Questioning, extending, and integrating what we know about emotional intelligence in career development

Questioning, extending, and integrating what we know about emotional intelligence in career development

Thomas Pirsoul

Promoteur

Frédéric Nils (UCLouvain)

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Comité d'accompagnement et jury

Benoit GALAND (UCLouvain, Président du jury)
Frédéric NILS (UCLouvain, Secrétaire du jury)
Marina FIORI (Haute Ecole Fédérale en Formation Professionnelle, Suisse)
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Laurent SOVET (Université Paris Cité, France)

Sometimes you just have to die a little inside in order to be reborn and rise again as a stronger and wiser version of you

Anonymous author

Table of contents

Table of contents **7**

Résumé **11**

Abstract **13**

Remerciements **15**

Part I General introduction **19**

Chapter 1 Emotional intelligence **25**

1. Introduction *25*
2. Approaches to emotional intelligence *26*
3. The beneficial effects of emotional intelligence *41*
4. Concluding remarks *48*

Chapter 2 How do we know what we know? **53**

1. Introduction *53*
2. Limitations of emotional intelligence investigation in career development *54*
3. Concluding remarks *65*

Chapter 3 Objectives of the present dissertation **69**

1. Study 1: Examining the cross-lagged effect of emotional intelligence on career adaptability *71*
2. Study 2: Unravelling the structure of emotional intelligence in career development using a bifactor-ESEM framework *72*
3. Study 3: Exploring the emergence of emotional intelligence profiles in the context of the school-to-work transition *73*
4. Study 4: Examining the effects of an emotional intelligence training in the context of the school-to-work transition *75*
5. Study 5: A systematic review and meta-analysis with regard to the beneficial role of emotional intelligence in career development *76*

Part II Empirical chapters of the present thesis **79**

Chapter 4 Examining the impact of emotional intelligence on career adaptability **83**

1. Introduction *83*
2. Methods *85*
3. Results *86*
4. Discussion *89*

Chapter 5 One step beyond emotional intelligence measurement in the career development of adult learners **95**

1. Introduction *95*
2. Method *103*
3. Results *105*

4. Discussion *110*

Chapter 6 Emotional intelligence profiles and job search-related outcomes in the context of the school-to-work transition **119**

1. Introduction *119*
2. Methods *124*
3. Results *125*
4. Discussion *131*

Chapter 7 Fostering emotional intelligence in the context of the school-to-work transition **137**

1. Introduction *137*
2. Method *142*
3. Results *144*
4. Discussion *147*
5. Limitations and future directions *149*
6. Practical implications *150*

Chapter 8 Emotional intelligence in career development **153**

1. Introduction *153*
2. Method *163*
3. Results *167*
4. Discussion *171*
5. Conclusion *177*

Part III General discussion and conclusion **179**

Chapter 9 Main findings **185**

1. Emotional intelligence as a (causal) predictor of career-related outcomes *185*
2. Structural evidence of emotional intelligence as unidimensional and multidimensional in relation to career outcomes *186*
3. The emergence of emotional intelligence profiles *187*
4. An integrative perspective of emotional intelligence with regard to career-related outcomes *189*
5. Concluding remarks *189*

Chapter 10 Theoretical contributions **193**

1. Emotional intelligence as a set of interacting variables that need to be re(de)fined *193*
2. An empirical contribution to the career construction model of adaptation *195*
3. The contribution of emotional intelligence among meaningful samples and career contexts *197*
4. Does emotional intelligence is a malleable construct? *198*

Chapter 11 Limitations and future research directions **201**

1. The heterogeneity of research designs *201*
2. The lack of ability-emotional intelligence measures *203*
3. The lack of long-term effects and enactment investigation of emotional intelligence *203*
4. Our restricted investigation of career transitions *205*

5. The lack of control variables *205*
6. Our difficulty to understand some results *206*
7. Better unraveling the differential effects of the interpersonal from the intrapersonal emotional intelligence dimensions *206*
8. The absence of qualitative studies *208*
9. Better understanding the environmental factors in individuals' career development *208*
10. On the other side of career transition experience: what do we know about the role of emotional intelligence among guidance counselors? *209*

Chapter 12 Pratical implications **215**

1. Informing guidance counselors about the beneficial effects of emotional intelligence *215*
2. Developing a preventive approach of career transitions: a sustainable perspective of emotional intelligence *216*
3. Developing and adapting more structured intervention in emotional intelligence to specific career transitions *218*
4. Developing emotional intelligence to foster beneficiaries' vocational interests clarity *219*
5. Concluding remarks *219*

General conclusion **223**

References **227**

List of tables **255**

Figure captions **257**

Appendix A Career adaptability profiles and their relations with emotional and decision-making correlates among Belgian undergraduate students **263**

1. Introduction *263*
2. Method *268*
3. Results *271*
4. Discussion *275*
5. References *279*

Appendix B Supplementary materials for Chapter 4 **283**

Appendix C Supplementary materials for Chapter 5 **285**

Appendix C11. Hypotheses for the general factor of emotional intelligence and each dimension *296*

Appendix D Supplementary materials for Chapter 6 **297**

Appendix E Supplementary materials for Chapter 8 **299**

1. Appendix E2. Search equation 1 *304*
2. Appendix E3. The 49 eligible career-related outcomes that emerged from the Search equation 1 *305*
3. Appendix E4. Search equation 2 *305*
4. Appendix E5. Meta-analytic regression models *306*
5. Appendix E6. Additional sensitivity analyses using cumulative meta-analysis *308*

6. Appendix E7. References of the citations included in the meta-analysis *309*

Résumé

Le développement de carrière représente un processus d'adaptation continu à l'égard des objectifs professionnels et de vie des individus. En effet, tout au long de leur carrière, les individus doivent faire face à de nombreux défis, tels que la réalisation de décisions importantes, la réévaluation de leurs aspirations professionnelles, ainsi que la gestion de leurs transitions vocationnelles et professionnelles, pouvant donner lieu à des expériences émotionnelles complexes. Dans ce contexte, un nombre important de chercheurs ont souligné l'importance de développer des ressources personnelles afin d'appréhender ces défis. Par conséquent, le concept d'intelligence émotionnelle—défini comme la capacité à identifier, comprendre, exprimer, réguler et utiliser ses émotions et celles des autres—a attiré l'intérêt des chercheurs et est maintenant considéré comme une telle ressource dans la littérature liée à la carrière. En dépit de l'attention croissante accordée à ce concept, un nombre restreint d'études se sont attelées à questionner la crédibilité des résultats de recherche dans la littérature liée à la carrière. La présente thèse vise donc à répondre à trois objectifs : questionner, étendre, et intégrer ce que nous savons de l'intelligence émotionnelle dans le développement de carrière. À cette fin, nous proposons premièrement une revue originale des principales limites de l'étude de l'intelligence émotionnelle dans le développement de carrière. Deuxièmement, nous décrivons les résultats de cinq études empiriques. La première étude explore longitudinalement comment l'intelligence émotionnelle prédit l'adaptabilité de carrière à travers une étude en deux temps de mesure à panels croisés. Dans la deuxième étude, nous utilisons un cadre bifactor-ESEM dans le but d'investiguer la validité prédictive des dimensions de l'intelligence émotionnelle tout en considérant le facteur général de l'intelligence émotionnelle en lien avec des variables de carrières importantes chez les adultes en reprise d'études telles que l'épuisement émotionnel, le conflit travail-famille, et la satisfaction de carrière. Dans la troisième étude, nous adoptons une approche centrée sur la personne et investiguons les combinaisons des dimensions de l'intelligence émotionnelle (i.e., profils d'intelligence émotionnelle) et comment ces profils sont liés au sentiment d'efficacité dans la recherche d'emploi et à la clarté des objectifs professionnels au sein d'un échantillon d'étudiants universitaires. Dans la quatrième étude, dans le contexte de la transition au monde du travail, nous examinons l'effet d'une intervention en intelligence émotionnelle sur le développement de l'adaptabilité de carrière et du sentiment d'auto-efficacité dans la prise de décision liée à la carrière. Enfin, nous clôturons cette dissertation en réalisant une revue systématique et une méta-analyse. De manière générale, en triangulant de nombreuses formes de design de recherche, nous poursuivons un travail intégratif dans la compréhension de l'intelligence émotionnelle dans le développement de carrière. Au niveau théorique, nous proposons une vision plus nuancée de l'intelligence émotionnelle et enrichissons son ancrage théorique au regard des processus liés à la carrière. Au niveau pratique, nous fournissons une série d'informations utiles pour les conseillers en orientation et ouvrons de nouvelles voies afin d'adapter et de développer des interventions en intelligence émotionnelle dans les activités de conseil en orientation.

Abstract

Individuals' career development represents a continuous adaptation process toward personal work and life goals. Individuals thus have to cope with important challenges throughout their career, such as making critical career decisions, reevaluating their career aspirations, and coping with vocational and career transitions, which may give rise to significant and complex emotional experiences. In this context, an increasing number of authors have highlighted the importance of developing personal resources to manage these career-related issues. Accordingly, the concept of emotional intelligence—defined as the ability to identify, understand, express, regulate and use one's own and others' emotions—has grasped researchers' interest and is now recognized as such a resource in the career literature. Despite increasing attention devoted to this concept, a small number of studies have questioned the credibility of research findings in the career literature. This doctoral dissertation thus aims to address three objectives: questioning, extending, and integrating what we know about emotional intelligence in career development. To this end, we first propose an original review of the main limitations in the investigation of emotional intelligence in career development. Second, we describe the results of five empirical studies. The first study explores longitudinally how emotional intelligence predicts career adaptability in a two-wave cross-lagged study. In the second study, we resorted to a bifactor-ESEM framework to investigate the predictive validity of emotional intelligence dimensions while controlling for the general factor of emotional intelligence with regard to important career-related outcomes of adult learners such as emotional exhaustion, work-family conflict, and career satisfaction. In the third study, we adopt a person-centered approach and investigate individuals' combinations of emotional intelligence dimensions (i.e., profiles of emotional intelligence) and how these profiles are related to job search self-efficacy and job search clarity among a sample of university students. In the fourth study, we examine the effect of a structured training in emotional intelligence work transition career adaptability and career decision-making self-efficacy in the context of the school-to-work transition. Fifth, we close the present dissertation by realizing a systematic review and meta-analysis. Overall, by triangulating various forms of research designs, we provide an integrative work to the comprehension of emotional intelligence in career development. At the theoretical level, we pursue a more nuanced picture of emotional intelligence and enrich the linkages between emotional intelligence and career processes. At the practical level, we provide a series of fruitful information for guidance counselors and open new avenues for adapting and developing new interventions in emotional intelligence in guidance counseling activities.

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Part I

General introduction

General introduction

For many people, a job is more than an income – it's an important part of who we are. So a career transition of any sort is one of the most unsettling experiences you can face in your life.

Paul Clitheroe

Although some career trajectories remain stable across the life span, significant and fast changes have emerged in the world of work, employment relations, and career paths. Due to globalization, industrialization, and technological developments, individuals now navigate in a configuration of careers that has been described as more volatile, uncertain, and unpredictable, with an increase in the number of individuals' career transitions. As a result, a shift of responsibility for careers from organization to workers has given rise to more individualized career orientation, leading individuals to manage complex emotions in relation to their career development (Hall et al., 2018).

In this context, growing attention has been devoted to personal resources that may help individuals to cope with their career transitions and the wide range of demands that individuals may encounter during their career development processes. The concept of emotional intelligence represents such a self-regulatory resource and refers to the ability and/or individual differences to identify, understand, express, and regulate one's and others' emotions. Hence, an important corpus of research indicates that emotional intelligence is related to psychological, physical, and social adjustments (Sarrionandia & Mikolajczak, 2020). At a psychological level, high emotional intelligence is, for example, related to a higher level of well-being and lower levels of psychological disorders. At a physical level, emotional intelligence is associated with better objective indicators of physical health. Furthermore, higher emotional intelligence is related to more fulfilling social relationships. These significant findings have led researchers to consider emotional intelligence as an important predictor of adaptive functioning, particularly in emotional situations.

The interest in emotional intelligence has also been developed in the realm of career. Indeed, the literature indicates that individuals' ability to identify and manage one's emotions does not only help individuals to anticipate and manage career-related challenges (i.e., career adaptability) or to cope with career decision-making difficulties but also helps individuals to feel more confident at the prospect of finding a job or developing proactive job search behaviors. As a result, individuals with high emotional intelligence tend to be more satisfied with regard to one's career and perceive themselves as more employable. Overall, the literature thus posits emotional intelligence as an important self-regulatory resource in individuals' career development. However, our literature scrutiny indicated that a series of limitations hamper the quality and understanding of research findings, involving a need to enrich and develop a more robust comprehension of the role of emotional intelligence in vocational and career processes.

Accordingly, this doctoral thesis pursued three main objectives. First, it aimed to *question* how we know what we know about emotional intelligence in career development. To this end, we realized an original literature review that highlighted nine limitations with regard to empirical findings that investigated emotional intelligence in career development. Second, this doctoral thesis aimed to *extend* what we know about emotional intelligence in career development. We thus proposed to investigate innovative research designs and unexplored career-related outcomes. Finally, this doctoral thesis aimed to *integrate* what we know about emotional intelligence in career development. More specifically, the final objective was to increase linkages between emotional intelligence and career theories at the theoretical, methodological, and practical levels. To address these three research objectives, we investigated two meaningful career contexts : (1) the school-to-work transition and (2) the involvement in an adult education programme.

The present thesis is divided into three sections. The first section, composed of three chapters, will address the theoretical framework of emotional intelligence – **Chapter 1**, its limitations in the career domain – **Chapter 2**, and how each of the empirical chapters will question, extend, and integrate what we know about emotional intelligence in career development – **Chapter 3**.

The second section will delineate the empirical part of the current thesis, constituted of five empirical studies. **Chapter 4** will focus on a longitudinal approach to emotional intelligence by investigating the cross-lagged effect of emotional intelligence on career adaptability among a sample of adult learners. **Chapter 5** will unravel the measurement models used to investigate emotional intelligence in the realm of career and propose a bifactor-ESEM framework to examine the predictive effect of emotional intelligence dimensions while controlling for the general factor of emotional intelligence among a sample of adult learners. **Chapter 6** will investigate the emergence of emotional intelligence profiles among a sample of university students and examine how these profiles differ in terms of gender. It will also investigate how these profiles predict job search clarity and job search intentions in the context of the school-to-work transition. **Chapter 7** will examine the evaluation of a structured emotional intelligence training with regard to career adaptability and career decision-making self-efficacy in the context of the school-to-work transition. Finally, **Chapter 8** will synthesize the literature between emotional intelligence and career-related outcomes using a systematic review and meta-analytic approach.

The final section, the general discussion, comprises three last chapters. **Chapter 9** will summarize the main findings, whereas **Chapter 10** will highlight the theoretical contributions of the present thesis. Throughout Chapter 10, we will insist on the necessity to nuance the beneficial effects of emotional intelligence and avoid considering individuals with lower emotional intelligence as marginalized people. Then, **Chapter 11** will emphasize the main limitations and future research directions. In doing so, we hope to offer innovative perspectives for future research and the necessity to continue to question, extend and integrate the role of emotional intelligence in career development. Finally, **Chapter 12** will propose a series of practical contributions, especially for guidance counselors and guidance counseling activities. The manuscript will be closed with a general conclusion.

Chapter 1

Emotional intelligence

In this chapter, we develop the concept of emotional intelligence. To this end, we first propose a brief history of the construct. Second, we address the main approaches and models of emotional intelligence: (1) the ability-emotional intelligence approach, (2) the trait-emotional intelligence approach, (3) the mixed models of emotional intelligence, and (4) the integrative models of emotional intelligence. Accordingly, we develop the main theoretical models for each approach. Third, we propose our definition of emotional intelligence. Fourth, we review the beneficial effects of emotional intelligence on the four most important individuals' life spheres: psychological health, physical health, social relationships, and educational and work success. To this end, we propose a synthesis of the different meta-analyses developed in the literature. Finally, we close **Chapter 1** by offering a state-of-the-art of emotional intelligence findings in career and vocational development.

Chapter 1

Emotional intelligence

Anyone can become angry—that is easy. But to be angry with the right person, to the right degree, at the right time, for the right purpose, and in the right way—this is not easy.

Aristotle, The Nicomachean Ethics

1. Introduction

Individuals' everyday life is highly emotional, as suggested by recent research showing that humans experience at least one emotion 90% of the time in real life (Trampe et al., 2015). Emotion may arise in a wide range of daily events and helps individuals to guide their decisions, prioritize their goals, indicate what is essential for them, influence their behaviors, and allow them to express their needs to others (Clore et al., 2001; Frijda, 1986; Keltner & Kring, 1998; Lowenstein & Lerner, 2003). However, if emotion may be present for the better, emotion may also be present for the worse. Indeed, most psychological disorders and distress are directly related to emotional difficulties expressed by unmodulated and/or excessive levels of emotion. For instance, an excess of anxiety may lead to anxiety disorders such as phobia, whereas an excess of sadness may be related to depressive disorder.

Although individuals experience all sorts of emotions, the literature indicates that they manifestly tend to differ in how they identify, understand, express, manage and use one's and others' emotions. The concept of emotional intelligence—also labeled emotional skills or emotional competence—has been developed to account for this idea. Over the last 30 years, the concept of emotional intelligence has become a tremendously popular issue within a wide range of different fields. Although it was propelled thanks to the famous book of Daniel Goleman in 1995, a series of authors can be considered precursors of the concept. Indeed, Aristotle had already proposed the idea of "emotion-virtue," a form of power for managing emotions (Roberts, 1989). Spinoza (1677/1989) also talked about the importance of emotion and cognition by criticizing the dual paradigm of Descartes (i.e., emotion vs. cognition). Later, the term social intelligence—closely related to the concept of emotional intelligence—was introduced by John Dewey in 1909 (Dewey, 1918). This author argued that the person and the social are inseparable. A few years later, Thorndike (1920) also introduced the importance of social intelligence as a distinct intelligence and proposed to define it as "… *the ability to understand and manage men and women, boys and girls–to act wisely in human relations*" (p. 228). After 50 years of research, the psychologist Cronbach (1960) supported that the measurement and the definition of social intelligence were still unclear. In 1983, Howard Gardner referred to social and intrapersonal intelligence in his famous multiple intelligence theory. This attempt aided in developing the origins of the term "emotional

intelligence," which emerged from a central paper written by Mayer and Salovey in 1990. In this article, these two authors defined emotional intelligence as "*the subset of social intelligence that involves the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions"* (p. 189). However, the famous Daniel Goleman's book entitled *Emotional Intelligence: Why It Can Matter More Than IQ* propelled the concept's popularity beyond the scientific community to the general public. Since the publication of Goleman, a series of research has been conducted. Some considered emotional intelligence as important as the intellectual quotient (e.g., Van Rooy & Viswesvaran, 2004).

Due to the wide range of theoretical debates with regard to the concept, the present chapter reviews the four main approaches to emotional intelligence and the related theoretical models for each approach. In order to help the reader, each of the theoretical models follows the same structure by proposing: (1) their main principles and definition, (2) the measures that have been developed, and (3) the limitations of the model/measures. Following the first section, we then propose a global definition of emotional intelligence according to these models. Next, we delineate a review of the beneficial and predictive effects of emotional intelligence on individuals' life spheres. Finally, we close the chapter by delineating the empirical evidence about the role of emotional intelligence in career development. This allows us to introduce the second chapter, which aims to present the main limitations in investigating emotional intelligence in career development.

2. Approaches to emotional intelligence

Over recent years, emotional intelligence has received a significant amount of attention. Some authors have commonly acknowledged emotional intelligence as a looming construct with strong predictive power (e.g., Bar-On, 2000), whereas other authors have argued that it was nothing else than a constellation of well-known personality factors and intelligence (e.g., Conte, 2005; Locke, 2016). These various theoretical debates have given rise to considerable individual differences in emotional functioning models. It exists today two main approaches: the ability-emotional intelligence and the trait-emotional intelligence. A third approach, labeled mixed models, also emerged and included other non-cognitive features such as social skills, adaptability, and empathy, among others. To reconcile previous theoretical debates, some authors have also developed a fourth kind of model, known as integrative models of emotional intelligence. Thus, the definition of emotional intelligence is always debating.

The points below describe the major theoretical models of each of the different emotional intelligence approaches by applying the following structure: (1) the main principles and definition, (2) the measures, and (3) the limitations of the model.

2.1 Ability models: The four-branch hierarchical model of emotional intelligence (Mayer & Salovey, 1990)

2.1.1 Main principles and definition

The most known theoretical model of ability-emotional intelligence is the four-branch hierarchical model, developed by Mayer and Salovey (1990). This model posits four sets of abilities that rise in cognitive complexity of problem-solving to treat emotional information from the first branch to the fourth branch. The four abilities (or branches) encompass 1) emotion perception, 2) emotion facilitation of thoughts, 3) emotion comprehension, and 4) emotion management. Emotion perception refers to identifying and discriminating emotions in oneself, others, and from the environment. The second branch refers to the ability to generate emotional states to facilitate cognitive tasks. The third branch refers to understanding complex and mixed emotions and understanding the antecedents, meanings, and consequences of emotional states. The last and more complex branch refers to the ability to regulate one's own and others' emotions to achieve a specific and desired outcome.

2.1.2 Measures

As this model considers emotional intelligence as a set of abilities, authors have operationalized the Mayer-Salovey-Caruso Emotional Intelligence Test Battery (MSCEIT; Mayer et al., 2003), which provides two tests to evaluate each of the four branches of emotional intelligence. During the tests, participants are confronted with a wide range of everyday life situations that involve emotional experiences. Then, participants are invited to select the correct answer related to the hypothetical emotional situation. For example, a picture of a person that smiles is first presented to the participant. Then, the participant has to respond to the following question, "*What emotions are expressed in this face?*" on a Likert-scale type ranging from 1 (no happiness) to 5 (extreme happiness). Regarding the temporal stability of emotional intelligence using the MSCEIT, some studies have demonstrated high correlation coefficients of the test-retest scores, suggesting evidence of the scores' stability (Sanchez-Garcia et al., 2016). That being said, in the context of career and using the MSCEIT, Di Fabio and Kenny (2011) have shown that it is possible to enhance significantly emotional intelligence abilities with a structured intervention in emotional intelligence. It thus brings evidence with regard to the malleability of the construct.

