students' emotional intelligence

14   or career decision self-efficacy that have a solid theoretical underpinning (Santos & Lam,

15   2017). Consequently, career counselors may find themselves with the knowledge of important

16   factors in career decision-making but without guidelines for practical approaches. Therefore,

17   future research should incorporate a primary prevention framework through the systematic

18   design, implementation, and evaluation of career interventions which can be integrated into

19   university curricula and careers services provision. Such interventions should be longitudinal

20   in order to determine their long-term effects on variables such as emotional intelligence,

21   career decision self-efficacy, career decision-making difficulties and the like. In conclusion,

22   the present study makes an important contribution to our knowledge of the career decision-

23   making process and how it might be improved.

24

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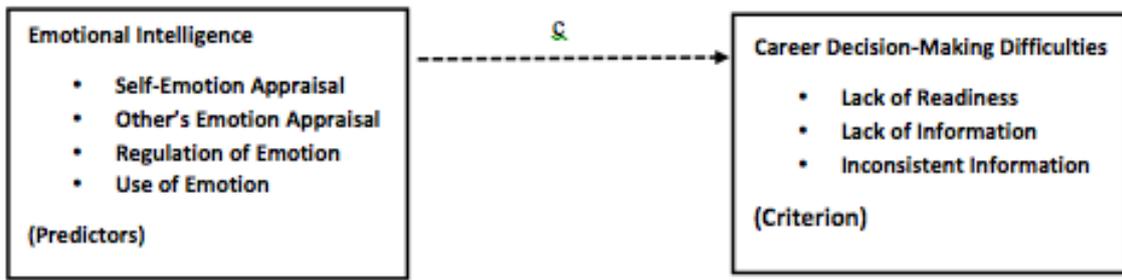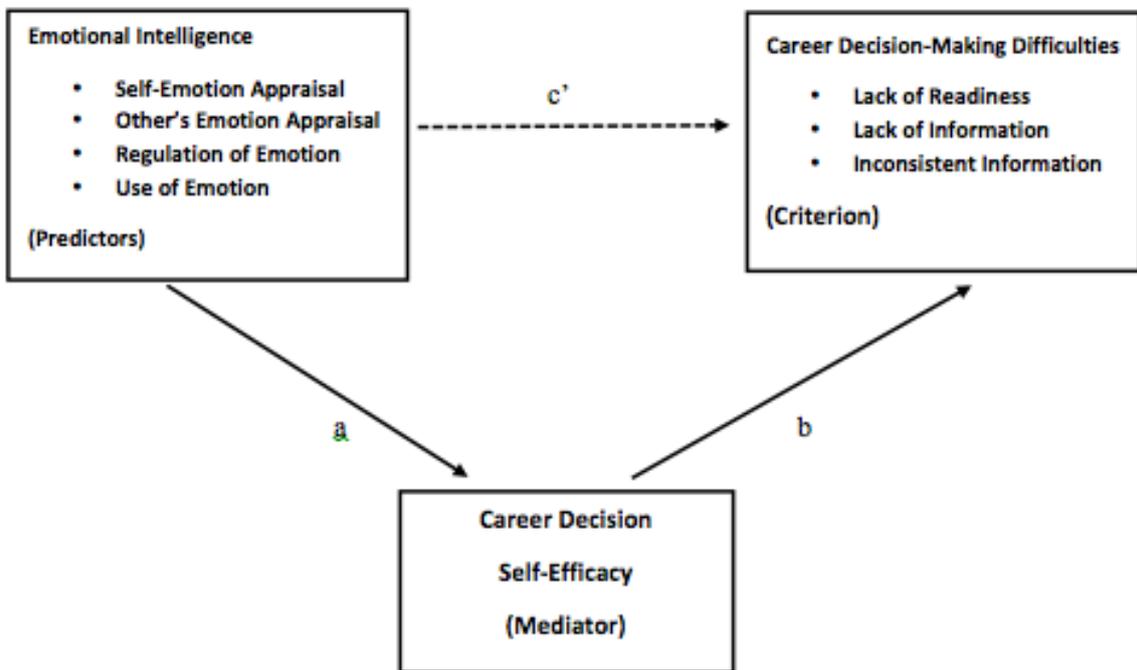
a) Direct Pathway

b) Indirect Pathway

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2

3 *Figure 1.* Proposed model for the relationship between EI and EI subscales and CDD and
4   CDD main categories mediated by CDSE (on the basis of Preacher and Hayes, 2008).

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