2.1.3 Limitations of the model/measures

Despite the wide use of this instrument, empirical and psychometrics supports have been weak. First, a series of research underlines some construct validity issues. For example, some studies did not support a hierarchical model with one underlying general factor of emotional intelligence (Fiori & Antonakis, 2011; Rossen et al., 2008). Furthermore, recent studies using more complex measurement models showed that the second branch (i.e., facilitating thought using emotions) did not appear as a separate construct and overlapped with the other branches (Gignac, 2005; Rossen et al., 2008). Other researchers have also shown that the utilization dimension explained nothing more than the general factor (Palmer et al., 2005). In addition,

a recent meta-analysis synthesizing the reliability and measurement models of eight MSCEIT subsets showed an overlap between the facilitation and perception branches with an $r = .90$ (Fan et al., 2010). In addition, other psychometric limitations have been underlined with regard to fidelity, reliability, and validity. These results have led the authors to recommend using a three-branch model, including the perception, comprehension, and management areas (Joseph & Newman, 2010). The MSCEIT also tends to demonstrate difficulties in differentiating individuals with high scores compared to those presenting average scores (Fiori et al., 2014). Some authors, such as Fiori (2009), argued that the MSCEIT tends to investigate performance in hypothetical situations (i.e., declarative knowledge) rather than actual performance (i.e., procedural knowledge). Other tests have been developed to address these limitations, such as the Situational Test of Emotion Understanding (MacCann & Roberts, 2008), the Situation Test of Emotion Management (MacCann & Roberts, 2008), the Geneva Emotion Recognition Test (Schlegel et al., 2014) and the recent Geneva Emotional Competence Test (Schlegel & Mortillaro, 2019; Simonet et al., 2021).

2.2 Trait models: Petrides and Furnham's model of emotional intelligence (2001)

2.2.1 Main principles and definition

A few years after conceiving the ability model of emotional intelligence, other researchers, such as Petrides and Furnham (2001), claimed the importance of developing a new operationalization of emotional intelligence with the trait-emotional intelligence model. In contrast to the ability model, trait-emotional intelligence encompasses behavioral dispositions and self-perceived abilities in emotional situations. Following the Eysenckian view (Eysenck & Eysenck, 1985), the trait approach refers to traits as individual dispositions and differences. As emotional intelligence tends to be an oxymoron, the authors initially proposed the term "emotional self-efficacy." Accordingly, Petrides and Furnham (2001) developed the model based on personality constructs, such as alexithymia, well-being, and empathy. Indeed, they proposed a total of 15 facets that composed trait-emotional intelligence: (1) adaptability, (2) assertiveness, (3) emotion expression, (4) emotion management (others), (5) emotion perception (self and others), (6) emotion regulation, (7) impulsiveness (low), (8) relationships, (9) self-esteem, (10) self-motivation, (11) social awareness, (12) stress management, (13) trait empathy, (14) trait happiness, and (15) trait optimism.

2.2.2 Measures

Based on the aforementioned conceptualization, the Trait Emotional Intelligence Questionnaire (TEIQue) has been developed to evaluate individuals' trait-emotional intelligence levels (Petrides, 2001). The scale comprises 153 items covering each of the 15 facets of trait-emotional intelligence. Regarding the temporal stability of the measure, a series of research that used the TEIQue have investigated zero-order and partial correlations between multiple time scores. Most research has shown high significant correlations, recognizing emotional intelligence with the TEIQue as a stable personality trait (Mavroveli

et al., 2008; Kostantinos V. Petrides, 2009; Smith et al., 2008). However, some interventional studies using the TEIQue have shown that it is possible to increase significantly–with a large effect size–the global level of emotional intelligence, suggesting the malleability of the construct (Kotsou et al., 2011; Nelis et al., 2011).

2.2.3 Limitations of the model/measures

While this scale reflected a solid psychometric basis and cross-cultural stability (Andrei et al., 2016, Italian version; Freudenthaler et al., 2008, German version; Marjanović & Dimitrijević, 2014, Serbian version; Martskvishvili et al., 2013, Georgian version; Mikolajczak et al., 2007, French version; Kostantinos V. Petrides, 2009, English original), it has however been criticized due to its overlaps with higher-order personality dimensions. To this end, a recent meta-analysis showed that emotional intelligence measured by the TEIQue had a small but significant incremental validity beyond higher-order personality dimensions or social desirability ($\Delta R^2 = .06$; Andrei et al., 2016).

2.3 Mixed-models

2.3.1 Bar-On's socio-emotional intelligence model (2006)

2.3.1.1 Main principles and definition

Based on the socio-emotional intelligence framework initially developed by Thorndike in 1920 and the work of Darwin (1872/1965), Reuven Bar-On conceived the Bar-On model of emotional-social intelligence. Bar-On's model defined emotional-social intelligence as "*a cross-section of interrelated emotional and social competencies, skills and facilitators that determine how effectively we understand and express ourselves, understand others and relate with them, and cope with daily demands"* (p. 14). Bar-On developed a model composed of five core dimensions according to the definition. The first is the *Intrapersonal* dimension. This dimension refers to the ability to accept oneself (i.e., self-regard), to be aware of and understand one's emotions (i.e., emotional self-awareness), to express one's emotions in a socially acceptable manner (i.e., assertiveness), to be independent of others (i.e., independence) and to actualize and reach personal goals (i.e., self-actualization). *Interpersonal* is the second dimension. It refers to being aware and understanding the feelings of others (i.e., empathy), the capacity to cooperate with others (i.e., social responsibility), and developing satisfying and positive relationships with others (i.e., interpersonal relationships). The third dimension is *Stress management*. This dimension refers to the capacity to manage adaptively (i.e., stress tolerance) and control (i.e., impulse control) emotions. The fourth dimension is *Adaptability*. It refers to the capacity to examine the discrepancy between one's feelings et the reality (i.e., reality-testing), the ability to adapt one's emotion to new situations (i.e., flexibility), and to solve personal and interpersonal problems (i.e., problem-solving). The last dimension is *General mood*, referring to the tendency to be positive (i.e., optimism) and happy (i.e., happiness).

2.3.1.2 Measures

According to its model, Bar-On has developed the Emotional Quotient Inventory (EQ-i) to measure emotional intelligence and its dimensions. The EQ-i is a self-report measure published in 1997, containing 133 items in its original form. In addition, short-forms and multi-rater EQ 360 are also available. A series of studies have investigated the stability and change in emotional intelligence using the EQ-i. For example, Keefer et al. (2013) found moderate levels of rank-order stability from late childhood (age 10-11) to adolescence (age 16-17). In the same vein, Dave et al. (2021) also found moderate levels of rank-order stability from ages 20-21 to 24-25 years. These moderate levels of temporal stability indicate that emotional intelligence seems to be more malleable during young age than in middle and older age. These results were corroborated by a recent study that showed a high rank-order stability from emerging adulthood (age 17-25) to middle age (mean age 34.5).

2.3.1.3 Limitations of the model/measures

Although the EQ-i demonstrates good reliability, this scale has been criticized for its lack of discriminant validity evidence. Moreover, few studies have examined its predictive validity over cognitive ability and personality dimensions (Conte, 2005).

2.3.2 Goleman's emotional intelligence model (2000)

2.3.2.1 Main principles and definition

Goleman (1998) defined emotional intelligence as a form of emotional competence and a "*learned capability based on emotional intelligence that results in outstanding performance at work."* Based on this definition, Goleman (1995) and Boyatzis (1982) developed a more concise description of emotional intelligence as a wide range of competencies encompassing self-awareness, self-management, social awareness, and social skills. The final model of Goleman contains 25 competencies structured in five clusters. The first cluster refers to Self-awareness, including emotional awareness, accurate self-assessment, and self-confidence. The second cluster refers to Self-regulation, including self-control, trustworthiness, conscientiousness, adaptability, and innovation. The third cluster refers to Motivation, including achievement drive, commitment, initiative, and optimism. The fourth cluster refers to Empathy and includes understanding others, developing others, service orientation, leveraging diversity, and political awareness. The fifth cluster refers to Social skills, including influence, communication, conflict management, leadership, change catalyst, building bonds, collaboration and cooperation, and team capabilities. This model thus shared certain common features with the Bar-On model.

2.3.2.2 Measures

Accordingly, based on Goleman's model, the authors developed the Emotional Competence Inventory (ECI; Boyatzis et al., 2000). This instrument is composed of 72 items that cover four dimensions: 1) self-awareness, 2) self-management, 3) social awareness, and

4) relationship management. To the best of our knowledge, no studies have examined the temporal stability of the ECI (Bru-Luna et al., 2021).

2.3.2.3 Limitations of the model/measures

This scale is not without limitations, as different authors have mainly criticized the ECI for its overlap with the Big Five personality dimensions and other psychological constructs (Conte, 2005; Matthews et al., 2002; Van Rooy & Viswesvaran, 2004).

2.4 Integrative models

2.4.1 The multi-level developmental investment model

2.4.1.1 Main principles and definition

From a developmental perspective, Zeidner et al. (2003) proposed a developmental and integrative model of emotional intelligence, depicted in Figure 1. According to these authors, emotional intelligence results from multiple levels of emotion-regulation processes: temperament, rule-based skills, and self-aware emotion regulation. First, positive temperament refers to temperamental qualities such as positive affectivity and attention control. Second, rule-based skills refer to adaptive emotional display. Finally, self-aware emotion regulation refers to intrapersonal regulative behaviors. In this model, the authors argue that individuals' level of emotional intelligence progresses with age according to the interaction between the biologically-based temperament and the socially-learner self-direct emotion regulation. Indeed, the development of these three processes is influenced by personal characteristics such as genes, environmental and social elements such as parents, and media. Finally, verbal ability influences the development of emotional intelligence as learned-based skills and the development of metacognitive abilities, which influence the development of emotion regulation.

2.4.1.2 Measures

No measure has been developed to account for this model.

2.4.1.3 Limitations of the model/measures

As we can see, this model is more of a theoretical framework that aims to delineate the development of emotional intelligence rather than the development of specific measures. In addition, it has never been empirically tested.

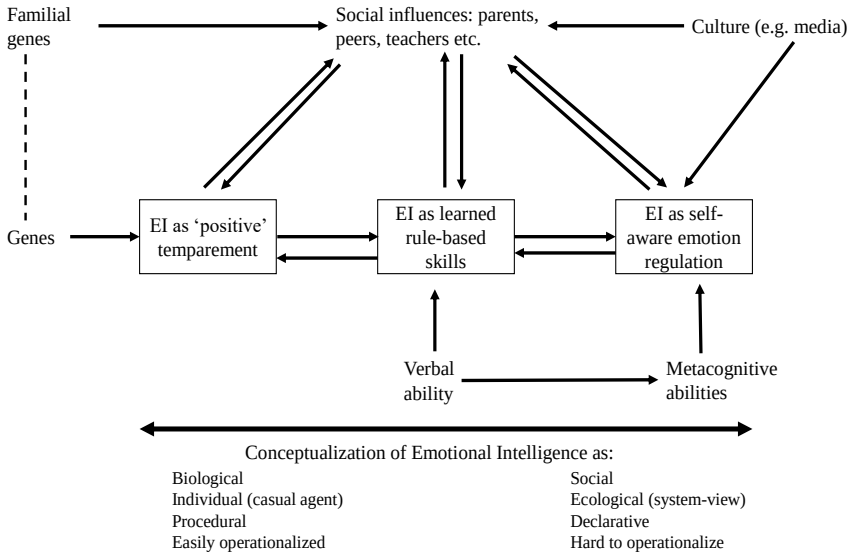


Figure 1. The integrated model for the development of emotional intelligence (Zeidner et al., 2003, p. 90)

2.4.2 The dual-process model of emotional intelligence

2.4.2.1 Main principles and definition

According to Fiori (2009), considering emotional intelligence based solely on conscious mechanisms limits our comprehension of the underlying processes of emotional intelligence behaviors. Indeed, emotion may also be treated automatically and may predict individuals' behavior without the implication of conscious reasoning. In addition, Mayer and Salovey (1997) did not provide any information to determine what leads to emotion-based performance in their initial conceptualization. Therefore, this author claims the importance of disentangling conscious and automatic processing as a potential predictor of individual differences with regard to emotionally intelligent behaviors. For instance, individuals may process emotions without conscious perception of these stimuli (Tamietto & Gelder, 2010).

In this model, depicted in Figure 2, the author thus supports a dual-process model composed of conscious and automatic processes. The strength of this model is twofold: (1) it proposes an explanation of what processes might compose emotional intelligence, and (2) it proposes an integrative model by examining individual differences with regard to emotional information analysis.

Automatic processing refers to underlying processes defined as uncontrollable, unintentional, efficient, and unconscious. These processes are activated depending on the environmental demands. Following Fiori (2009), the most important characteristic of automatic processing with regard to emotional intelligence is the unconsciousness feature. Unconscious feature refers to the (un)awareness of (1) the cause of the emotion, (2) the type of emotion, and (3) the consequences of emotion. Accordingly, emotional unconsciousness is composed of preconscious processes, implicit processes, and automatized processes. Preconscious processes refer to a lack of awareness at a specific time, but this information may be accessible whether individuals focus their attention on it (Baars, 1988). Indeed, emotional awareness—also labeled emotion perception—is a core dimension in most emotional intelligence conceptualizations. Implicit processes refer to mental processes that are not identified at a conscious level, given that the process may not meet the threshold of awareness. Finally, automatized processes refer to processes that can be developed with training. For example, it is possible to develop emotion identification and the ability to lead preconscious processes to the threshold of consciousness. Growing attention to physical changes (e.g., facial emotional expression in interpersonal situations) is a form of ability that can become automatized as a habit. For example, emotionally intelligent individuals are able to use nonverbal emotional cues to understand others' feelings (O'Sullivan, 2005). Fiori also suggests that the three characteristics of the unconscious could be explained by individual differences. While we recognize that emotional intelligence may be expressed by automatic processes, it will not be addressed in the present manuscript. We will come back to this limitation in the Discussion section of the present manuscript.

2.4.2.2 Measures

No specific measure was developed based on this model. However, a series of assessment methods exist to evaluate and differentiate conscious processes from automatic ones. For the ability-emotional intelligence, a series of measures have been described in point 2.1.1.3. Regarding the automatic processes, cognitive tasks exist such as the Emotional Stroop Task (Stroop, 1935) or the Emotional Go/NoGO task (GoNoGo; Hare et al., 2005).

2.4.2.3 Limitations of the model/measures

Even if the model proposed an additional—and to some extent, necessary—perspective to understand emotionally intelligent behavior, developing such a methodology may be time-consuming for participants. In addition, evaluating automatic processes involves laboratory tasks that are not always easy to implement. To note, the present model has influenced the development of a new emotional intelligence framework, the PAT, that we will describe in the next point of the current chapter.

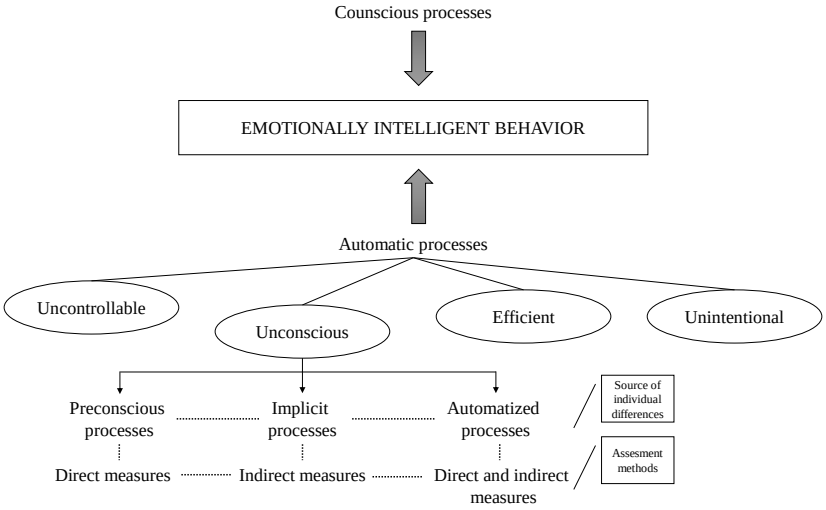


Figure 2. The different components of the dual-process model (Fiori, 2009, p. 34)

2.4.3 The tripartite model of emotional intelligence

2.4.3.1 Main principles and definition

In order to reconcile prior scientific debates, the tripartite model developed by Mikolajczak, Kotsou, Quoidbach, and Nelis (2009) aimed to integrate different conceptions of emotional intelligence by arguing that individuals differ in terms of emotion-related knowledge, abilities, and traits. According to these authors, the knowledge level refers to what individuals know about emotions and emotionally competent behaviors (e.g., *Do I know which emotion regulation strategies are adapted to negative events?*). The ability level refers to the ability to apply this knowledge in a given specific situation (e.g., *Am I able to regulate my emotions and apply adaptive emotion regulation strategies during a difficult situation?*). The trait level refers to emotion-related dispositions, that is, the natural tendency to behave in a given situation (e.g., *Do I typically regulate my emotions during difficult situations?*). Given the malleability of the construct and recent empirical findings that demonstrated that emotional intelligence can be learned (Kotsou et al., 2011; Nelis et al., 2011), these authors preferred the term "emotional competence," initially developed by Saarni (1999), rather than the term emotional intelligence. These authors define emotional competence as the extent to which individuals differ in their ability to identify, understand, express, regulate and use one's own emotions and the emotions of others (Mikolajcak et al., 2009).

2.4.3.2 Measures

To measure the trait level of emotional intelligence, Brasseur et al. (2013) developed the Profile of Emotional Competence (PEC). This instrument is composed of 50 items that assess five facets, each tapping into an intrapersonal domain (referring to one's own emotions) and

an interpersonal domain (referring to others' emotions): emotion identification, emotion comprehension, emotion expression, emotion regulation, and emotion utilization. These dimensions were based on Mayer and Salovey's conceptualization, but the authors differentiated the identification from the expression branches. A series of research used the PEC and demonstrated its incremental validity over the Big Five personality traits (Brasseur et al., 2013; Nozaki & Koyasu, 2016). Given its state-of-the-art conceptualization and integrative perspective, we used this measure in **Chapter 4**, and **Chapter 7**. Using the PEC, the test-retest reliability obtained from Japanese and Belgian samples was pretty high, indicating the stability of emotional intelligence (Nozaki & Koyasu, 2016).

2.4.3.3 Limitations of the model/measures

The major limitation of this model is that it has never been examined empirically. Indeed, Brasseur et al. (2013) developed a self-report measure—that we will develop in the next paragraph—that only investigates the natural tendency of individuals to behave in emotional situations. In other words, this measure only examines the trait level of emotional intelligence. In addition, recent research showed that the intrapersonal dimension of utilization in the PEC did not load on the general factor of emotional intelligence (Nozaki et al., 2019). Accordingly, we proposed a critique of this measure in **Chapter 5**.

2.4.4 The cascading model of emotional intelligence

2.4.4.1 Main principles and definition

Based on a lack of theoretical clarity and distinction 1) between the two distinct approaches of emotional intelligence (ability-emotional intelligence vs. trait-emotional intelligence), 2) about the role of emotional intelligence dimensions, and 3) the redundancy of emotional intelligence with cognitive intelligence and personality constructs, Joseph and Newman (2010) proposed and examined an integrative model of emotional intelligence that they labeled the cascading model of emotional intelligence. This model is displayed in Figure 3. Based on Mayer and Salovey's framework (1990), these authors suggest that emotion perception predicts emotion understanding, which predicts emotion regulation, and, lastly, predicts job performance. In order to control for the overlap between emotional intelligence and personality traits, they also incorporated the predictive influence of conscientiousness on emotion perception and job performance and the predictive influence of emotional stability on emotional regulation and job performance (i.e., personality traits). They finally argue the predictive effect of cognitive ability on emotion understanding and job performance. Following a meta-analytic approach, these authors demonstrated in a structural equation model the empirical validity of their model, including 60 effect sizes on a total of 18,462 participants.

2.4.4.2 Measures

No specific measure has been developed to account for this model.

2.4.4.3 Limitations of the model/measures

It is important to stress the cross-sectional nature of the current meta-analytic investigation, limiting the authors' ability to draw causal inferences. Thus, this model is more the conceptualization of independent dimensions to evaluate its effects on job performance rather than the development of a general measure.

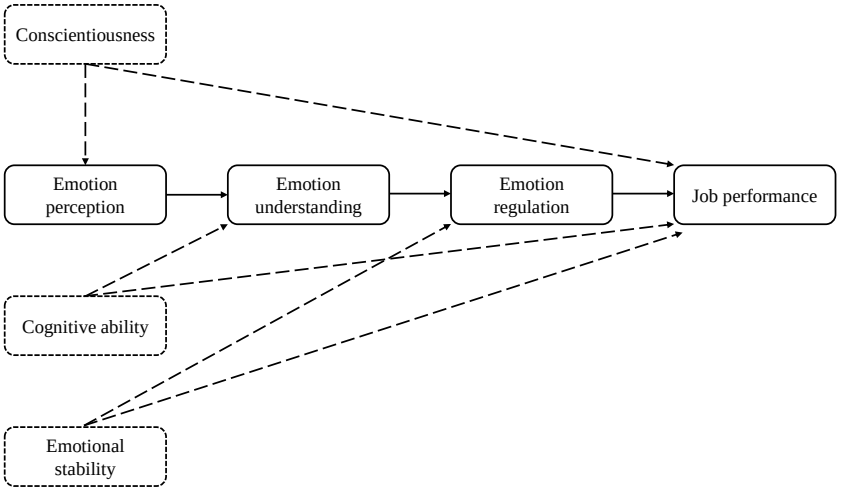


Figure 3. The cascading model of emotional intelligence
(Joseph & Newman, 2010, p. 56)

2.4.5 The PAT integrated framework

2.4.5.1 Main principles and definition

As described in the present chapter, few models aimed to gather the different approaches of emotional intelligence into the same model. For an exception, we presented the tripartite model of emotional intelligence developed in 2009 by Mikolajczak and colleagues. However, this model did not explain how the different emotional intelligence levels (i.e., knowledge, ability, and trait) would co-occur together. Accordingly, a recent framework has been proposed to address this issue: the PAT integrated framework (i.e., EI**P** – **A**EI – **T**EI). EIP refers to Emotion Information Processing (EIP), AEI refers to ability-emotional intelligence (AEI), and TEI refers to Trait-Emotional Intelligence (TEI). This framework is depicted in Figure 4. It is important to note that the authors' objective was not to propose a new model of emotional intelligence but to unravel the differential and interactional effects of the different components.

In contrast to the tripartite model of emotional intelligence, we can observe that the knowledge level does not appear and that a new component, so-called emotion information processing, is a part of this framework. Hence, emotion information processing has been introduced recently as a component that might explain variability in emotional intelligent behavior (Fiori et al., 2021; Fiori & Vesely-Maillefer, 2018). This component refers to the

extent to which individuals process emotion, that is, how they receive, perceive, encode, focus their attention to, maintain and recover emotion information (Suedfeld & Tetlock, 1977). Its development addresses the classical ability-emotional intelligence measures issues (e.g., MSCEIT, STEM). According to the authors, these measures tend to capture individuals' acquired emotion knowledge rather than individuals' abilities to apply their knowledge in new situations (for an in-depth critique, see Fiori & Vesely-Maillefer, 2018). It thus represents a form of declarative knowledge and crystallized intelligence. In contrast, emotion information processing is a form of fluid intelligence, that is, the ability to process emotion information in order to guide thoughts and behaviors successfully.

Figure 4 represents the conceptualization of the PAT integrated framework. Following Vesely-Maillefer, Udayar, and Fiori (2018), (1) each emotional intelligence component is independent of each other, (2) there is an interaction between each of the emotional intelligence components (i.e., AEI × TEI, EIP × EAI, TEI × EIP) and (3) emotional intelligence competence results from the interaction between all three components. In addition, the authors stress that all three components have differential contributing effects but are always mobilized. The authors also emphasize that the performance and how emotional intelligence competence is deployed are context-dependent. This context plays a role in the level of each of the emotional intelligence components' contributions.

2.4.5.2 Measures

No specific measures have been developed to account for this model. Authors thus use a variety of different measures to evaluate each of the emotional intelligence components.

2.4.5.3 Limitations of the model/measures

Initial empirical evidence of the PAT was not without limitations. Indeed, in their study, Maillefer et al. (2018) highlighted that they tested only one subscale for each model's components (i.e., emotion understanding for ability-emotional intelligence; emotionality for trait-emotional intelligence; emotional Go/NoGo for Emotion Information Processing). Furthermore, the PAT is a recent framework that needs some new empirical evidence to extend what we know about the interaction between the three components. That being said, Recent empirical findings provided promising avenues for future research (Fiori et al., 2021).

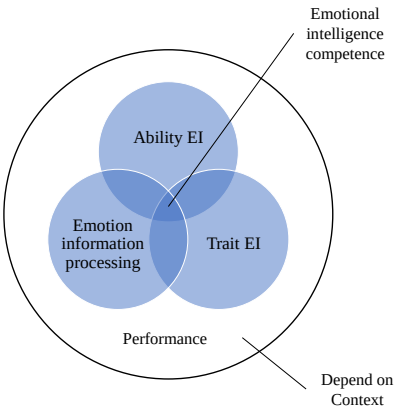


Figure 4. PAT integrated framework for the prediction of emotional intelligence behavior (Vesely-Maillefer et al., 2018)

2.4.6 The process model of dynamic self- and other-focused emotional intelligence

2.4.6.1 Main principles and definition

In spite of the strengths and weaknesses of each of the previous approaches, Pekaar et al. (2020) claimed that the main limitation in the prior emotional intelligence conceptualizations was to blur the differential effects of self-focused emotional intelligence (i.e., intrapersonal facet) and other-focused emotional intelligence (i.e., interpersonal facet). They also argue that a handful of research aimed to understand the fundamental processes that account for emotional intelligence effects (Peña-Sarrionandia et al., 2015). Consequently, these authors developed the process model of dynamic self- and other-focused emotional intelligence to address these issues, depicted in Figure 5. Following these authors, Self-focused emotional intelligence refers to the awareness and regulation with emotions of the self, as Other-focused emotional intelligence refers to the awareness and regulation with the emotions of others.

This theoretical framework is composed of multiple steps and two primary levels. The first level is the Episodic level, referring to the emotional episode. In this respect, this emotional episode incorporates three cascading steps. The first step starts with a situational cue (i.e., an event) that gives rise to one's emotions or the emotional expression of another person. The elicited emotions may take two paths, leading to the second step, labeled emotion processing.

On the one hand, the individuals' ability to appraise and identify their emotions will predict individuals' effectiveness in regulating their emotions. On the other hand, the individuals' ability to appraise and identify others' emotions will predict their ability to regulate others' emotions. However, according to Pekaar et al. (2020), the intrapersonal and interpersonal levels may be facilitating or conflicting and align with the famous popular belief that "*You first need to help yourself before you can help the other*." The final step refers

to the consequences of emotion processing. Indeed, depending on how individuals appraise and regulate their own and others' emotions, individuals often experience different emotions, labeled "Secondary emotions." These secondary emotions help individuals reach their short-term objectives, and the achievement of these is called Episodic performance. In parallel, a second level—the person-level—influences the different steps of the Episodic level. For example, contextual differences (i.e., environmental demands, emotion type, and relation type) influence the situational cues and emotion process, as well as individual differences (i.e., emotional intelligence and motivation) predict emotion processing. Finally, the (un)repeated achievement of short-term goals (i.e., episodic performance) influences distal consequences at the Person level, such as individuals' health and well-being, job performance, and social relations.

The strength of the present model is its ability to differentiate the intrapersonal from the interpersonal processes at play in emotion information processing and to underlie the daily manifestation and enactment of emotional intelligence processes. It also offers the possibility of examining how the different emotional intelligence dimensions interact and disentangling their consequences.

2.4.6.2 Measures

Pekaar et al. (2018) have developed the self-report Rotterdam Emotional Intelligence Scale (REIS), which demonstrated good psychometric properties, convergent, discriminant, and criterion validity. This scale offers the possibility to differentiate awareness and regulation emotion dimensions according to the intrapersonal and interpersonal facets. Due to the limitations of the PEC presented in **Chapter 5**, the REIS has thus been used in **Chapter 6**. Regarding the stability of emotional intelligence with the REIS, a series of studies conducted by Pekaar and colleagues using experiencing sampling methodology demonstrated the fluctuation and enactment of emotional intelligence on a daily basis (Pekaar et al., 2017, 2019; Pekaar, Bakker, van der Linden, Born, et al., 2018). These results also showed that approximately 50% to 70% of the variance in emotional intelligence could be attributed to within-person fluctuation.

2.4.6.3 Limitations of the model/measures

The present scale is a self-reported instrument that may be criticized because of the influence of social desirability bias. Second, the authors reported limitation with regard to the generic format of items. It is, thus, sometimes impossible to apply items to all kinds of emotions. Third, there is a necessity to implement experience sampling methodologies to examine the processual nature of emotional intelligence. Otherwise, the REIS could be criticized for the same limitations as any self-report measure.

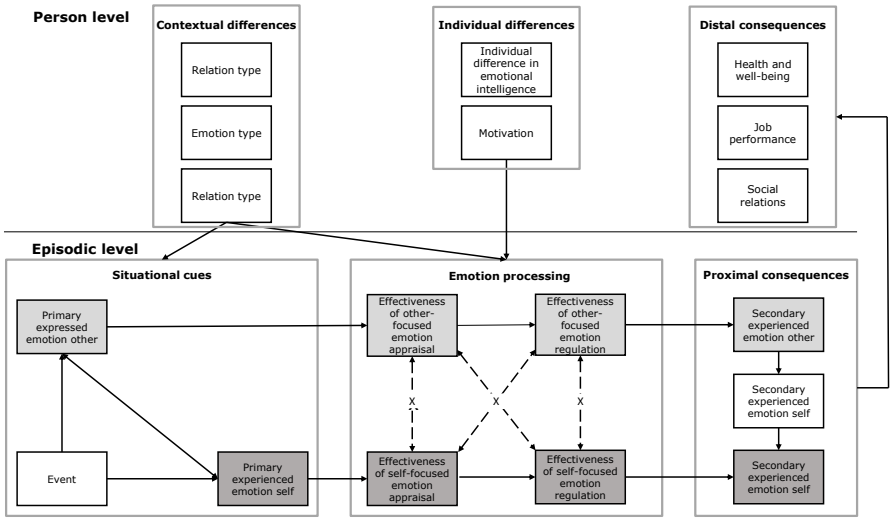


Figure 5. The process model of dynamic self- and other-focused emotional intelligence (Pekaar et al., 2020, p. 4)

2.5 Towards a general definition of emotional intelligence

Despite the significant theoretical debates about the concept of emotional intelligence, we consider that emotional intelligence can broadly be described as a set of knowledge, ability, and trait components to identify, understand, express, regulate and use emotions of the self and others to regulate one's (social) behavior, particularly in emotional situations (Mikolajczak et al., 2009; Pekaar et al., 2020; Petrides, 2011; Salovey & Mayer, 1990).

2.6 The rationale of the current definition and the use of the trait approach

In the present manuscript, all studies have investigated the role of emotional intelligence through self-report measures, relying upon a trait approach of emotional intelligence. We thus examined emotional intelligence as a trait rather than an ability or knowledge. In other words, we investigated the individuals' natural tendency to behave in emotional situations. We decided to rely on the trait approach for different reasons. First, self-report measures are easy-to-use and participants may more easily accept to fulfill a questionnaire compared to other methods such as laboratory tasks or physiological measures. This method thus allows us to recruit a large number of participants. Second, several authors argue that the best expert about vocational development and behavior is the person. According to Cooper et al. (2020), vocational and career development is a subjective experience, and self-report measures can evaluate this subjectivity. Third, self-report measures are not less precise than actual performance on external tests of emotional abilities. They just measure distinct components of emotional intelligence. Indeed, prior studies showed weak relationships between knowledge, ability-, and trait-emotional intelligence (Cardoso-Seixas, 2016; Lumley et al.,

2005), relating distinct components. In addition, self-beliefs about emotional intelligence may have strong effects on actual behavior (Kappes & Schikowski, 2013). According to this approach, we relied upon two main theoretical models: the tripartite model of emotional intelligence (Mikolajczak et al., 2009) and the process model of dynamic self- and other-focused emotional intelligence developed by Pekaar et al. (2020). These theoretical models were selected in light of our definition and the measures they have developed (i.e., point 2.1). Indeed, these models capture the main dimensions (i.e., identification, comprehension, expression, regulation and utilization) defined in the literature and catch the complement but distinct nature of emotional processes. Second, considering these dimensions allow us to differentiate the emotion elicitation from emotion regulation. Third, we focus on emotion processing and put other personality constructs such as leadership or optimism aside. By doing so, we ascertain that we do not overlap with other personality aspects. We can also examine the effect of the global factor and the dimensions. Finally, these theoretical models offer the possibility to differentiate the intrapersonal from the interpersonal dimensions of emotional intelligence. Thus, Chapter **4**, **Chapter 5**, and **Chapter 7** refer to the trait-level of the tripartite model of emotional intelligence (Mikolajczak et al., 2009). Due to measurement issues that we have faced the **Chapter 5** with the PEC and the overreliance on the intrapersonal facet in the study of emotional intelligence, **Chapter 6** used a recent measure of emotional intelligence: the REIS (Pekaar et al., 2018). The focus in the manuscript is thus not on what people know or what they are able to do but on what they think they naturally do in emotional situations. That being said, even if we did not evaluate the actual performance in emotional abilities, we will come back to this limitation in the General Discussion of the present manuscript and we will discuss about the well known "common method bias" in **Chapter 2**.

3. The beneficial effects of emotional intelligence

Over the last decades, an important body of research has demonstrated the beneficial effects of disposing of a high level of emotional intelligence. Indeed, emotional intelligence seems to influence the essential spheres of individuals' life: psychological health, physical health, social relationships, and academic and work success. Therefore, we synthesized each of the meta-analytic results in Table 1.

3.1 Psychological health

Emotional intelligence seems to be a strong predictor of individuals' psychological health. Indeed, a higher level of emotional intelligence has been associated with a wide range of psychological health indicators. First, different meta-analyses showed that individuals with a high level of emotional intelligence presented better mental health, such as lower levels of mental disorders (Martins et al., 2010; Schutte et al., 2007). More specifically, a body of research has shown that emotional intelligence was associated with decreased psychological disorders such as depression (Mikolajczak et al., 2006; K. V. Petrides et al., 2007), anxiety (Mikolajczak et al., 2007; Kotsou et al., 2011), job burnout (Karahan & Yalçin, 2009) and psychological distress (Armstrong et al., 2011; Slaski & Cartwright, 2003). In addition, a

recent meta-analysis demonstrated that emotional intelligence was related to subjective well-being (Sánchez-Álvarez et al., 2016). As demonstrated by interventional studies, emotional intelligence is a causal predictor of the aforementioned outcomes: when emotional intelligence is improved, individuals present better psychological health (Karahan & Yalçin, 2009; Kotsou et al., 2011; Nelis et al., 2011). Indeed, individuals with high emotional intelligence manage and anticipate better negative or stressful situations. Thus, they are more able and confident to cope with these kinds of situations, protecting them—to some extent—from developing psychological disorders.

3.2 Physical health

Emotional intelligence also seems to be a strong predictor of individuals' physical health. High emotional intelligence intelligence has been related to a series of subjective indicators of physical health. The same meta-analytic investigations presented in point 3.1 also demonstrated the beneficial effects of emotional intelligence on physical health (Martins et al., 2010; Schutte et al., 2007). In these studies, physical health is referred to as psychosomatic indicators such as bodily pain or headaches in these meta-analytic investigations. Objective health indicators corroborated these self-report measures of physical health. More specifically, Mikolajczak et al. (2015) demonstrated, for instance, that individuals with high emotional intelligence predicted the number of doctor consultations, days spent at the hospital, or daily drug consumption. These cross-sectional results were also corroborated with interventional studies that demonstrated that enhancing emotional intelligence decreased objective indicators of physical health such as glycated hemoglobin in diabetic patients (Karahan & Yalçin, 2009) or diurnal cortisol levels in working adults (Kotsou et al., 2011). Hence, emotion—and particularly stress—influences health through a variety of physiological (e.g., sympathetic and neuroendocrine activation) and behavioral pathways (e.g., emotional eating or substance abuse). Managing adaptatively one's emotions may thus lead to a better physical health. Indeed, a recent meta-analysis aimed to understand the variables explaining the relationships between emotional intelligence and physical health (Sarrionandia & Mikolajczak, 2020). In this meta-analysis, the authors showed that emotional intelligence was associated with higher adaptive health behaviors (e.g., higher levels of physical activity, lower levels of substance use) and biological indices (e.g., higher levels of antioxidants, lower levels of blood glucose, lower levels of cortisol). These findings thus indicate the contribution of emotional intelligence as a protective factor of physical health.

3.3 Social relationships

Research on emotional intelligence and social relationships showed that a high level of emotional intelligence facilitates adaptive social relationships at different levels. First, individuals with a high level of emotional intelligence tend to develop and maintain qualitative social relationships (Lopes et al., 2004). Emotionally intelligent individuals were also associated with peer nominations of interpersonal and prosocial tendencies (Lopes et al., 2005). Second, emotional intelligence tends also to be associated with a more qualitative and

larger social network (Austin et al., 2005). Third, emotional intelligence is also associated with a higher level of social network satisfaction (Lopes et al., 2003). Finally, a meta-analysis showed that emotional intelligence was related to romantic relationship satisfaction (Malouff et al., 2014). The individuals' emotional intelligence was also associated with the partner's level of relationship satisfaction. These results are particularly important as social support has been demonstrated as a robust psychosocial predictor of health outcomes and individuals' adaptation to their environment (Uchino et al., 2018). These results thus indicate that emotional intelligence plays a significant role in individuals' adaptation through its influence on social support and relationships.

3.4 Academic and work success

Schools and universities play a considerable role in the development of cognitive skills. They also devote substantial time and resources to enhancing students' social and emotional skills. A recent meta-analysis thus examined the extent to which student emotional intelligence enrolled in primary, secondary, and high school predicted academic performance (MacCann et al., 2019). This meta-analysis showed a correlation of $r = .20$ between emotional intelligence and academic performance. There also was evidence of incremental validity of emotional intelligence over personality.

Workwise, empirical meta-analyses have been accumulated over the last decades, indicating that emotional intelligence was related to job performance, leadership, work attitudes, organizational citizenship behavior, counterproductive behavior, and entrepreneurial intentions. The first meta-analysis by Joseph & Newman (2010) showed through their cascading model of emotional intelligence that self-report emotional intelligence predicted job performance. In 2011, O'Boyle et al. (2011) extended prior research by demonstrating that emotional intelligence predicted job performance over cognitive ability and the Big Five factors of personality. Several years later, Miao and colleagues showed the incremental validity of emotional intelligence over personality traits and cognitive ability with regards to leadership (2018), work attitudes (i.e., job satisfaction, turnover intentions, and organizational commitment, 2017a), organizational citizenship behavior, counterproductive work behaviors and entrepreneurial intentions (2017b; 2018). These findings may be explained by different mechanisms. Indeed, at the intrapersonal level, individuals with high emotional intelligence are more likely to perform during job interviews (Nelis et al., 2011) and manage their emotions better during stressful situations. At the interpersonal level, individuals with high emotional intelligence benefit from a qualitative social environment during stressful and challenging situations.

Table 1. Meta-analytic correlations of emotional intelligence with life outcomes

Outcome	Ability-EI	Self-reported ability EI	Trait-EI
Psychological health			
Subjective well-being (Sánchez-Álvarez, Extremera, & Fernandez-Berrocal, 2016)	.22	.32	.38
Behavioural variables (Sarrionandia et al., 2020)			
Diet	–	–	.20
Physical activity	–	–	.17
Reckless driving	–	–	–.11
Risky sexual behavior	–	–	–.72
Sleep quality	–	–	.36
Social support	–	–	.33
Substance use	–	–	–.10
Biological variables (Sarrionandia et al., 2020)	–	–	
Antioxydants	–	–	.08
Body mass index	–	–	–.07
Atherosclerosis	–	–	–.07
Diastolic blood pressure in challenging situation	–	–	–.12
Blood glucose	–	–	–.75
Heart rate at baseline	–	–	–.02
Heart rate in challeging situation	–	–	–.15
Heart rate variability at baseline	–	–	.18
Heart rate variability in challenging situation	–	–	–.15
Hypothalamic-pituitary-axis activity at baseline	–	–	–.11
Hypothalamic-pituitary-axis in challenging situation (AUCg)	–	–	–.27
Hypothalamic-pituitary-axis in challenging situation (AUCi)	–	–	.04
Parasympathetic nervous system at baseline	–	–	.04
Parasympathetic nervous system in challenging situation	–	–	.02
Sympathetic nervous siystem reactivity in challenging situation	–	–	–.03
Systolic blood pressure in challenging situation	–	–	–.08
Physical health			
Self-report physical health (Schutte, Malouff, Thorsteinsson, Bhullar, & Rooke, 2007)	.11	.32	–
Self-report physical health (Martins, Ramalho, & Morin, 2010)	.17	.34	–
Social relationships			
Romantic relationship satisfaction (Malouff et al., 2014)	–	–	.32
Academic performance			
Academic performance (MacCann et al., 2020)	.24	.12	.19
Workplace outcomes			
Transformational leadership (Harms & Credé, 2010)	.24	–	.66
Workplace performance (Jospeh & Newman, 2010)	.18	.23	.47
Workplace performance (O'Boyle, Humphrey, Pollack, Hawver, & Story, 2011)	.24	.30	.28
Organizational citizenship behaviors (Miao et al., 2017)	.17	.57	.48
Counter-productive workplace behaviors (Miao et al., 2017)	.01	–.38	–.42
Work attitudes (Miao et al., 2017)			
Job satisfaction	.08	.32	.39
Organizational commitment	–	–	.43
Turnover intentions	–	–.33	–
Entrepreneurial intentions (Miao et al., 2018)	–	.28	.17

Note. EI = emotional intelligence.

3.5 What about career development?

As illustrated in Table 1, emotional intelligence has been extensively investigated in many life domains. Overall, the literature indicates that emotional intelligence is a strong predictor of individuals' adaptation. Recently, emotional intelligence has also attracted

scholars' interest in career literature. Indeed, as vocational transitions represent important events that may give rise to substantial emotional reactions, the ability to identify and manage one's emotions represents an important resource for individuals to navigate in their career development. According to scholars, emotionally intelligent individuals better plan and anticipate their professional goals, fit into new organizational culture, develop and maintain positive social relationships, and anticipate the emotional consequences of their career choices, changes, and career transitions (Potgieter, 2014). The objective of the current section is to propose a review of the role of emotional intelligence with regard to a set of career-related outcomes and to highlight the underlying process that may explain these relationships. This review is important for at least two reasons. First, it offers the possibility to examine the main investigations between emotional intelligence and career-related outcomes. Second, it will subsequently allow us to examine the robustness of these research findings, which will be the focus of **Chapter 2**.

The first major variable related to emotional intelligence in the career and vocational literature is the career decision processes. Career decisions represent complex and important processes that individuals have to realize during their career (Kulcsár et al., 2020). Accordingly, Emmerling and Cherniss published in 2003 a first review article in which they emphasized the importance of emotion and emotional intelligence in decision-making processes. They argue that individuals with a high level of emotional intelligence are more aware and able to deal with their emotions during important career decision processes. This article was the first opening in the literature. Although these authors do not empirically test their assumptions, Di Fabio and Palazzeschi (2008) showed—a few years later—in a cross-sectional study among wage-earning apprentices a negative relationship between emotional intelligence and the three dimensions of the **career decision difficulties** questionnaire: lack of readiness, lack of information, and inconsistent information. The authors highlighted that individuals with a higher level of emotional intelligence might encounter fewer difficulties in the decisional process because they anticipate their choice better and are better informed about the world of work or how to get some information. In the same vein, Dahl et al. (2008) showed a negative relationship between emotional intelligence and negative career thoughts (i.e., decision-making confusion, commitment anxiety, and external conflict). They also showed that the intrapersonal dimension of emotional intelligence was the best predictor of these relationships. In the same vein, two authors demonstrated the incremental variance of emotional intelligence over personality traits with regard to career decision difficulties (Di Fabio & Palazzeschi, 2009). This article was an important contribution as emotional intelligence has previously been criticized for its overlap with other personality constructs. Extending these results, Di Fabio and Bluestein (2010) showed that emotional intelligence predicted **decisional conflict styles** (i.e., avoidance, vigilance, procrastination, hypervigilance). More specifically, the intrapersonal and interpersonal dimensions of emotional intelligence predicted negatively nonadaptive styles, whereas adaptability[1] was the best predictor of vigilance. These results were corroborated by an experimental study in

[1] The term adaptability has not to be counfounded with career adaptability. The term adaptability developed in the EQ-i (Bar-On, 2006) refers to a general ability to adjust one's feelings to new situation.

which Di Fabio and Kenny (2011) showed that a structured training in emotional intelligence decreased levels of indecisiveness and career decision difficulties among high school students. This study was also an important contribution to the field as it demonstrated the malleability and the possibility of enhancing emotional intelligence, as well as the causality from emotional intelligence to career decision-making processes. Additional cross-sectional studies showed that emotional intelligence negatively predicted career decision-making difficulties over personality traits (Di Fabio et al., 2012). In 2013, Di Fabio and colleagues showed that emotional intelligence was more related to career decision-making difficulties, whereas career indecisiveness was more related to personality traits such as emotional stability. Di Fabio and Saklofske (2014) extended prior results by showing that self-report emotional intelligence predicted career indecision and indecisiveness over intelligence, Big 5 personality traits, and ability-based emotional intelligence.

Another important variable related to career decision-making processes that have been related to emotional intelligence is **career decision-making self-efficacy**, defined as the individuals' confidence in their ability to complete the required tasks to realize career decisions (Taylor & Betz, 1983). Accordingly, Brown et al. (2003) first showed that emotional intelligence was significantly associated with career decision self-efficacy. Di Fabio and Saklofske (2014) also demonstrated a significant incremental variance of emotional intelligence beyond personality traits in association with career decision-making self-efficacy among a sample of Italian high school students. Jiang (2014, 2016) corroborated the same results among Chinese and Korean students. More recently, Santos et al. (2018) demonstrated the mediating role of career decision-making self-efficacy on the relationships between emotional intelligence and career decision-making difficulties. These studies inform us that emotionally intelligent individuals tend to be more confident in their ability to make career decisions. This can be explained by the fact that they are more aware of their emotions and career needs. However, all of the present studies were mainly cross-sectional, limiting our ability to determine the causal inference between these two variables.

The second main variable related to emotional intelligence is **career adaptability**. Career adaptability is defined as a set of self-regulatory resources that help individuals anticipate and cope with work and career-related challenges, usually measured and composed of four competencies: concern, control, curiosity, and confidence (Savickas & Porfeli, 2012). The first article demonstrating a relationship between emotional intelligence and career adaptability was published by Cotzee and Harry (2014) in a cross-sectional research study among a call-center agents sample. According to these authors, individuals who present high levels of ability to manage emotional information may enhance their ability to plan their vocational future, take responsibility for their career, explore their environment but also lead to a higher level of confidence in managing career-related difficulties. Over recent years, compelling evidence corroborates this cross-sectional study by showing the mediating role of career adaptability through the relationships between emotional intelligence and academic satisfaction (Celik & Storme, 2018), academic engagement (Merino-Tejedor et al., 2018), self-perceived employability, and career indecision (Udayar et al., 2018), and job search success (Mittal, 2020). A recent meta-analysis gathering eight studies also showed the

positive relationship between emotional intelligence and career adaptability (r = .446, Vashisht et al., 2021). These results are important as career adaptability has been demonstrated as an important predictor of adaptation results in the career domain (Rudolph et al., 2017). However, most of these findings were cross-sectional, hampering our ability to draw causal inferences between emotional intelligence and career adaptability.

Brown et al. (2003) have also shown a positive relationship between emotional intelligence and **vocational exploration and commitment**, that is, behavior and cognitions that offer the possibility to access to information in one's environment (Blustein, 1989). According to Brown et al. (2003), individuals who are more able to understand and regulate one's emotions are more committed because they can better use their emotions to guide their thoughts and actions with regard to career tasks.

An increasing corpus of research has also shown the relationship between emotional intelligence and **employability**. Indeed, it has been demonstrated that individuals who have difficulties managing their emotions are more than twice likely to be unemployed (Mikolajczak, Luminet, et al., 2007). Hence, individuals who have difficulties managing their emotions may also have difficulties finding a job and remaining employed. Other studies, such as Coetzee and Beukes (2010), showed the predictive effect of emotional intelligence on students' employability scores in the context of the school-to-work transition. Coetzee and Schreuder (2011) corroborated these results by showing that emotional intelligence predicted employability satisfaction (i.e., self-perceived level of satisfaction with regard to their employability). Di Fabio and Kenny (2015) also showed that emotional intelligence was positively associated with self-perceived employability among a sample of teachers. As previously developed, Udayar (2018) also showed the predictive effect of emotional intelligence on self-perceived employability through the mediating role of career adaptability. These cross-sectional studies have been corroborated by interventional studies in which authors showed that a structured training in emotional intelligence enhanced the objective level of employability among students (Nelis et al., 2011) and unemployed individuals (Hodzic et al., 2015). These two interventional studies are important to the field as they showed that (1) it is possible to enhance employability among specific samples and (2) improving emotional intelligence enhances employability levels. More specifically, Nelis showed that students who have trained their emotional intelligence managed better their stress during job interviews after the intervention, allowing them to respond to recruiters' questions in a more structured fashion. Furthermore, Hodzic et al. (2015) demonstrated the efficiency of the intervention among unemployed participants. It thus brings robust evidence that emotional intelligence contributes to individuals' job search processes.

Regarding job search process, recent research has demonstrated that emotional intelligence predicted active **job search behaviors** through the mediating effect on **job search self-efficacy** (Nieto-Flores et al., 2019). In the same vein, another study showed the predictive effect of emotion regulation on employment status (i.e., current job, salary, and contract type) via job search self-efficacy (Urquijo et al., 2019). Recent studies have also shown that emotional intelligence was a predictor of students' **job search success** (i.e., the number of times when the first offer was received, the number of job offers received) through

the mediating role of career adaptability (Mittal, 2020). These results stem from the hypothesis that individuals with high emotional intelligence tend to be more aware of their career needs but also better regulate their efforts during emotional events such as job search periods. These assumptions are aligned with the self-regulation theory developed by Kanfer et al. (2001), arguing that individuals regulate their cognition, emotions, and behaviors to find and attain personal and career goals.

From a macro perspective, several authors have also demonstrated a positive relationship between emotional intelligence and **career success**. Pool and Qualter (2013) showed a positive relationship between emotional intelligence and **career satisfaction**. De Haro Garcia and Costa (2014) extended these results by showing in a longitudinal study that emotional intelligence predicted career satisfaction and objective career success indicators (i.e., **salary**) over and above cognitive intelligence and personality traits. Sultana et al. (Sultana et al., 2016) also showed a positive relationship between emotional intelligence and objective (i.e., salary) and subjective (i.e., career satisfaction) career success. In another 12 years longitudinal study, Rode et al. (2017) showed that emotional intelligence has a significant and positive effect on subsequent salary levels among alumni respondents. A recent cross-sectional study has corroborated these results (Urquijo et al., 2019). Different authors suggest that individuals with higher emotional intelligence are less anxious during career decision-making processes, leading to more adaptive career-related choices (Emmerling & Cherniss, 2003).

4. Concluding remarks

This chapter allowed us to better understand how the concept of emotional intelligence emerged in the literature. Indeed, this concept has given rise to important debates and a plethora of different approaches we described. First, the ability approach considers emotional intelligence as a set of abilities encompassing a new form of intelligence that can be measured through performance-based tasks. The second, the trait approach, considers emotional intelligence as a set of adaptive emotion-related traits that can be measured through self-report-based questionnaires. Third, we also presented the mixed approach, which considers emotional intelligence as a mix of non-cognitive abilities and traits, that is a form of extension of the trait-emotional intelligence approach. Finally, we also presented the integrative approach, which aims to integrate the features of the approaches mentioned above. Then, we delineated how these approaches contributed to the development of a plethora of theoretical models. We thus developed the four-branch model of Mayer and Salovey (1999). We also presented the trait-emotional intelligence model of Petrides (2001) and the mixed models of Bar-On (2006) and Goleman (2011). Finally, we closed this section by presenting the multi-level developmental investment model (Zeidner et al., 2003), the dual-process framework (Fiori, 2009), the tripartite model (Mikolajczak et al., 2009), the cascading model (Joseph & Newman, 2011), the PAT (Vesely-Maillefer et al., 2018), and the process model of dynamic self- and other-focused emotional intelligence (Pekaar et al., 2020).

Together, we then proposed to define emotional intelligence as a set of knowledge, ability, or trait to identify effectively, understand, express, regulate and use emotions of the self and others in order to regulate (social) behavior, particularly in emotional situations.

Next, we proposed a state-of-the-art emotional intelligence in individuals' life spheres. Accordingly, we delineated the beneficial impact of emotional intelligence on psychological, physical, social, educational, and work adjustment. In doing so, we showed how emotional intelligence is now considered a crucial variable in individuals' adaptive functioning.

Finally, we reviewed the role of emotional intelligence in career development by demonstrating the positive relationships between emotional intelligence and career decision-making processes, career adaptability, employability, career success and vocational commitment, and job search processes. We also developed how emotional intelligence may be considered as a predictor of these outcomes. However, we underlined some limitations in the current research findings. Hence, it allows us to move to **Chapter 2**, which aims to delineate our original review of the main limitations in the study of emotional intelligence in career development.

Chapter 2

How do we know what we know?

Limitations in the study of emotional intelligence in career development

This chapter provides an original literature review of the main limitations in the study of emotional intelligence in career development. We focus here on the extent to which researchers have conceptualized, conducted, reported, and applied research and methodologies to the concept of emotional intelligence in the career and vocational literature. Hence, we discuss seven main limitations: (1) the lack of linkages between theory and hypotheses, (2) the limitations of research study designs, (3) the limitations in statistical models, (4) the lack of control variables, (5) the overreliance on variable-centered approaches, (6) the paucity of justification and inadequacy with regard to measures and measurement models, (7) the common method bias, (8) the limitations on sample and career contexts, and (9) the limitations on integration efforts. Finally, we close this chapter by proposing different recommendations to address these issues.

Chapter 2

How do we know what we know?

Limitations in the investigation of emotional intelligence in career development

The scientific method consists of the use of procedures designed to show not that our predictions and hypotheses are right, but they might be wrong.

Carol Tavris and Elliot Aronson

1. Introduction

As pointed out in **Chapter 1**, research has adopted various conceptualizations and operationalizations of the emotional intelligence construct that has given rise to important critiques (e.g., Locke, 2003). Although the increasing number of studies supports the beneficial role of emotional intelligence in career development, it is also crucial to examine how we know what we know about these research findings. Over recent years, increasing attention has been devoted to extending confidence in the research process results. The "*credibility revolution*" has been developed to refer to both the problems and the solutions researchers have proposed to improve science's credibility (Vazire, 2018). According to Vazire (2018), different main changes have emerged to bolster the credibility of research findings. First, scholars encourage the preregistration of new studies regarding introduction, hypotheses, and methods before collecting data to avoid data dredging. Second, scholars also foster the necessity of direct replication of finding effects. Finally, scholars have highlighted the proposal of raising standards in terms of the quantity and quality of evidence, such as adjusting the statistical significance to .005 and justifying the generalizations and the anticipated limits associated with the authors' generalizations (i.e., constraints on generality; Simons et al., 2017). Based on that calling, Rudolph (2021) proposed a series of recommendations to bolster the credibility of research findings in the vocational and career literature at the theoretical, methodological, and practical levels. Aligning with these recent recommendations and based on an original literature review, we propose in the current chapter seven limitations and recommendations to develop more rigorous and reproducible research findings on the role of emotional intelligence in career development.

2. Limitations of emotional intelligence investigation in career development

Given the beneficial effects of emotional intelligence on individuals' adaptation, an increasing number of studies have been developed over the past three decades with regard to career development. Accordingly, we reviewed these studies in **Chapter 1**. However, a number of authors have criticized the construct of emotional intelligence. Indeed, some authors have highlighted some problems in the changing nature with regard to the definition of the construct, its measurement, and the overlap with personality constructs such as emotional stability or the wide variety of dimensions (Locke, 2005). In parallel, recent position papers proposed a series of recommendations to enhance credibility in research and vocational behavior research (Antonakis, 2017; Rudolph, 2021). Based on these critiques, we realized a literature review that aimed to examine the quality of research findings on the role of emotional intelligence in career development. Accordingly, this chapter delineates seven limitations: (1) the lack of linkages between theory and hypotheses, (2) the limitations in the research study designs, (3) the overreliance on variable-centered approaches, (4) the lack of of control variables, (5) the limitations in statistical models, (6) the paucity of justification and inadequacy with regard to measurement, (7) the common method variance (8) the limitations of samples and career contexts, and (9) the lack of integrative work. Table 2 synthesizes the limitations and brings some recommendations for each of the proposed limitations.

2.1 Lack of linkages between theory and hypotheses

Over recent years, an increasing obsession with proposing novel theoretical contributions has dominated organizational and career sciences (i.e., "theorrhea"; see Antonakis, 2017). However, this trend may lead to the proliferation of new theoretical models that are not directly—and sometimes rarely—tested. These practices tend to develop so-called "frankentheorizing", referring to an aggregate of well-founded theories without an explicit integration between them and the hypotheses (Rudolph, 2021). Developing new theoretical models is probably important to account for career and vocational processes. However, the problem with this obsession is the progressive gap and absence of linkages between the theory, the hypotheses, and the empirical findings.

Research in emotional intelligence in the context of career development can also be criticized for the lack of integration between theory and hypotheses. The first critique relates to the vague justifications of how emotional intelligence could predict career-related outcomes. Specifically, some authors explained that emotional intelligence is an adaptive resource in individuals' development because prior research showed that it predicted psychological, social, and work adjustment. However, there is a lack of clear rationale with regard to the underlying mechanism that could explain these relationships. This is unfortunate as growing attention and recommendations have been pointed out over recent years to understanding the underlying processes between emotional intelligence and individuals' adaptation outcomes (e.g., Peña-Sarrionandia et al., 2015). In addition, some researchers

considered that it is crucial to test the relationships between emotional intelligence and career-related outcomes because no research has already tested these relationships. However, Rudolph (2021) emphasized that the novelty of a construct in any new research is not a strong justification for conducting research.

The second main critique relates to the different theoretical models that have been proposed to explain how emotional intelligence could play a beneficial role with regard to individuals' career development. First, a number of studies proposed the action theory approach developed by Young et al. (1996). This approach posits that emotions (1) motivate action, (2) regulate actions, and (3) offer the possibility to access to and the development of self-narratives about career choice. These authors also highlight that being aware of one's emotions plays an important role in the development of one's career trajectories. This theory has, however, never been tested. In the same vein, Emmerling and Cherniss (2003) proposed a review of how emotion and emotional intelligence are related to the career choice processes. Even if these two examples of "models" proposed theoretical mechanisms to understand the role of emotional intelligence in career development, they relied more upon verbal theories (e.g., Harris, 1976) rather than formalized theories, hampering the rationale and validity of research findings.

In contrast to the two first critiques that delineate the lack of clear theoretical rationale of empirical evidence with regard to the theoretical models, another promising model has been proposed to understand the role of emotional intelligence in career and vocational processes: the career construction model, depicted in Figure 6 (Savickas, 2005). This model posits that individuals first differ in their willingness and readiness to face unfamiliar and complex vocational- and career-related challenges (i.e., Adaptivity), which influences their ability to manage these challenges (i.e., Adaptability, also labeled as career adaptability). In this model, emotional intelligence is considered as a psychological trait. On the other hand, career adaptability has been defined as a psychosocial resource that helps individuals to cope with the tasks, transitions, and traumas related to career challenges (Hirschi et al., 2015). These career adapt-abilities thus influence the development of self-beliefs and behaviors (i.e., adapting responses) that tackle changing environmental demands and, in the end, influence career-related adaptation outcomes (i.e., adaptation results; Savickas, 2013; Savickas & Porfeli, 2012). As developed in **Chapter 1** and in contrast to the other theoretical models, different authors empirically examined this model. More specifically, some authors examined the mediating effect of career adaptability (i.e., Adaptability resources) through the relationships between emotional intelligence (i.e., Adaptivity) and academic satisfaction, academic engagement, perceived employability, and career indecision (i.e., Adaptation results; Celik & Storme, 2018; Merino-Tejedor et al., 2018; Udayar et al., 2018). A burgeoning literature tends progressively to provide empirical evidence with regard to this model, as shown by the recent meta-analyses of Rudolph and colleagues (Rudolph, Lavigne, & Zacher, 2017; Rudolph, Lavigne, Katz, et al., 2017).

To sum up, although these theoretical models bring interesting contributions, we think there is a necessity to develop a more convincing overarching narrative on how emotional intelligence could predict career-related outcomes and, more generally, individuals' career

development. To propose more credible research findings on the link between emotional intelligence and career-related processes, we think that there is a need for research to (1) better articulate the relationships between theories, hypotheses, and empirical findings, (2) test and extend our comprehension of theoretical models such as the career construction model, and (3) avoid "frankentheorizing."

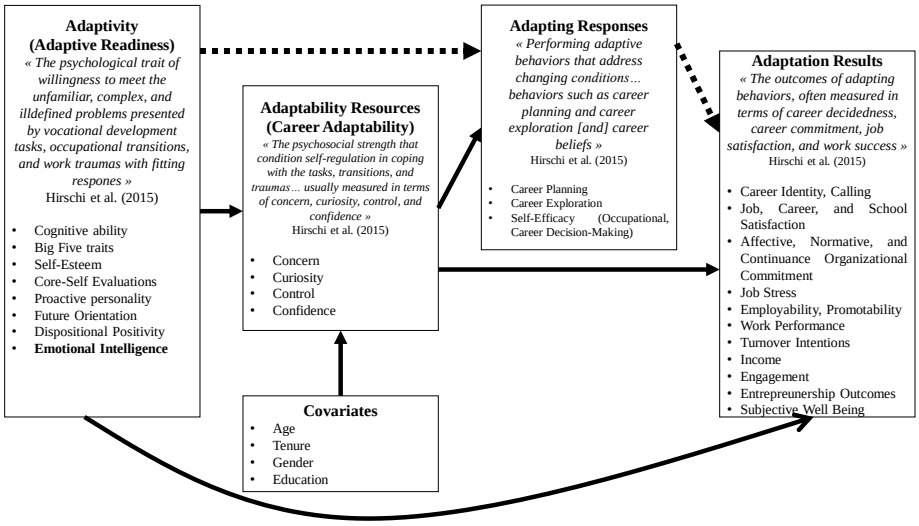


Figure 6. Career construction model of adaptation
(adapted from Rudolph et al., 2017, p. 19)

2.2 Limitations of research study designs

The researchers' choices with regard to research study designs may significantly influence the conclusion that can be made with regard to research findings. Indeed, most studies that examined the role of emotional intelligence in career development relied on **cross-sectional** research designs. This observation is aligned with the recent review of Akkermans et al. (2021) that stressed the overuse of cross-sectional research designs in careers science. In spite of the contribution of these research designs to the literature, a large number of methodologists have stressed the limitations of cross-sectional designs, such as the difficulty of drawing causal inferences between variables (e.g., endogeneity bias, see Antonakis et al., 2010; Rindfleisch et al., 2008; Schmitt, 1997). This is unfortunate as the majority of scientific articles claim the causal prediction from emotional intelligence to career-related outcomes. Our knowledge about the role of emotional intelligence in career development is thus limited in terms of causality and directionality. Accordingly, Rudolph (2021) claims the necessity to triangulate different sources of research designs such as cross-sectional, longitudinal, and experimental methodologies. Hence, a series of studies relied upon longitudinal studies to examine the role of emotional intelligence on objective (e.g., salary) and subjective (i.e., career satisfaction) career success. It is important to note that longitudinal designs suffer from

the same caveats as cross-sectional data in terms of causality inferences. Thus, in our literature review, we found in some emotional intelligence longitudinal studies affirmation such as "*the present research was based on a longitudinal design data; thus, conclusions regarding possible causal relationships can be made."* (de Haro Garcia & Casto, 2014, p. 724). We think that claiming a causal prediction based on a longitudinal design is risky. That being said, longitudinal designs can determine the directionality, development over time, and a more accurate magnitude of effect size between variables. In the same vein, cross-sectional research designs may be valuable when researchers aim to compare different groups or examine "stable" variables such as personality (Akkermans et al., 2021).

In order to address these caveats, the randomized control trial has been developed as the main recommended method and is considered as the “gold standard” in terms of causality inference. By using a control group and an experimental group, it is thus possible to determine whether the development of the effect is due to the intervention. However, only a handful of experimental studies using randomized control trials to investigate emotional intelligence in career development have been conducted. To date, Di Fabio et al. (2011) showed that emotional intelligence training decreased career indecisiveness and career decision-making difficulties in the training group when compared to the control group. In addition, Nelis et al. (2011) also showed that emotional intelligence training increased objective employability among undergraduate students. In the same vein, Hodzic (2015) showed that emotional intelligence training increased self-perceived employability among unemployed adults. However, this last study did not report the effect of the intervention on the development of emotional intelligence. To the best of our knowledge, we are unaware of other interventional studies with regard to emotional intelligence in career development. To sum up, we think that cross-sectional research offers important information (for a review, see Spector, 2019), but researchers should triangulate the various sources of empirical evidence (e.g., cross-sectional + longitudinal; experimental) to enrich and replicate the stability and credibility of research findings (Kuorikoski & Marchionni, 2016).

2.3 Limitations in statistical models

Although research design influences the quality of research findings, it is also essential to consider which statistical models are performed. In line with the previous points, Rudolph (2021) emphasized the nefarious practice that aims to draw causal conclusions with cross-sectional data. Several authors have also clearly stressed that it is not possible to identify causal models with cross-sectional data (e.g., Kline, 2015; Maxwell et al., 2011). Indeed, most research on emotional intelligence relied upon cross-sectional designs using regression or correlation analyses (e.g., Dahl et al., 2008; Di Fabio & Palazzeschi, 2008, 2009). A series of studies has also performed mediation models to test the career construction theory (Celik & Storme, 2018; Merino-Tejedor et al., 2018; Udayar et al., 2018). More specifically, they tested how career adaptability mediated the relationship between emotional intelligence and career-related outcomes.

However, testing a mediation model based on a cross-sectional design does not inform us about the processes that are presumed to test. According to Rudolph (2021), testing the

incremental validity of a concept (i.e., emotional intelligence in the present case) with regard to personality traits or cognitive intelligence is probably more useful than testing causal relationships with mediation models. Such analyses have been performed with regard to career-decision making difficulties and career success but are still scarce (de Haro García & Costa, 2014; Di Fabio et al., 2012; Di Fabio & Palazzeschi, 2009).

2.4 The lack of control variables

In line with the last paragraph, we observed that most studies have investigated the predictive effect of emotional intelligence on career-related outcomes, but very few studies have examined the incremental validity while controlling for personality constructs or cognitive intelligence. In other words, few studies have examined the added value of emotional intelligence compared to other personality and intelligence constructs in the career literature. Even if some meta-analysis has shown the incremental validity of emotional intelligence (Andrei et al., 2016), it is still unfortunate as a series of authors have questioned the overall utility of emotional intelligence (e.g., Conte, 2005; Van Rooy, Alonso, & Viswesvaran, 2005).

To date, a handful of research has shown the importance of controlling for personality constructs and cognitive intelligence when researchers investigate the predictive role of emotional intelligence. For example, Di Fabio and Palazzeschi (2009) have demonstrated the incremental and predictive validity of emotional intelligence on career decision difficulties over and above the five dimensions of the NEO-PI-R (Costa & McCrae, 1992). In the same vein, Di Fabio et al. (2012) corroborated the same results by showing the incremental validity of emotional intelligence over and above personality traits (i.e., Big Five dimensions) and core self-evaluation on career decision-making difficulties. Other scholars have also shown the incremental and predictive validity of emotional intelligence over and above mental ability and personality traits (i.e., Big Five dimensions) on career satisfaction (de Haro García & Costa, 2014). Di Fabio and Saklofske (2014) also showed the added value of trait emotional intelligence while controlling for the predictive effects of fluid intelligence, Big Five personality traits, and ability-based emotional intelligence. Finally, Udayar et al. (2018) also demonstrated the predictive effect of emotional intelligence on self-perceived employability and career indecision through the mediation effect of career adaptability after controlling for sex, intelligence, and personality traits. Based on these promising results, we think that there is a necessity to examine the extent to which emotional intelligence predicts other career-related outcomes over and above personality constructs and cognitive intelligence for different reasons. First, these results demonstrate the importance and the necessity of investigating emotional intelligence in the field of career development. Second, it demonstrates the distinction between emotional intelligence and other close constructs (e.g., Big Five dimensions, core self-evaluation). Third, it is possible that the incremental validity of emotional intelligence–and its dimensions–depends on the nature of the career-related outcomes investigated. Finally, by using control variables, it is thus possible to examine the differential effects between emotional dimensions and also between ability emotional intelligence and trait emotional intelligence.

2.5 The overreliance on variable-centered approaches

Despite the important body of research on emotional intelligence, this concept has largely been investigated through variable-centered approaches. Indeed, in the career literature, these approaches and research have primarily examined the on-average relationships between emotional intelligence (i.e., low vs. high emotional intelligence level) and career-related outcomes (e.g., career adaptability) within a given sample. However, these approaches did not inform us how the dimensions of emotional intelligence (e.g., intrapersonal and interpersonal) interact and co-occur together. Thus, it is possible that two individuals with the same level of emotional intelligence may present two distinct profiles. For instance, one may show a high level of intrapersonal emotional intelligence but a low level of interpersonal emotional intelligence, and vice-versa. Another limit of variable-centered approaches is the impossibility of considering that some emotional intelligence dimensions might simultaneously depend on other emotional dimensions. Indeed, Joseph and Newman (2010) demonstrated in their meta-analysis that identifying one's emotions predict the ability to regulate one's emotions. Finally, variable-centered approaches mainly consider a linear relationship between emotional intelligence and career-related outcomes. However, research in other fields has shown that having high emotional intelligence awareness with low emotion regulation abilities may lead individuals to experience more stress (Ciarrochi et al., 2002). Indeed, being conscious of one's emotion without the ability to regulate it may lead to psychological discomfort and anxiety disorders (Extremera & Fernández-berrocal, 2006).

Conversely, the person-centered approach aims to address the aforementioned issues by identifying several subgroups of individuals that present distinct patterns of combinations (i.e., profiles) of emotional intelligence dimensions. Using a person-centered approach is relevant for at least two reasons. First, it offers a fine-grained picture of emotional intelligence by examining how the dimensions co-occurred. By doing so, exploring the quantitative and qualitative distinction between emotional intelligence profiles may offer the possibility to underline how individuals differ in their ability to identify, understand and manage one's and others' emotions. Second, it has important implications for practitioners. Indeed, by examining how emotional intelligence profiles predict career-related outcomes, it is thus possible to detect at-risk profiles. As a result, tailor-made interventions can be developed to respond to specific clients' emotional difficulties.

2.6 A paucity of justification and inadequacy with regard to measurement properties

The measure and measurement models used to examine the effect of emotional intelligence on career-related outcomes present significant limitations that may put in peril the credibility of research findings. Indeed, in line with the overuse of cross-sectional research design, many studies on emotional intelligence in career development relied upon observed composites, that is, the summed or average items score. These composites were used in correlation, regression, or mediation analyses. Simultaneously, these studies mainly reported reliability and validity indices such as Cronbach's alpha as evidence of good psychometric properties. However, avoiding controlling for the measurement error may lead

to significant bias in the statistical parameter estimates. Measurement error can come from various sources, such as random response error (e.g., distractions, arbitrary choices between two scale points), transcription errors, fatigue, or environmental effects (Wiernik & Dahlke, 2020). Prior research has documented the influence of omitting measurement error (Cole & Preacher, 2014), encouraging researchers to use structural equation modeling wherever possible. According to Rudolph (2021), it is important to be careful about the measure we use. Indeed, this author mentioned the danger of "panthom validation," referring to the practice of using unvalidated or questionable measures across studies and justifying the use of such measures via the number of citations of such measures in past research (Friedberg, 2019). That being said, a series of recent research has relied upon the structural equation model framework to investigate the role of emotional intelligence in career development (e.g., Udayar et al., 2018; Santos et al., 2018). However, as the majority of these studies relied upon cross-sectional research design, the question of measurement invariance has not been tackled yet. In this respect, measurement invariance offers the possibility to examine whether the measurement properties are equivalent across different groups or time points investigation (Millsap, 2012).

Altogether, these investigations have given rise to other questions with regard to emotional intelligence, such as the issue of multidimensionality. Indeed, some studies have shown that the global score of emotional intelligence was a strong predictor of career-related outcomes such as career decision processes (Di Fabio et al., 2013), employability (Nelis et al., 2011), or career adaptability (Celik & Storme, 2018; Fiori et al., 2021; Merino-Tejedor et al., 2018). In parallel, scholars have also demonstrated the predictive effect of emotional intelligence dimensions (self-emotion appraisal or intrapersonal emotion regulation) on career decision-making processes (Santos et al., 2018) and career success (de Haro García & Costa, 2014). These practices are probably due to the high number of different models of emotional intelligence. However, although some studies used confirmatory factor analyses, these studies do not justify why they use the global dimension or the specific dimensions of emotional intelligence. It thus remains an explicit limitation about the multidimensional nature of emotional intelligence in career development.

In sum, we delineate some inconsistencies in the quality of measures, measurement models, and the investigation of emotional intelligence as a general or multidimensional concept.

2.7 The common method bias

Most scholars recognize the common method variance–also called common method bias– as an important issue in behavioral research. According to Fiske (1982), method variance refers to the variance that is attributable to the measurement method rather than the construct of interest. The term method refers to the form of measurement at different levels of abstraction, such as the content of specific items, scale type, response format, and the general context (Fiske, 1982, pp. 81– 84). At a more abstract level, method effects might be interpreted in terms of response biases such as halo effects, social desirability, acquiescence, leniency effects, or yea- and nay-saying (p. 426). Thus, common method bias arises when

researchers rely upon the same measurement source (Antonakis et al., 2010). A simple example is when a participant report via self-report measures their level of emotional intelligence (predictor) and level of career satisfaction (criterion).

Regarding the study of emotional intelligence in the career literature, we observed that most studies mainly relied on self-report measures of emotional intelligence, leading to potential common method bias (e.g., social desirability). To the best of our knowledge, a handful of research has investigated different kinds of measures of emotional intelligence on career-related outcomes by examining the incremental validity of trait emotional intelligence over ability emotional intelligence (see point 2.4; Di Fabio & Saklofske, 2014). As emotional intelligence encompasses different components (i.e., knowledge, abilities, trait), it is crucial to determine the differential effects of each of the components but also reduce the potential common method variance such as social desirability. According to Cooper et al. (2020), a series of propositions have been developed to address the common method variance that occurs from self-report measures in career sciences. First, the authors suggest realizing a temporal delay between the independent and dependent measures. By using this procedure, it is possible to reduce the correlations by 30% (Johnson et al., 2011). Second, it is recommended to collect data from multiple sources of measures. Combining self-report and performance-based measures may be relevant regarding the construct of emotional intelligence. Third, using experimental research designs can also decrease common method variance. This recommendation is in line with point 2.2, in which we develop the necessity to develop more randomized control trials to test the effectiveness of career-based interventions. Finally, it is also possible to adopt statistical remedies such as modeling method factors to control for potential method biases.

2.8 Limitations on sample and transition contexts

A recent mapping review noticed that the majority of studies in career science have relied upon student and young adult samples such as college students, undergraduate students, and sophomores (Akkermans, I.S.G. Lee, et al., 2021). We drew the same conclusion with regard to the study of emotional intelligence in the career literature. Although this sample has several advantages (e.g., easy to obtain, quickly surveyed), most studies do not provide a rationale for using it. Indeed, the nature of the samples can have an essential influence on how researchers may generalize their results for various reasons. Range variation, also labeled selection bias or collider bias, is one example of such a statistical artifact (Elwert & Winship, 2014). Range variation occurs when the variance of a variable in a given sample is unrepresentative with regard to the variance of that variable in the population of interest. For example, researchers might be decided to investigate the relationship between emotional intelligence and career satisfaction. One study using a heterogeneous sample of workers working in a wide range of different organizations might observe a high correlation level, whereas another study using a sample of young workers could find a low or negative relationship. Thus, this inconsistent result is likely due to the second sample. Hence, the second sample might be more restricted regarding career satisfaction and emotional

intelligence levels than the first sample. This example is a form of statistical artifact, so-called range variation.

Accordingly, scholars have distinguished two forms of range variation: range restriction and range enhancement. On the one hand, range restriction occurs when the variance is lower in a sample than the population of interest (i.e., underrepresented distribution). On the other hand, range enhancement occurs when the variance is larger in a sample than the population of interest (Hunter & Schmidt, 2004).

Indeed, Rudolph (2021) warned about the tendency to recruit participants from crowded sources (e.g., MTurk; Matsakis, 2016; Moss & Litman, 2018) and convenient samples (e.g., Western, educated, industrialized, rich, and democratic; WEIRD; Henrich et al., 2010). A salient example with regard to emotional intelligence is a study on career success (de Haro Garcia & Costa, 2014). In this study, the authors investigated whether emotional intelligence predicted career success. This study was conducted among 130 university graduates. They concluded that emotional intelligence predicted career success over personality traits. From our perspective, investigating career satisfaction among young graduates may hamper the generalizability of research findings. In addition, the majority of research investigating the link between emotional intelligence and career decision-making self-efficacy relied upon student samples. On the one hand, investigating career decision processes among students is relevant due to the challenges they are facing. On the other hand, claiming to investigate career development processes only on student samples is a clear limitation or even tricky. That being said, some existing interesting findings have been made on unemployed adults (Hodzic et al., 2015) and black call center agents (Coetzee & Harry, 2014).

Another important limitation is the context in which studies were conducted. Actually, Sullivan and Baruch (2009) defined a career as *an individual's work-related and other relevant experiences, both inside and outside of organizations, that form a unique pattern over the individual's life span* (p. 1543). Indeed, it thus encompasses vocational and career transitions and how individuals appraise career events, career alternatives, and career outcomes. In the same vein, a career refers to a sequence of an individual's work experiences that unfold over time (Arthur et al., 1989). Although researchers investigated the role of emotional intelligence with regard to career-related outcomes, we observed that most studies omitted to specify the career context in which they conducted their surveys and the definitions mentioned above. As an exception, Coetzee and Beukes (2010) investigated the role of emotional intelligence with regard to employability at the prospect of the school-to-work transition. Hodzic et al. (2015) also investigated the role of emotional intelligence in the context of unemployment. Overall, we lack empirical evidence with regard to how individuals may benefit from emotional intelligence at the prospect of or during challenging career events. It is unfortunate given the theoretical assumption that emotional intelligence would be a self-regulatory resource that may be activated to help individuals cope with upcoming or during career-related challenges (Rossier, 2015).

According to Rudolph (2021), we think that there is a necessity to develop "high-*n*" studies based on meaningful samples, multiple samples, and various research study designs.

2.9 Limitations on integration

Failures of replication have been a longstanding focus and debate in the scientific community. Indeed, according to Klein et al. (2018), "*there is accumulating evidence that replication of published effects is less frequent than might be expected, and that replication effect sizes are typically smaller than original effect sizes*" (p. 447). As developed earlier, replicability is one of the core indicators of credibility. Additionally, integrating and critically examining the existing literature is crucial at the theoretical, conceptual, and practical levels. Indeed, Rudolph (2021) supports the importance of understanding "*what works*" and "*what does not.*" Accordingly, many high-quality journals focus on the novelty, innovation, and interest of research findings (C. C. Miller & Bamberger, 2016; Nosek et al., 2012). Hence, there is a tendency and pressure to develop new concepts and constructs, as discussed by the "neophilia" metaphor of Antonakis (2017). Replication efforts and non-significant results are thus often neglected. As developed by Gerber and Malhotra (2008), "*the probability that a result is published depends on the estimates produced by the study, holding the methodological quality of the study fixed*" (p. 4). Such practices thus lead to the problem of publication bias. However, researchers have a lot to learn from null results and replication.

Regarding the study of emotional intelligence in career development, an increasing interest has been devoted to replicating the results on the link between emotional intelligence and two important career-related outcomes: career decision-making processes and career adaptability. For example, a recent meta-analysis realized by Vashist et al. (2021) showed on a total of 8 studies a positive relationship between emotional intelligence and career adaptability (r = .446). However, to date, most findings are conducted independently from each other, with a lack of integration between them. The necessity to develop an overarching picture of what we know about emotional intelligence in career development has thus become meaningful. In addition, integrating unpublished studies or null results is crucial to examine the variability between studies. To this end, Rudolph et al. (2020) foster the importance of systematic review and meta-analysis approaches to overcome this issue.

Table 2. Overview of recommendations for enhancing the credibility of emotional intelligence investigation in career development adapted from Rudolph (2021)

Recommendations to enhance credibility	Advice for enacting recommendations
#1: Develop a link between the theory and hypotheses	- Articulate linkages between the theories of emotional intelligence, career theories, and hypotheses - Avoid "frankentheorizing" on emotional intelligence
#2: Recognize the limitations of cross-sectional designs	- Align hypotheses and conclusions with appropriate methodologies - Highlight the impossibility of drawing causal inferences from cross-sectional - Fostering longitudinal and experimental designs (i.e., randomized clinical trials)
#3: Apply appropriate statistical models	- Use appropriate statistical analyses to hypotheses (e.g., avoiding causal inferences with cross-sectional survey)
#4: Examining the incremental validity of emotional intelligence	- Use control variables (e.g., personality traits, cognitive abilities)
#5: Develop person-centered approaches	- Foster person-centered approach - Study the combinations and interactions of emotional intelligence dimensions
#6: Develop adequate measurement models	- Consider measurement error - Test rigorously psychometric properties (e.g., confirmatory factor analyses) - Adopt modern measurement models (e.g., confirmatory factor analyses)
#7: Address the common method bias	- Delay the data collection between emotional intelligence and career variables - Use different types of emotional intelligence measures (e.g., self-report measures and performance-based measures) - Develop experimental designs - Adopt statistical remedies
#8: Investigate adequate and meaningful samples	- Avoid only using convenient samples such as students - Investigate specific transitions and career-related events - Investigate the beneficial effects of emotional intelligence in career contexts - Recruit "*high-n*" and representative samples
#9: Develop integrative work	- Foster the synthesis of emotional intelligence existing evidence by using systematic review and meta-analysis - Foster replicability - Consider null and unpublished results - Develop critical thinking about theories and constructs

3. Concluding remarks

This chapter proposed a set of limitations of emotional intelligence investigation in the vocational and career literature and proposed a series of recommendations. First, we started with the necessity to develop a more convincing overarching narrative with regard to the linkages between the theories of emotional intelligence and career theories. Second, we highlighted the need to triangulate various forms of research design, such as cross-sectional, longitudinal, and experimental studies (i.e., randomized control trials). Indeed, most of the studies relied upon cross-sectional studies, limiting our ability to determine the directionality and the causality between emotional intelligence and career-related outcomes. Third, we also stressed the importance of developing appropriate methodologies for testing hypotheses. For instance, it is more relevant to use a longitudinal design to test mediation models. Fourth, we stressed the importance of developing person-centered approaches to examine how emotional intelligence dimensions co-occur together and how these "profiles" may predict specifically career-related outcomes. Fifth, we highlighted the need to test rigorously psychometric properties and unravel the specific effect of the general emotional intelligence factor from the dimensions. Sixth, we stressed the necessity to use representative and meaningful samples to generalize the research findings. In parallel, we insisted on considering specific transition (e.g., school-to-work transition) and/or career contexts (e.g., unemployment period) and how emotional intelligence may help individuals in these career contexts. Finally, we claimed to develop more integrative work about the role of emotional intelligence in career development by using systematic review and/or meta-analytic approaches.

These limitations highlighted the need—and to some extent, the necessity—to develop a more integrative and extending investigation of emotional intelligence in career development. Hence, in the next chapter, we will propose different approaches and empirical chapters to address the aforementioned limitations of emotional intelligence in career development.

Chapter 3

Objectives of the present dissertation

Chapter 3

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The present dissertation sets out to question, extend and integrate the role of emotional intelligence in career development. The overarching objective is thus to refine the current literature by proposing an extending and integrative approach to emotional intelligence that may be helpful to understand better how it influences career- and vocational-related outcomes.

Indeed, in **Chapter 1**, we showed the heterogeneity in the definition and conceptualization of emotional intelligence. Sometimes conceptualized as an ability, sometimes as a trait, emotional intelligence has a long-lasting history that has given rise to new mixed and integrative models. In addition to reviewing the theoretical models of emotional intelligence, we also delineated the beneficial effects on individuals' psychological, health, social, educational, and work adjustments. This substantial body of research has led researchers to consider emotional intelligence as an important factor in individuals' adaptive functioning. Finally, we closed the chapter by reviewing one of the focuses of the current manuscript: *What do we know about emotional intelligence in the career and vocational literature?*

Extending the conclusion of **Chapter 1, Chapter 2** proposed an overarching picture of the study's main limitations of emotional intelligence in career development. Hence, we first showed the lack of linkages between emotional intelligence, career theories, and hypotheses in prior studies. Second, we stressed the overuse of cross-sectional research study designs. In the same vein, we third highlighted the limitations of the statistical models. Sometimes investigated as a general factor, sometimes as a set of multiple dimensions, we fourth delineated the limitations of measurement models. Fifth, most research was based on a variable-centered approach, omitting to investigate how emotional intelligence dimensions co-occur together and whether profiles could emerge in the population. Sixth, we also stressed that studies mainly relied upon student samples, with a lack of investigation with regard to specific transitions. Finally, we highlighted the lack of synthesis effort to develop an overall picture of what we know about emotional intelligence in career development.

The current dissertation thus sets out to contribute to the development of emotional intelligence investigation by proposing five empirical chapters that aim to *question*, *extend*, and *integrate* what we know about emotional intelligence in career development. By questioning, the doctoral dissertation aims to present the limitations of the present literature that may put in peril the credibility of research findings. By extending, the doctoral dissertation aims to propose innovative methodologies and triangulate research designs to enrich our comprehension of emotional intelligence in the vocational processes. It also aims to investigate unexplored career-related outcomes. Finally, by integrating, the doctoral thesis

aims to increase the linkages between research findings as most studies have been realized independently from each other.

Hence, in the following sections, we delineate how the five empirical chapters will question, extend, and integrate what we know about emotional intelligence in career development. A general overview of the different studies and how they addressed the main limitations presented in **Chapter 2** are summarized in Table 3 and Table 4, respectively.

The five current studies were organized in a logical structure, presented as follows.

Study 1 examined the cross-lagged effect of emotional intelligence on career adaptability among a sample of adult learners. This study was presented first because it was temporally the first study of the present thesis but also because it examined a single career-related outcome, that is, career adaptability. Due to the length of the Profile of Emotional Competence questionnaire (Brasseur et al., 2013) and the limited number of participants, we decided to examine the intrapersonal dimension of emotional intelligence solely. The use of the intrapersonal dimension of emotional intelligence dimension was also chosen because career adaptability was mainly predicted by intrapersonal processes in prior studies (Celik & Storme, 2018; Merino-Tejedor et al., 2018; Udayar et al., 2018).

Following some inconsistent pattern of results regarding measurement models of the Profile of Emotional Competence from other studies that are not presented in this manuscript, we decided in the second study to examine the factorial structure of the Profile of Emotional Competence questionnaire, but also the predictive validity of emotional intelligence dimensions over and above the general factor. In order to extend the results from Study 1 and due to the number of items of the Profile of Emotional Competence questionnaire (i.e., 50 items), we also decided to focus solely on the intrapersonal dimensions of emotional intelligence. The dependent variables, that is, emotional exhaustion, work-family balance, and career satisfaction, were selected in light of the population (i.e., adult learners).

Due to (1) the incoherent pattern of results with regard to the Profile of Emotional Competence questionnaire in Study 2, (2) the lack of interpersonal dimensions in Study 1 and Study 2, and (3) the overuse of variable-centered approaches, we conducted Study 3 to examine the emergence of emotional intelligence profiles among a sample of university students at the prospect of the school-to-work transition. To this end, we decided to rely on a new emotional intelligence measure that provided better psychometric properties than the Profile of Emotional Competence questionnaire, that is, the Rotterdam Emotional Intelligence Scale (Pekaar et al., 2018). Job search self-efficacy and job search clarity were selected as critical career-related outcomes in light of the context of the school-to-work transition.

Study 4 aimed to examine the effectiveness of a structured intervention in emotional intelligence and its effects on career adaptability and career decision-making self-efficacy. The intrapersonal dimension was examined because the focus of the intervention was to enhance the intrapersonal processes of emotional intelligence. Even if this study could have been organized earlier in the manuscript due to the overlap with Study 1, we decided to present it as the last empirical study given its methodological strength (i.e., randomized

control trial). Career adaptability and career decision-making self-efficacy were also chosen, given the importance of replication efforts and the intrapersonal nature of the variables.

We closed this manuscript with Study 5, that is, a systematic review and meta-analysis of emotional intelligence in career development. We decided to present this study as the last one, given its integrative nature and the agenda that we proposed for future research.

1. Study 1: Examining the cross-lagged effect of emotional intelligence on career adaptability

Based on the career construction theory (Savickas, 2005) and using a longitudinal design, the first study of the current manuscript, that is, **Chapter 4**, examined the cross-lagged effect of emotional intelligence on career adaptability among a sample of adult learners.

This chapter ***questions*** prior findings in several ways. First, most studies investigating the link between emotional intelligence and career adaptability relied upon a cross-sectional research design (Celik & Storme, 2018; Merino-Tejedor et al., 2018; Udayar et al., 2018). These findings were thus unable to determine the directionality and magnitude of effect size between these two variables, even if they claimed the directionality from emotional intelligence to career adaptability. Second, most studies were conducted among university students, limiting the generalization of prior findings (for an exception, see Coetze & Harry, 2014).

This chapter thus ***extends*** prior findings in several ways. To the best of our knowledge, this is the first longitudinal study that investigates the directional effect of emotional intelligence on career adaptability. By doing so, this study brings several theoretical contributions with regard to the career construction model of adaptation. Second, we propose a series of hypotheses that may explain the relationships between the two variables, increasing the theoretical linkages between emotional intelligence and career theories. Third, we also develop advanced statistical models using confirmatory measurement models and cross-lagged panel analysis. Results from cross-lagged panel analysis can thus determine whether cross-lagged effects appear in both directions or not (Selig & Little, 2012). It also offers the possibility to ascertain that self-report questionnaires measure the same construct at different time points, that is, factorial invariance. Fourth, this is also the first study investigating the role of emotional intelligence among a sample of adult learners. Hence, adult learners have to cope with many challenges such as managing the work-family balance, identity changes, and the workload of the different roles of parents, teachers, and students. Doing so offers a better understanding of the role of emotional intelligence among meaningful samples and career contexts.

Finally, this study ***integrates*** prior findings in several ways. First, using a longitudinal design allows us to triangulate different sources of methodological designs and enrich our comprehension between emotional intelligence and career adaptability. Beyond the theoretical contributions, integrating different findings provide fruitful information for practitioners. Indeed, if emotional intelligence predicts career adaptability, it is thus possible

to develop tailor-made interventions to enhance these two variables. This objective will be followed in study 4, presented in **Chapter 7**.

2. Study 2: Unravelling the structure of emotional intelligence in career development using a bifactor-ESEM framework

As Rudolph (2020) developed, most research tends to overlook measurement error and consider Cronbach's alpha a good reliability indicator of self-report measures. To address these issues, confirmatory factor analyses comprising in structural equation modeling framework are recommended. In study 2, that is, **Chapter 5**, we proposed an in-depth investigation and advanced measurement models to examine the structure of emotional intelligence using the self-report Profile of Emotional Competence questionnaire (Brasseur et al., 2013). We first examined through classical confirmatory factor analyses the structure of emotional intelligence. In parallel to cognitive intelligence, we first examined whether emotional intelligence was the product of a general factor, as Spearman (1904) argued for the concept of intelligence with the famous *g* or general cognitive ability. This model is called unidimensional. Second, according to the conceptualization of Thurstone (1938) with regard to cognitive intelligence, we examined whether emotional intelligence was composed of a set of distinct dimensions rather than a unique general factor. This model is called the first-order confirmatory factor analysis model. Finally, the Cattell-Horn-Carroll three-stratum theory of intelligence (Carroll, 1993) posits that cognitive intelligence structure combines general and specific abilities onto higher-order (i.e., hierarchical confirmatory factor analysis model) or nested-factor (i.e., bifactor model) models of cognitive abilities. Accordingly, we tested higher-order and nested models of emotional intelligence. The advantage of bifactor models is their ability to examine the added value of dimensions while controlling for the variance grasped by the general factor (Reise, 2012). In parallel, we examined confirmatory factor analyses while taking into account that some items were reversed (i.e., method factors). We also ascertained that the general factor did not represent a common method variance bias using a random intercept factor analysis (Maydeu-Olivares & Coffman, 2006). We also tested a recent innovative measurement model labeled exploratory structural equation modeling that combines exploratory factor analysis and confirmatory factor analysis (ESEM; Asparouhov et al., 2016). Finally, we explored the structure of emotional intelligence through the bifactor-ESEM framework (Morin et al., 2016). In addition to these measurement models, we applied a set of rarely examined psychometric indices with regard to the bifactor-ESEM measurement model of emotional intelligence. Accordingly, we examined the omega coefficients, explained common variance at the dimension and item levels (i.e., ECV and i-ECV) and percentage of uncontaminated correlations (PUC, Rodriguez et al., 2016). This chapter thus followed two main objectives: (1) comparing a series of measurement models and unraveling the unidimensional from the multidimensional structure of emotional intelligence, and (2) examining the predictive effects of emotional intelligence dimensions on four career-related outcomes while controlling for the general factor of emotional intelligence.

Chapter 5 questions prior findings in several ways by pursuing the aforementioned objectives. First, it reviews and examines how prior findings modeled emotional intelligence in career development. Indeed, some of them consider emotional intelligence as a unidimensional factor, whereas others consider emotional intelligence as a multidimensional factor. Second, this study highlights the overuse of regression analyses in prior findings to examine the predictive effects of emotional intelligence on career-related outcomes. Third, we highlight some lack of linkages on how emotional intelligence dimensions may be a predictor of career-related outcomes.

Chapter 5 thus ***extends*** prior findings. First, it offers the possibility to examine a series of different measurement models and enrich our comprehension with regard to the structure of emotional intelligence. Second, this study justifies each of the hypotheses between the general factor of emotional intelligence, emotional intelligence dimensions, and the four career-related outcomes (i.e., emotional exhaustion, work-family conflict, family-work conflict, and career satisfaction). As a result, this study proposes 25 hypotheses based on the literature, increasing linkages between theories and empirical findings. Third, considering the predictive effects of emotional intelligence dimensions over and above the general factor allows us to identify which dimensions have the most substantial influence on career-related outcomes. Fourth, we provide additional evidence of the beneficial role of emotional intelligence with regard to emotional exhaustion, work-family balance, and career satisfaction. Fourth, by investigating the beneficial role of emotional intelligence among adult learners, we provide empirical evidence among meaningful samples and extend the generalizability over university students.

Finally, **Chapter 5** proposes an ***integrative*** work. Indeed, by combining a wide range of measurement models, we propose an integrative comparison of the structure of emotional intelligence. Doing so, it offers recommendations with regard to the investigation of the construct in the realm of career. At the practical level, it integrates the general factor and the dimensions simultaneously, allowing to delineate practical recommendations on how to develop emotional intelligence and its dimensions with regard to individuals' career.

3. Study 3: Exploring the emergence of emotional intelligence profiles in the context of the school-to-work transition

Study 3, presented in **Chapter 6,** relied upon a person-centered approach to examine university students' emotional intelligence profiles in the context of the school-to-work transition. We also examined whether these profiles differed between female and male students. We finally examined whether male and female profiles predicted two career-related outcomes: job search self-efficacy and job search clarity. To determine the emergence of profiles, we performed latent profile analysis. In contrast to variable centered approaches that aim to evaluate the on-average relations between different variables, latent profile analysis is a person-centered latent clustering method that aims to identify subgroups of individuals that display distinct combinations and levels on a series of indicators (e.g., emotional intelligence

dimensions) within a given population, called "profiles" (Spurk et al., 2020). Latent profile analysis presents a series of advantages when compared to classical *K*-clustering because latent profile analysis (1) allocates individuals into profiles upon membership probabilities, (2) may consider continuous variables, categorical variables, or both, and (3) is based on structural equation modeling framework, providing fit indices to choose the best profile solution, control for measurement error, and may consider demographics and other covariates (Hofmans et al., 2020; Spurk et al., 2020)

This study thus first ***questions*** prior findings with regard to the methodological approaches. Indeed, our literature review indicates that most studies relied upon variable-centered approaches. These approaches examined the on-average relations between emotional intelligence and career-related outcomes. However, even if they provided valuable information to the literature, they omitted to consider the heterogeneity among individuals. It is unfortunate as a series of researchers highlighted variability of emotional intelligence *across* individuals (Fiori, 2009; Keefer et al., 2012). Second, this study highlights the necessity to better understand the role of emotional intelligence in job search processes. Finally, we stress the lack of investigation with regard to the differential effects between the intrapersonal and interpersonal dimensions of emotional intelligence.

Thus, by proposing a person-centered approach using latent profile analysis, we ***extend*** our comprehension of the role of emotional intelligence in career development in several ways. The first contribution relates to the use of a person-centered approach. Hence, in contrast to variable-centered approaches, the person-centered approach thus offers three main advantages. First, it is possible to describe how emotional intelligence co-occurs, relying upon a heterogeneity hypothesis. Second, it considers that some dimensions depend on another, delineating the interaction effects. This assumption has been developed in the meta-analysis of Joseph and Newman (2010), in which authors highlighted the cascading effects from emotion identification to emotion regulation. Finally, person-centered approaches assume the possible non-linear and curvilinear relations between emotional intelligence dimensions. The second contribution relates to the lack of investigation with regard to job search processes. Thus, the present study offers new empirical evidence on how emotional intelligence may explain the adaptation of graduates to the world of work by examining the predictive effects of emotional intelligence profiles on job search clarity and job search self-efficacy. Third, we extend our comprehension in terms of gender differences. Indeed, by applying a person-centered approach, we highlight how female and male students differ in terms of emotional intelligence dimensions and how these profiles predict job search processes. Fourth, we extend our comprehension of emotional intelligence in the realm of career by contextualizing its influence in the preparation of the school-to-work transition. Finally, the use of latent profile analysis responds to prior calls to propose advanced and appropriate statistical models to respond to specific questions (Spurk et al., 2020).

Overall, the present study provides an ***integrative*** perspective with regard to prior findings. First, we demonstrated how prior studies highlighted the co-occurrence of emotional intelligence and how it is possible to integrate these assumptions in a complementary approach to the variable-centered approach, that is, the person-centered

approach. Second, by integrating different approaches, the present paper offered new practical recommendations for practitioners with regard to the emotional processes involved in the context of the school-to-work transition. Hence, person-centered approaches allow to identify at-risk individuals with regard to their career development and offer the possibility to develop tailor-made interventions.

4. Study 4: Examining the effects of an emotional intelligence training in the context of the school-to-work transition

Based on the career construction model, study4, that is, **Chapter 7**, proposed to examine the effect of a structured training in emotional intelligence—using randomized control trials—among a sample of last year's university students in order to prepare them for their school-to-work transition. The intervention also aimed to examine the effect of the intervention on two important career-related outcomes: career adaptability and career decision-making self-efficacy.

This study ***questions*** prior findings in several ways. First, in the extension of **Chapter 4**, we highlight the lack of longitudinal and experimental research designs in careers science. Second, we also highlight the lack of intervention that could directly help guidance counselors and practitioners in their counseling activities. Indeed, the majority of findings claimed the presence of a causal effect. However, they relied upon cross-sectional research designs to examine it.

Using an experimental research design, **Chapter 7** thus ***extends*** our comprehension of the effects of emotional intelligence on individuals' career development. First, to the best of our knowledge, this is the first study that examines the effects of a structured intervention in emotional intelligence in the context of the school-to-work transition. Indeed, most of the research did not contextualize their investigation. Second, using such a research design allows for establishing causal inferences between emotional intelligence, career adaptability, and career decision-making self-efficacy. It is also the first experimental study investigating the relationships between these variables. Third, the present study also contributes to the career construction model of adaptation and increases the link between emotional intelligence and career theories. Fourth, at the practical level, we propose a new form of intervention that can be implemented during guidance counseling activities.

Chapter 7 also represents an ***integrative*** effort about the link between emotional intelligence, career adaptability, and career decision-making self-efficacy. Hence, by proposing longitudinal and experimental research designs, we respond to prior calls that claimed the necessity to triangulate various forms of empirical evidence and research designs to deepen our comprehension of these variables. In addition, we relied upon prior empirical evidence to apply and adapt an intervention intended for university students.

5. Study 5: A systematic review and meta-analysis with regard to the beneficial role of emotional intelligence in career development

Synthesizing results from various studies to offer an overall picture of a given variable with regard to specific outcomes is a critical component of the scientific process. Although the literature indicates emotional intelligence as a helpful self-regulatory resource to navigate in the new career context, little is known about the aggregate effect sizes between emotional intelligence and career-related outcomes, as most studies were conducted independently. To this end, the current thesis has the final objective of quantifying the main relationships between emotional intelligence and career-related outcomes. In **Chapter 8**, we thus presented the results of a systematic review and meta-analysis.

The meta-analysis presented in **Chapter 8** ***questions*** research findings in several ways. First, we highlight that most studies were conducted independently from each other, with few integrations between research findings. Second, most studies claimed to test the career construction model. However, they omitted a wide range of career-related outcomes and processes. Finally, we stress the lack of investigation in terms of meaningful samples and career contexts.

Chapter 8 also ***extends*** prior research findings in several ways. First, to the best of our knowledge, it is the first empirical work that reviews all career-related outcomes that have been investigated in relation to emotional intelligence. By quantifying the mean effect sizes for all career-related outcomes, we are thus the first to provide an overarching picture of what we know about emotional intelligence in career development and, in the end, meaningful theoretical contribution to the career construction model of adaptation. Second, the meta-analysis offers the possibility of delineating the main limitations in the investigation of emotional intelligence in career development. Third, the present study contributes to the literature by including subjective as well as objective indicators of career success (i.e., salary). Fourth, including published and unpublished studies provides a more accurate magnitude of effect sizes between the different variables. Finally, this study offers recommendations and proposes research agenda for future research.

Finally, the present meta-analysis addresses the need for more ***integrative*** work in careers science (Rudolph et al., 2021). Indeed, by proposing a systematic review and meta-analysis, we replicate, integrate, and critically examine the role of emotional intelligence in career development.

Table 3. Summary of empirical chapters

	Sample	Transition/Context	Methodology	Emotional intelligence measurement	Outcomes	Details
Chapter 4	Adult learners	Adult education programme	Cross-lagged panel	Global level of intrapersonal dimensions (PEC; Brasseur et al., 2013)	Career adaptability	Two-wave longitudinal study ($Ntime_1$ = 282; $Ntime_2$ = 241)
Chapter 5	Adult learners	Adult education programme	CFA models RIFA ESEM model Bifactor-ESEM model	Global level of intrapersonal dimensions; (PEC; Brasseur et al., 2013)	Career satisfaction, Work-family conflict, Family-work conflict, Emotional exhaustion	Cross-sectional study (N = 445)
Chapter 6	University students (third, fourth, and last year)	School-to-work transition	Latent profile analysis	Intrapersonal and interpersonal dimensions; (REIS; Pekaar et al., 2018)	Job search clarity, Intrapersonal and interpersonal job search self-efficacy	Cross-sectional study (N = 1,582)
Chapter 7	University students (last year)	School-to-work transition	Randomized control trial	Intrapersonal dimensions (PEC; Brasseur et al., 2013)	Career adaptability, Career decision-making self-efficacy	Experimental study (N = 63)
Chapter 8	—	—	Systematic review and meta-analysis	Global level	Career adaptability, Career commitment, Career decision-making difficulties, Career decision self-efficacy, Salary, Career satisfaction, Self-perceived employability, Entrepreneurial intentions, Entrepreneurial self-efficacy, Job search self-efficacy, Turnover intentions	Cross-sectional meta-analysis (K = 141, N = 48,862)

Note. CFA = confirmatory factor analysis; RIFA = random intercept factor analysis; ESEM = exploratory structural equation modeling; PEC = Profile of Emotional Competence; REIS = Rotterdam Emotional Intelligence Scale; N = total number of participants; K = number of studies.

Table 4. Summary of how each chapter responds to the nine limitations

	#1 Link between theory and hypotheses	#2 Limitations of cross-sectional design	#3 Appropriate statistical models	#4 Control variables	#5 Person-centered approaches	#6 Adequate measurement models	#7 Meaningful samples	#8 Common method bias	#9 Integrative work
Chapter 4	✓	✓	✓	–	–	✓	✓	–	✓
Chapter 5	✓	–	✓	✓	–	✓	✓	✓	✓
Chapter 6	✓	–	✓	–	✓	✓	✓	–	✓
Chapter 7	✓	✓	✓	–	–	–	✓	–	✓
Chapter 8	✓	–	✓	–	–	✓	–	–	✓

Part II

Empirical chapters of the present thesis

Chapter 4

Examining the impact of emotional intelligence on career adaptability

A two-wave cross-lagged study

Developing career meta-competencies has become crucial to cope with the unpredictability of today's global work context, both at the emotional and cognitive levels. It is often argued that individuals rely on both emotional intelligence (Di Fabio & Kenny, 2014) and career adapt-abilities (Savickas, 2005) to respond to career changes. Though the link between emotional intelligence and career adaptability has been previously demonstrated, no longitudinal evidence has been provided yet. The present study investigates the impact of emotional intelligence on career adaptability in a two-wave longitudinal study among a sample of adult learners ($N = 282$ for Time 1; $N = 208$ for Time 2). Using cross-lagged panel analysis, our results supported the causal relationship from emotional intelligence to career adaptability. Emotional intelligence at Time 1 predicted career adaptability at Time 2 while controlling for prior levels of career adaptability and socio-demographic variables. Neither a reversed causality model nor a reciprocal causality model provided a better fit to the data. While this study brings additional evidence for the career construction model and emphasizes the role of two career meta-competencies in crafting sustainable careers, it also raises the importance to consider career development in the context of adult learning.

Reference

Pirsoul, T., Parmentier, M., Nils, F. (2019). Examining the impact of emotional intelligence on career adaptability: A two-wave cross-lagged study. *Personality and Individual Differences*, 151, 109446. https://doi.org/10.1016/j.paid.2019.05.052

Chapter 4

Examining the impact of emotional intelligence on career adaptability

A two-wave cross-lagged study

1. Introduction

Individuals now navigate in a more demanding context of work as they face unfamiliar and unpredictable situations and constraints, as well as numerous career transitions and job uncertainty during their careers (Biemann et al., 2012). Therefore, sustaining individuals' abilities to deal with such constraints, as well as to cope with ongoing career changes and transitions has become crucial. These abilities have been referred to as career meta-competencies (Coetzee, 2014). Among them, two have particularly grasped researchers' attention in recent years. On the one hand, understanding how individuals develop and make use of self-regulatory resources to prepare for and cope with career and job transitions have been at the heart of career construction theory (see, Johnston, 2018, for a review; Savickas, 2005). On the other hand, several researchers have highlighted how emotional intelligence can help individuals in making career decisions, deal with major career events and make emotional adjustments (Di Fabio & Kenny, 2014). This led scholars to stress the importance of both emotional intelligence and career adaptability as important meta-competencies helping individuals to effectively respond to career changes and craft sustainable careers (Buyken et al., 2015; Potgieter, 2014).

Building upon the career construction model (Savickas, 2005), some empirical studies have documented the positive role of emotional intelligence on career adaptability. However, no longitudinal evidence has been provided yet. This is unfortunate as the causal relationship between these two meta-competencies has implications for the design of effective career guidance practices. To approach this shortcoming, the objective of the present study was to bring additional evidence for the causal hypothesis of emotional intelligence on career adaptability in a two-wave longitudinal study among a sample of adult learners.

1.1 Emotional intelligence

Emotional intelligence refers to the individuals' ability to identify, understand, express, manage, and use emotions (Mayer & Salovey, 1997; Petrides & Furnham, 2003). Above strong evidence of its positive impact in health (Martins et al., 2010), social (Lopes et al., 2004), and work domains (Ashkanasy & Daus, 2005), emotional intelligence has gained increasing popularity and is now considered as a key career resource (Di Fabio, 2012). The beneficial role of emotional intelligence in the realm of careers has been empirically well

documented with regard to career decision-making (Di Fabio et al., 2013; Di Fabio & Saklofske, 2014), career commitment (C. Brown et al., 2003), career success (de Haro García & Castejón Costa, 2014), and employability (Hodzic et al., 2015). These findings stem from the hypothesis that high emotional intelligence is considered as self-regulatory resources related to a better awareness, regulation and use of emotions in career-related thinking and actions (Emmerling & Cherniss, 2003) and an important factor of adaptive emotional functioning. In building their careers, individuals with high emotional intelligence might be better in planning their professional goals and objectives, fitting in into different organizational cultures, establishing and maintaining social relationships as well as anticipating the emotional consequences of career tasks, changes, and transitions (Potgieter, 2014).

1.2 Career adaptability

Career adaptability refers to a set of psychosocial self-regulatory, transactional, and malleable resources that enable individuals to prepare for, cope with, and manage career or job transitions as well as career- or work-related issues (Savickas & Porfeli, 2012). A recent meta-analysis (Rudolph et al., 2017) showed the positive effect of career adaptability on a wide range of career-related outcomes such as job and career satisfaction (Zacher, 2014; Zacher & Griffin, 2015), career identity (Negru-Subtirica et al., 2015), job stress (Fiori et al., 2015), and employability (Udayar et al., 2018), to cite a few. Career adaptability is considered as a set of resources individuals may rely upon in times of uncertainty and career changes to proactively plan their career, develop needed skills, engage in career exploration behaviors or mobilize social capital when needed. For these reasons, career adaptability has been coined as a key resource for sustainable careers as it helps individuals to proactively cope with career-related tasks and foster their career development (Buyken et al., 2015). Very few studies have investigated the impact of emotional intelligence on career adaptability (Celik & Storme, 2017; Coetzee & Harry, 2014; Merino-Tejedor et al., 2018; Udayar et al., 2018). Building upon the career construction model (Savickas, 2005), they argue that emotional intelligence provides individuals with a higher adaptive functioning in a various number of situations and to major life events, fosters the development and use of career adaptability and thus leads to a greater adaptive functioning in career-related issues and challenges. However, these studies relied on cross-sectional designs and on samples of university students (see, Coetzee & Harry, 2014, for an exception), limiting the ability to draw causal conclusions. Longitudinal evidence is therefore necessary to further establish the causal inferences of the career construction model.

1.3 The present study

The objective of this study was to examine the causal relationship between emotional intelligence and career adaptability using a two-wave cross-lagged panel design among a sample of adult learners. We chose this sample for two main reasons. First, entering an education program as an adult is, per se, a vocational transition, additionally involving the management of the dual roles of worker and student (Fairchild, 2003). Second, beyond

learning outcomes, engaging in such programs is generally associated with career development issues such as career change, professional development, and career advancement (Vertongen et al., 2009). Focusing on adult learners raises the importance of addressing career development issues in adult education, as they need to rely on career meta-competencies in order to undertake the career and job objectives they pursue. Cross-lagged panel analysis is particularly relevant as it allows to test the direction and strength of the link between emotional intelligence and career adaptability while controlling for the prior levels of these two variables (Selig & Little, 2012). The following hypothesis was accordingly formulated:

H1. : *Emotional intelligence at Time 1 will predict career adaptability at Time 2 while controlling for prior levels of career adaptability at Time 1.*

Specifically, we will test this hypothesis and further show that neither a reversed nor a reciprocal causation model would provide a better fit to the data. In addition, we included several demographic control variables in order to test the robustness of the link in terms of magnitude and significance. Those variables were age, gender, educational attainment, job tenure, marital status, and number of children.

2. Methods

2.1 Participants and data collection

The data were collected among adults enrolled in an adult education program in Educational Sciences. The education program is designed for school teachers and principals, adult trainers, civil servants, HR workers willing to advance their skills and knowledge in educational sciences. Four main specialisations are available: school-based learning, teacher education, management of socio-educational organizations, and adult education. Adult learners' goals can be diverse: salary increase, becoming a school principal, operating a major career change in education, and becoming a teacher or adult trainer. Out of 542 adult learners, 282 responded at Time 1 (*Mage* = 34.22, *SD* = 9.06; 72.3% female), and 208 responded 6 months later. In order to avoid selection biases due to panel attrition, we performed several dropout analyses. The results indicated there were no differences in terms of age, gender, educational attainment, tenure, marital status and number of children. Moreover, no differences in mean levels were found neither for emotional intelligence ($t(271) = -1.364$, $p = .174$) nor career adaptability ($t(270) = -0.467$, $p = .641$).

2.2 Measures

The study variables were measured at both time points. Additionally, we included several demographic characteristics: age, gender, educational attainment, tenure, marital status, and the number of children.

2.2.1 Emotional intelligence

Emotional intelligence was assessed with the Profile of Emotional Competence (Brasseur et al., 2013). This measure consists of 50 items from 1 (*strongly disagree*) to 7 (*strongly agree*) and provides separate sub-scores for 5 dimensions (i.e., identification, understanding, expression, regulation, and use) according to 2 targets: own vs. others' emotions. As other measures of emotional intelligence generally tap into intra-personal emotional intelligence (pertaining to one's own emotions; e.g., TEIQue, Petrides & Furnham, 2003), we only used the intrapersonal dimension (i.e., 25 items). Examples of items for the different dimensions are "*I am aware of my emotions as soon as they arise*" (identification), "*When I am sad, I often don't know why*" (reversed; understanding), "*I am good at describing my feelings*" (expression), "*I find it difficult to handle my emotions*" (reversed; regulation) and "I use my feelings to improve my choices in life" (use).

2.2.2 Career adaptability

Career adaptability was assessed with the Career Adapt-Abilities Scale (Savickas & Porfeli, 2012). This measure consists of 24 items from 1 ("*Not one of my strengths*") to 5 ("*My greatest strength*"), composed of 4 career adapt-abilities: concern (e.g., "*Preparing for the future*"), control (e.g., "*Counting on myself*"), curiosity (e.g., "*Exploring my surroundings*"), and confidence (e.g., "*Taking care to do things well*").

2.3 Statistical analyses and missing data procedure

Concerning our statistical analyses, we adopted a three-step strategy using structural equation modeling techniques with M*plus* 8: (1) testing measurement models at each measurement time; (2) testing the measurement invariance to check whether our factor structure hold across time; and (3) comparing several competing cross-lagged models to test the direction and strength of the link between emotional intelligence and career adaptability.

The longitudinal analyses were conducted using full information maximum likelihood estimation (FIML) in conjunction with robust maximum likelihood estimator (MLR) for handling missing data. Contrary to deletion or imputation methods, FIML is a strategy using the data from all participants in the estimation of model parameters and has been found to be unbiased in the case of longitudinal studies (Enders, 2010). The method allowed us to make use of all available data instead of using only participants who completed questionnaires at both measurement times.

3. Results

Before testing our study hypotheses, the means, standard deviations, Cronbach's alpha coefficients, and bivariate correlations were computed (see Table 5). The pattern of correlations was as expected as our constructs correlated both synchronously and across time. In addition, both constructs had satisfactory test-retest reliabilities, .76 and .40 respectively, and satisfactory internal consistencies (Cronbach's $\alpha > .85$).

Table 5. Means, standard deviations, reliabilities and bivariate correlations for the study variables.

		M	SD	1	2	3	4	5	6	7	8	9	10
Time 1													
1.	Age	34.22	9.06	–									
2.	Gender	–	–	–.05	–								
3.	Education	–	–	.06	.05	–							
4.	Tenure	9.17	7.32	.80***	–.05	–.04	–						
5.	Martial status	–	–	.54***	–.01	.02	.43***	–					
6.	Nb. Children	1.11	1.36	.58***	.01	.01	.47***	.56***	–				
7.	EI	4.72	0.73	.24***	–.13*	.07	.16**	.18**	.16	**.85**			
8.	CA	4.22	0.41	.10	–.12†	.11†	.03	.09	–.02		**.91**		
Time 2													
9.	EI	4.69	0.79	.22**	–.07	.13†	.12	.13†	.06	.76***	.25**	**.88**	
10.	CA	3.82	0.42	.24**	–.05	.14†	.21**	.04	.14†	.30***	.40***	.38***	**.88**

Note. Nt_{ime1} = 282; N_{time2} = 208. EI = emotional intelligence. CA = career adaptability. Cronbach's alphas are reported on the diagonal in bold.
† $p < .10$.
* $p < .05$.
** $p < .01$.
*** $p < .001$.

3.1 Measurement model analyses

We investigated our measurement model by comparing two alternative models at each measurement time. A two-factor model representing our two distinct constructs was systematically compared to a one-factor model with all indicators loading on a single latent factor. According to our results, the two-factor model fitted the data well at both Time 1 (χ^2 = 65.47, df = 26, CFI = .94, RMSEA = .074, SRMR = .051) and Time 2 (χ^2 = 66.53, df = 26, CFI = .91, RMSEA = .087, SRMR = .06). Comparisons based on Chi-square difference tests revealed that the two-factor models fitted the data better than the one-factor models ($\Delta\chi^2$ = 1178.29, p <. 001, for Time 1; $\Delta\chi^2$ = 95.62, $p < .001$, for Time 2). Measurement invariance analyses showed support for the equivalence of the factor structure across time (see Table 6). We compared increasingly constrained models to the configural invariance, which replicate the factor structure at both measurement times. All model comparisons were based on differences in Chi-square statistics, CFI (ΔCFI < .01) and RMSEA (ΔRMSEA < .015; Chen, 2007). According to our results, the metric invariance was established (i.e., equality constraints on factor loadings), but the factor structure did not hold when trying to reach scalar invariance (i.e., equality constraints on intercepts). A partial scalar invariance was established by relaxing the constraints on the intercept of the concern dimension of career adaptability. Reaching partial scalar invariance is common in practice and is considered as sufficient for testing latent mean differences (Putnick, Diane & Bornstein, Mark, 2016).

Table 6. Measurement invariance statistics

Models	MLRχ^2(df)	CFI	TLI	RMSEA	RMSEA 90% CI	SRMR	Δ MLRχ^2(df)	Comparison
M_1 configural invariance	325.06(225)	.948	.937	.037	.028–.046	.066	–	–
M_2 metric invariance	337.27(234)	.947	.937	.037	.028–.046	.074	12.26(9)	$M_1 – M_2$
M_3 scalar invariance	391.14(243)	.923	.913	.044	.035–.051	.086	55.67(9)*	$M_3 – M_2$
M_4 partial scalar invariance	351.23(241)	.943	.935	.038	.029–.046	.075	14.04(7)	$M_4 – M_2$

Note. MLRχ^2 = chi-square test of model fit associated with robust maximum likelihood estimator; df = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual.

∗ $p < .001$.

3.2 Hypothesis testing

Several competing cross-lagged models were fitted to the data and compared in several steps (see Table 7). First, we modeled a stability model which only contains the autoregressive effects. Several competing nested models were then compared to the stability model: (1) a causality model, which adds a path from T1 emotional intelligence to T2 career adaptability, (2) a reversed causality model, which adds a path from T1 career adaptability to T2 emotional intelligence and (3) a reciprocal causality model, which contains bidirectional relationships between emotional intelligence and career adaptability. Compared to the stability model, our results showed that the causality model best fitted the data ($\Delta\chi^2$=7.13, $p < .01$). The standardized estimates of the causality model are displayed in Figure 7. The inclusion of the path from T1 emotional intelligence to T2 career adaptability provided a significant better fit to the data compared to the stability model. However, an alternative reversed causality model did not significantly improved model fit ($\Delta\chi^2$=0.40, $p = .526$) and the path from T1 career adaptability to T2 emotional intelligence was not significant ($\beta = 0.04$, $p = .523$). Finally, the reciprocal causality model did not improve the model fit compared to the causality model ($\Delta\chi^2 = 0.06$, $p = .805$). The causality model was thereby retained as the best fitting model. As Figure 7 shows, T1 emotional intelligence positively predicted T2 career adaptability levels ($\beta = 0.241$, $p < .05$) while controlling for the prior levels of career adaptability ($\beta = 0.326$, $p < .001$). The causality model explained a substantial part of the variance of career adaptability (R^2=.23).

Table 7. Cross-Lagged model fit and comparison of alternative models

Models	MLRχ^2(df)	CFI	TLI	RMSEA	RMSEA 90% CI	SRMR	Δ MLRχ^2(df)	Comparison
M_1 stability model	244.91(137)	.927	.918	.050	.039–.059	.109	–	–
M_2 causality model	238.06(136)	.931	.922	.048	.038–.058	.107	7.1344(1)*	$M_1 – M_2$
M_3 reversed causality model	243.78(136)	.927	.918	.050	.039–.060	.109	.04024(1)	$M_1 – M_3$
M_4 reciprocal causality model	237.05(135)	.931	.921	.049	.038–.059	.106	0.0610(1)	$M_2 – M_4$

Note. MLRχ^2 = chi-square test of model fit associated with robust maximum likelihood estimator; df = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; SRMR = standardized root mean square residual.

∗ $p < .001$.

When including the control variables in the analysis, results were identical and did not change the interpretation of the findings. The causality model (χ^2 = 368.95, df = 221, CFI = .91, TLI = .89, RMSEA = .046) was still the best fitting model compared to the stability model ($\Delta\chi^2$ = 4.45, $p < .05$). T1 emotional intelligence still predicted T2 career adaptability levels ($\beta = .214$, $p < .05$) while controlling for the prior levels of career adaptability ($\beta = .342$, $p < .001$) and for the effects of control variables. The model without control variables was thereby retained in order to reduce model complexity. In sum and in line with our hypotheses, these findings supported the causal relationship between emotional intelligence and career adaptability.

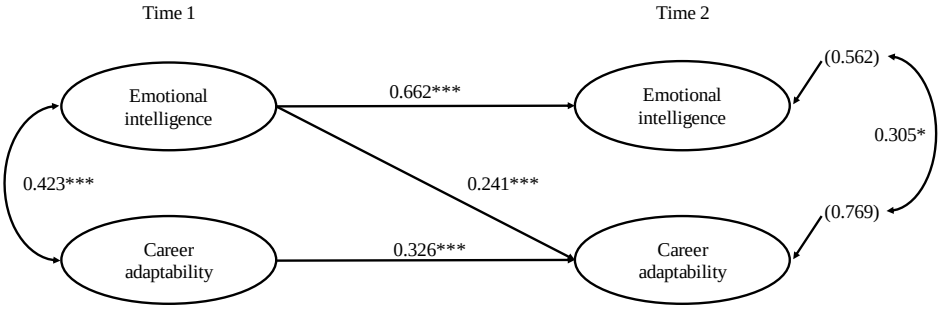


Figure 7. Cross-lagged relationships between emotional intelligence and career adaptability of the causality model. *p<.05. ***p<.001

4. Discussion

The aim of the present study was to bring additional evidence for the causal relationship between emotional intelligence and career adaptability. Longitudinal empirical evidence was needed as most studies relied on cross-sectional designs (Rudolph et al., 2017). In addition, as most previous studies were undertaken on traditional students, we provided additional evidence with adult learners. Focusing on this sample was important due to the wide range of work, learning, and family demands they have to deal with (Fairchild, 2003). To these

ends, we examined the relationship between emotional intelligence and career adaptability using a two-wave cross-lagged design among a sample of adult learners in order to provide an in-depth understanding of how emotional intelligence is associated with career adaptability across time.

Our results supported our hypothesis and showed that emotional intelligence predicted career adaptability, which is consistent with the career construction model (Savickas, 2005). This relationship was deemed unidirectional, as neither the reversed causality nor the reciprocal causality model improved model fit. Our findings therefore bring additional support for the causal relationship between emotional intelligence and career adaptability. Our results are consistent with previous cross-sectional studies on call-center workers (Coetzee & Harry, 2014) and university students (Celik & Storme, 2017; Merino-Tejedor et al., 2018; Udayar et al., 2018) and extend previous findings by investigating adult learners' meta-competencies. Within the framework of career construction theory, our findings stress the importance of considering emotional intelligence as a factor of general adaptive readiness that individuals may rely upon to develop and mobilize their career adaptability resources, and lead to a greater adaptive functioning in career-related issues. In that matter, recent findings have successfully shown the mediating role of career adaptability in the link between emotional intelligence and several career-related outcomes such as academic engagement (Merino-Tejedor et al., 2018), academic satisfaction (Celik & Storme, 2017), career indecision and self-perceived employability (Udayar et al., 2018).

4.1 Limitations and future directions

Several limitations may have affected the generalizability and the equality of our findings. First, our study focused on adult learners in Educational Sciences. The sample was mainly composed of teachers, adult trainers and social workers. Though targeting a specific population was our objective, replication in other adult learning and work contexts is still needed in order to generalize our findings. Second, cross-lagged longitudinal analysis can at best bring support about causal inferences but does not allow one's to infer causality. Future research should focus on experimental studies in order to further examine the causality assumption between emotional intelligence and career adaptability. Third, the constructs of our study were measured using self-reports and may be biased due to common method variance (Podsakoff et al., 2003).

Notwithstanding these limitations, the present findings offer important avenues for future research. By showing the positive relationship between one's ability to manage emotions and the development of career-related self-regulatory resources, this study highlights the importance to consider emotional intelligence, and broader affective mechanisms, in career development processes. Since calls for the inclusion of emotion in career research (Kidd, 2004), research has focused more on the role of emotional intelligence (e.g., Di Fabio & Saklofske, 2014) and affect (e.g., Fiori et al., 2015) in career development. Future research should echo these efforts and further investigate the role of emotion in career development. This is especially important as both emotional intelligence and career adaptability are considered as self-regulatory resources whose activation can vary over time according to

individuals' regulation needs (Pekaar, Bakker, van der Linden, Born, et al., 2018; Rossier, 2015; Zacher, 2015). Accordingly, studying daily emotional manifestations could enhance our understanding of how individuals use their meta-competencies in order to respond to daily career-related tasks. Similarly, qualitative investigations could explain in more detail how individuals make use of these meta-competencies to display adaptive career functioning in relation to local and specific contexts, tasks, and transitions.

Emotional intelligence and career adaptability are important meta-competencies fostering adaptive behaviors, and, ultimately facilitating individuals' adaptation to career challenges and individual well-being. Fruitful implications for research and practice also dwell in the malleability of both constructs. It has been demonstrated that emotional intelligence and career adaptability are malleable competencies that can be learned through training (Hodzic et al., 2018; Koen et al., 2012). By providing additional support for the causal relationship, this study brings insights for the design and use of empirically driven career and work interventions. Complementary to the use of training than can be expensive and difficult to implement, qualitative investigations could also shed some light on the conditions in learning and work settings likely to sustain the development of these two career meta-competencies. In this regard, constructing internships as critical reflexive practices has been suggested as an effective way to understand the development and use of competencies (Ripamonti et al., 2018). This is especially relevant for adult learners as they generally value opportunities to integrate learning with life and work experiences. These implications give both universities and organizations tools for sustaining adults in the construction of their careers.

This study also suggests the importance to consider career development issues in adult education contexts. As we argued, entering an education program is a transition per se and adults are particularly likely to make use of their meta-competencies to deal with the new learning tasks and be successful in their training (Vertongen et al., 2009). At the same time, they have to manage the dual roles of worker and student, notwithstanding family demands (Fairchild, 2003). This is in line with a lifespan perspective that posits that the use of self-regulatory resources may vary at different career stages (Rudolph et al., 2017). Helping adults to succeed in their learning, manage the various challenges related to the work, student, and family domains, as well as to prepare for and deal with career changes through the development of meta-competencies is crucial to build positive and sustainable careers

Chapter 5

One step beyond emotional intelligence measurement in the career development of adult learners

A bifactor exploratory structural equation modeling framework

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Emotional intelligence has been recognized as an important meta-competency for helping individuals to navigate throughout their career. However, the multidimensionality of emotional intelligence has seldom been fully investigated at the measurement level, and it remains unclear how specific dimensions predict career-related outcomes over and above the general factor of emotional intelligence. We addressed this issue using a bifactor-ESEM framework among a sample of Belgian adult learners (N= 445), and explored the incremental and predictive validity of emotional intelligence dimensions on important career-related outcomes (i.e., emotional exhaustion, work-family conflict, family-work conflict, and career satisfaction). Beyond the predictive effect of the general factor of emotional intelligence on career-related outcomes, we demonstrated the specific contribution of several dimensions (comprehension, regulation and utilization). Our results support the importance of distinguishing the specific effects of emotional intelligence dimensions and bring important contributions for guidance counselors and for designing tailor-made interventions.

Reference

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Chapter 5

One step beyond emotional intelligence measurement in the career development of adult learners

A bifactor exploratory structural equation modeling framework

1. Introduction

Emotional intelligence has been recognized as an important factor in adaptive functioning in a wide range of life domains (Mikolajczak et al., 2015). Over the last decade, substantial interest has also been devoted to the role of emotional intelligence in career development. The work in this field has led researchers to propose emotional intelligence as a crucial meta-competency that supports individuals in developing adaptative behaviors towards important career events and that, ultimately, builds sustainable careers (Potgieter, 2014).

Several measures and techniques have been used to evaluate the impact of emotional intelligence on career development. Earlier studies have demonstrated that the global score of emotional intelligence was a strong predictor of career decision processes (Di Fabio et al., 2013) and employability (Nelis et al., 2011). In these studies, the total emotional intelligence score was based on a sum-score of observed variables (i.e., items). Other studies have also shown through structural equation modeling that the global factor of emotional intelligence was a strong predictor of career adaptability (Parmentier et al., 2019, 2021), self-perceived employability, and career indecision, through the mediating role of career adaptability (Udayar et al., 2018). Scholars have also shown that emotional intelligence dimensions (e.g., self-emotion appraisal or emotion regulation) predicted career decision-making processes (Di Fabio & Kenny, 2011; Santos et al., 2018) and career success (de Haro García & Costa, 2014). In these studies, emotional intelligence was modeled as a latent variable by confirmatory factor analyses (CFA), and observed indicators (i.e., items) represented it.

Despite the increasing recognition of emotional intelligence as an important meta-competency, the measurement models that are currently in use have presented significant limitations that risk undermining the validity of research findings. The most commonly adopted measurement models for examining emotional intelligence are the single factor CFA, the hierarchical CFA, and the first-order CFA. In the single factor CFA (model A in Fig. 8), all items load onto a single factor, and this single factor is used in structural relations with other variables. By grasping the common variance shared between dimensions and partialling out their unique variances from the measurement model, unidimensionality is imposed on a multidimensional construct and this is likely to lead to biased structural

parameter estimates (Rodriguez et al., 2016). In the hierarchical CFA (model B in Fig. 8), each item loads on its respective first-order factor (e.g., emotion identification), and these factors also load on a higher-order factor (i.e., emotional intelligence factor). A limitation of this model involves the imposition of a proportionality constraint between observed indicators likely to be too unrealistic in real data. In other words, the ratio of the higher-order construct/ dimensions variance and dimensions/items variance are considered equal for all observed indicators. By reducing the model to a unique higher-order construct, conventional CFA limits researchers' ability to investigate the relative predictive validity of both the higher-order constructs and its specific dimensions (Morin et al., 2015). This is unfortunate because understanding the specific effects of dimensions is crucial if we are to fully comprehend what contributes to the development of positive outcomes and, ultimately help guidance counselors in their interventions. Notably, this type of CFA makes it difficult to identify which emotional intelligence dimensions are trainable during interventions (Di Fabio & Kenny, 2011; Hodzic et al., 2018). Finally, the first-order CFA (model C in Fig. 8) assumes that each observed indicator loads on a single factor, constraining non-target loadings (i.e., cross-loadings) to zero. These overly restrictive assumptions have been shown to lead to biased parameter estimates (Asparouhov & Muthén, 2009).

In order to address these issues, recent studies have shown the relevance of bifactor models (Blasco-Belled et al., 2020; Nozaki et al., 2019; Palmer et al., 2005) and exploratory structural equation modeling (ESEM; Nozaki, 2019; Perera, 2015) in research on emotional intelligence. Similar claims have recently been made in the vocational literature (Giordano et al., 2020). On the one hand, the bifactor model (model D in Fig. 8) is designed to model a general factor as well as independent dimensions. This model partitions the variance between all items and a general factor in which the residual variance is explained by the specific dimensions (Rodriguez et al., 2016). Therefore, it is possible to evaluate the specific contributions of each dimension while controlling for the variance explained by the general factor. On the other hand, ESEM (model E in Fig. 8) combines exploratory factor analysis, confirmatory factor analysis, and a structural equation modeling framework to model latent variables for multidimensional constructs and is characterized by the possibility of estimating cross-loadings (Asparouhov & Muthén, 2009). Recently, a bifactor- ESEM (model F in Fig. 8) framework has been developed, blending the characteristics of these two separate models (Morin et al., 2015).

Although bifactor-ESEM models have been considered as particularly relevant for examining multidimensional constructs, no studies have yet investigated emotional intelligence through this framework. Additionally, and more importantly, there is no line of research investigating the specific contributions and predictive validity of emotional intelligence over and above the general factor in career development. Accordingly, the present study aimed to extend the measure of emotional intelligence through the adoption of a bifactor-ESEM framework as well as investigate the measurement qualities of emotional intelligence compared with conventional measurement models (e.g., CFA). Moreover, to demonstrate the relevance of bifactor models in the career domains for guidance counseling and interventions, we also aimed to investigate the predictive validity of both the general

factor of emotional intelligence and its dimensions on important career-related outcomes (i.e., emotional exhaustion, work-family conflict, family-work conflict, and career satisfaction).

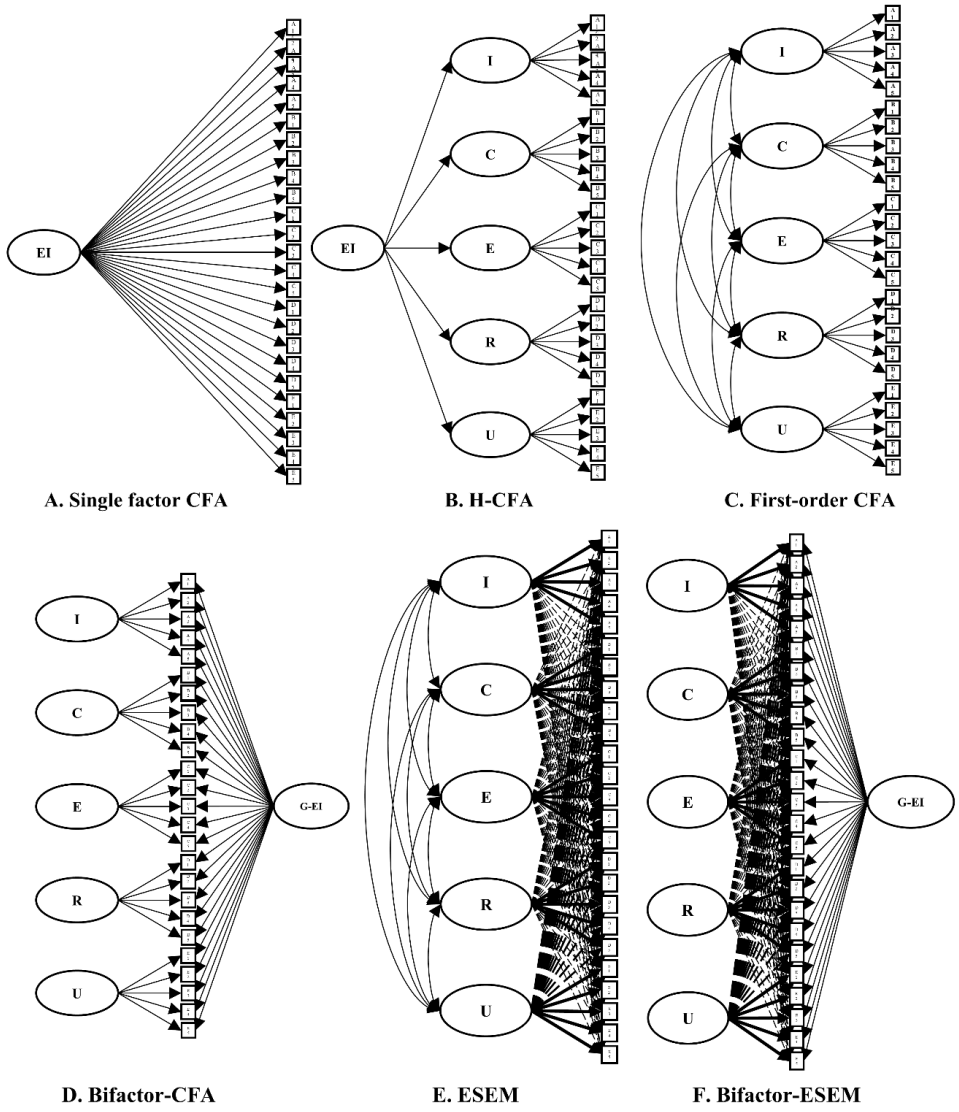


Figure 8. Graphical representation of the alternative measurement models

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1.1 Emotional intelligence

Over the last few decades, a large number of definitions and theoretical models have been proposed for the concept of emotional intelligence. Currently, two major conceptual approaches–ability emotional intelligence and trait emotional intelligence–coexist. Ability

emotional intelligence, which was principally developed by Salovey and Mayer (1990), refers to the mental ability to process emotional information and to use it to guide one's thinking and actions. Salovey and Mayer developed a four-branch ability model that divided emotional intelligence into four abilities: 1) perceiving emotions; 2) using emotions to facilitate thought; 3) understanding emotions; and 4) managing emotions. As for the trait emotional intelligence model, it refers to a panel of emotion-related dispositions rooted in individuals' personalities that influence behavior and adaptation in emotional situations (Petrides & Furnham, 2001). A third wave of scholars have not seen these models in opposition to one another, but have developed mixed models such as Bar-On's model of emotional social intelligence (Bar-on, 2006) which considers other non-cognitive characteristics such as social skills, adaptability, and empathy, among others. To reconcile previous theoretical debates, some authors have developed a fourth kind of model. These are known as integrative models of emotional intelligence and include approaches such as Mikolajczak, Quoidbach, Kotsou, and Nélis' (2009) tripartite model of emotional intelligence. In line with these theoretical developments, we have decided to focus on Mikolajczak et al.'s definition that considers emotional intelligence as the way individuals identify (i.e., ability to identify and differentiate emotions), understand (i.e., ability to understand why individuals feel what they feel and to understand the message conveyed by emotions), express (i.e., express emotions in a socially acceptable manner), regulate (i.e., ability to exert control on own positive and negative emotions), and use emotions (i.e., ability to use emotional information to guide thoughts and behaviors). This particular model offers a state-of-the-art conceptualization and an integrative model of emotional intelligence. The tripartite approach acknowledges three levels of emotional intelligence: knowledge related to emotions, abilities related to emotions, and dispositions related to emotions (Mikolajczak et al., 2009).

Based on the tripartite model of emotional intelligence, Brasseur et al. (2013) have developed the Profile of Emotional Competence (PEC) questionnaire. This scale evaluates the five dimensions in Mikolajczak and collaborators' model at the intrapersonal and interpersonal levels, thereby comprising a total of ten dimensions. The PEC has become widely used in the emotional intelligence domain and demonstrates incremental validity over the Big Five personality traits (Brasseur et al., 2013). However, a recent investigation of the PEC has revealed a poor fit through CFA models (Nozaki et al., 2019). Nozaki et al. (2019) have therefore performed Bayesian structural equation modeling (a close measurement model to ESEM) to examine the PEC's factor structure. Nozaki et al. (2019) have demonstrated that the utilization dimension did not load on the intrapersonal emotional intelligence factor and have also highlighted the importance of differentiating the effect of intrapersonal and interpersonal emotional intelligence. Following this recommendation and based on the assumption that intrapersonal emotional intelligence was more strongly related to health indices (Mikolajczak et al., 2015) and subjective stress (Pekaar et al., 2019), we focused on intrapersonal emotional intelligence in the present study. The investigation of intrapersonal emotional intelligence was also motivated with regard to the dependent variables (i.e., emotional exhaustion, work-family conflict, family-work conflict, and career

satisfaction), which were mainly predicted by the intrapersonal dimension of emotional intelligence in past research.

Emotional intelligence can be conceptualized as a general factor of adaptive functioning because it has been demonstrated to have a significant impact in many different spheres of life, such as physical health (Mikolajczak et al., 2015), mental health (Sánchez-Álvarez et al., 2016), social relationships (Malouff et al., 2014), and work domains (Miao et al., 2017). Research over the last decade has also demonstrated its importance in the career domain. Scholars have shown the positive influence of emotional intelligence with regard to career decision-making processes (Di Fabio & Kenny, 2011), career success (de Haro García & Costa, 2014), and employability (Nelis et al., 2011). Furthermore, research has demonstrated that emotional intelligence was a predictor of self-perceived employability and career decision processes through the mediation effect of career adaptability (Udayar et al., 2018). Studies in this domain have also shown that emotional intelligence was a predictor of career adaptability in longitudinal studies (Parmentier et al., 2019). These results have led researchers to consider emotional intelligence as a key resource in career development because individuals with a high level of emotional intelligence seem to be better at setting career goals, adapt more efficiently to different organizational cultures, develop and understand relationship dynamics as well as anticipate the emotional consequences of career challenges, transitions, and difficulties (Potgieter, 2014).

1.2 The present study

1.2.1 Going step beyond emotional intelligence measurement: A bifactor-ESEM approach

The first objective of this study was to investigate the multidimensionality of emotional intelligence with the intrapersonal subscale of the PEC (Brasseur et al., 2013). More precisely, we aimed to evaluate how the bifactor-ESEM framework presents a better depiction of emotional intelligence construct than conventional measurement models (e.g., CFA). In line with previous research demonstrating the relevance of bifactor models and ESEM in the realm of emotional intelligence (Blasco-Belled et al., 2019; Palmer et al., 2005; Perera, 2015), we expected bifactor-CFA and ESEM to provide a better representation of emotional intelligence compared to conventional CFA. We also expected that a bifactor-ESEM would be the best solution compared to alternative models. Finally, following a recent investigation of the PEC among 14,591 participants (Brasseur et al., 2013; Nozaki et al., 2019), we also expected that the utilization dimension would not load onto the emotional intelligence factor.

1.2.2 The predictive validity of emotional intelligence

A second objective of the present study was to evaluate the extent to which emotional intelligence and the dimensions would predict important career-related outcomes using the bifactor-ESEM framework among a sample of adult learners. In order to attain this objective, we performed bifactor models that took into account the general factor and specific

dimensions as well as offered the possibility of predicting outcome variables to evaluate how each dimension would have a specific contribution while controlling for the general factor. We decided to focus our study on adult learners because this population faces important challenges and career changes. In Belgium, the country in which the research was conducted, the status of "adult learner" encompasses common characteristics. Typically, as adult learners generally experience a career interruption, most of them are older than traditional students and enrolled in a master's degree program between 30 and 35 years old. Also, they have to manage multiple roles simultaneously, such as those of workers, parents, and students, by attending courses outside working hours (Fairchild, 2003). Therefore, beginning an adult education program is a particular event involving a vocational transition and multiple task roles. It is also a challenging period entailing substantial professional development. Despite the specific challenges involved, very few scholars have focused on this particular population. Hence, we aimed to investigate how the general factor and specific dimensions of emotional intelligence (by controlling for the general factor) predict their level of emotional exhaustion, work-family conflict, family-work conflict, and their level of career satisfaction.

1.2.2.1 General predictions about emotional intelligence

The Appendix C11 lists all of our hypotheses. We first hypothesized that having a high level of emotional intelligence would predict a lower level of emotional exhaustion. Our hypothesis was based on the assumption that emotionally intelligent individuals are more able to use appropriate emotional regulation strategies regarding their work, tend to evaluate stressful situations as a challenge rather than a threat, and have confidence in their abilities to face challenging situations (Peña-Sarrionandia et al., 2015). Also, prior research has revealed that increasing emotional intelligence via training decreases the level of job burnout in experimental studies (Karahan & Yalçin, 2009). Second, we hypothesized that having a high level of emotional intelligence would predict a lower level of work-family conflict. Accordingly, Weinzimmer et al. (2017) have shown that individuals with a higher level of emotional intelligence presented a lower level of work-family conflict. These results are explained by the fact that individuals with high emotional intelligence are able to identify the expectations from work and family environments. They are also able to express and regulate their emotions adaptatively, allowing them to respond to work and family expectations. Our third hypothesis was that a high level of emotional intelligence would predict a lower level of family-work conflict. Building on the results of Weinzimmer et al. (2017) and the spillover theory explaining the mutual effects of work and family on one another (Edwards & Rothbard, 2000), we hypothesized that the ability to manage work and family demands at the same time would also lead to a lower level of family-work conflict. Our fourth hypothesis was that a high level of emotional intelligence would predict a higher level of career satisfaction because emotionally intelligent individuals are less anxious and better regulate their emotions during career decision-making processes, leading to more adaptative career-related choices (Emmerling & Cherniss, 2003). In doing so, they choose jobs in accordance with their needs and aspirations, leading to greater career and life satisfaction. An additional objective of our study was to demonstrate the predictive validity of emotional intelligence

dimensions beyond the general factor. We therefore developed specific hypotheses for each dimension of emotional intelligence based on the tripartite model of Mikolajczak et al. (2009).

1.2.2.2 Identification of emotions

With regard to the identification dimension, we first hypothesized that a high level of identification would predict a lower level of emotional exhaustion. Accordingly, a systematic review has demonstrated that a higher level of emotional identification was negatively associated with emotional exhaustion (Mérida-López & Extremera, 2017). This hypothesis was also based on the assumption that individuals with a higher level of identification are better at identifying their emotions. Furthermore, those with lower levels of emotional identification have more adverse outcomes, such as depression due to interpersonal issues (Joormann & Gotlib, 2006). Second, we hypothesized that having a high level of identification would predict a lower level of work-family conflict. Accordingly, prior research has demonstrated that emotion identification has been associated with the quality of interpersonal relationships (Brasseur et al., 2013). Third, we hypothesized that a high level of identification would predict a lower level of family-work conflict. Fourth, we hypothesized that having a high level of identification would predict a higher level of career satisfaction. As emotion is a message of the satisfaction of our needs, Young et al. (1996) have also highlighted that emotional identification is crucial in order to understand our career interests and to carry out actions in accordance with these emotions.

1.2.2.3 Comprehension of emotions

Regarding the comprehension dimension, we first hypothesized that having a high level of comprehension would predict a lower level of emotional exhaustion. Individuals with a higher level of comprehension are more able to understand why they feel and what they experience as well as being able to better comprehend what their emotions mean (e.g., unsatisfied needs). The comprehension dimension has also been recognized as a strong predictor of health outcomes (Mikolajczak et al., 2015). Our hypothesis was also based on prior research demonstrating that the comprehension dimension was associated with a lower level of emotional exhaustion (for a systematic review, see Mérida-López & Extremera, 2017). Second, we hypothesized that having a high level of comprehension would predict a lower level of work-family conflict. Through the comprehension of emotions, individuals with a higher level of comprehension are able to discern what is important for them and act in accordance with their needs in their professional and personal relationships. Thus, understanding and fulfilling needs play a crucial role in interpersonal conflict resolution (Kelman, 1996). Accordingly, we third hypothesized that having a high level of emotion comprehension would predict a lower level of family-work conflict. Finally, Young et al. (1996) assumed that understanding our career needs via our emotions can lead to better career choices. Fourth, we therefore hypothesized that having a high level of comprehension would predict a higher level of career satisfaction.

1.2.2.4 Expression of emotions

Expressing emotions in a socially acceptable manner is also crucial because it regulates social relationships (Keltner & Kring, 1998). During a stressful situation, such socially acceptable expressions limit the risk of having a high workload, and, in the end, emotional exhaustion. Accordingly, we hypothesized that having a high level of expression would predict a lower level of emotional exhaustion. Second, we hypothesized that having a high level of expression would predict a lower level of work-family conflict. Having a high level of emotion expression promotes clear communication between work and family environments, reducing the risk of work-family conflicts. Third, we thus also hypothesized that having high scores on emotion expression would predict a lower level of family-work conflict. Moreover, a higher level of emotion expression can lead to the clearer communication of an individual's career interests and values during career counseling sessions, which in turn can lead to finding a job that meets their expectations (Emmerling & Cherniss, 2003). Finally, we hypothesized that having a high level of expression would predict a higher level of career satisfaction.

1.2.2.5 Emotion regulation

Regarding emotion regulation, we first hypothesized that having a high level of regulation would predict a lower level of emotional exhaustion. Accordingly, prior research has already shown that the ability to regulate emotions moderated the links between job demands and emotional exhaustion (Van de Ven et al., 2013). Second, we hypothesized that having a high level of regulation would predict a lower level of work-family conflict. Brasseur et al. (2013) have already shown that emotion regulation was related to the quality of social relationships. In the same vein, we third hypothesized that having a high level of regulation would predict a lower level of family-work conflict. Fourth, we therefore hypothesized that having a high level of regulation would predict a higher level of career satisfaction. Prior research has also demonstrated that emotion regulation was a predictor of career satisfaction (de Haro García & Costa, 2014). Moreover, a previous study conducted in Belgium with the PEC found that emotion regulation was the most predictive dimension of mental health outcomes (Mikolajczak et al., 2015). Consequently, we also hypothesized that emotion regulation would be the strongest predictor among the different dimensions of emotional intelligence regarding the four career-related variables.

1.2.2.6 Using emotions

Finally, emotion utilization refers to the capacity to use emotional information to guide one's thinking and actions (Salovey & Mayer, 1990). Previous research has noted that a higher level of emotion utilization predicted confidence in achieving one's career goals or predicted regulation in career decision processes (Santos et al., 2018). However, a meta-analysis and other studies have demonstrated that the utilization dimension did not load coherently on the emotional intelligence factor (Fan et al., 2010; Nozaki et al., 2019). Given the diverging and inconsistent results regarding the psychometric properties and construct validity of the utilization dimension, we did not propose specific hypotheses.

2. Method

2.1 Participants

The sample consisted of 445 adult learners, ranging in age from 20 to 61 years old (*Mean age* = 31.08, *SD* =8.67). In the sample, 71% were female (*n* = 316), 24.5% were male (*n* = 109) and 4.5% did not report their gender (*n* = 20). Additionally, 19.8% of the sample was in the first year of their studies. Also, 62.2% were married, 31.9% were single, and 5.8% did not report their marital status. 36.6% of the sample were parents, 57.3% were not, and 6.1% did not report if they had children. Tenure/Job experience ranged from 0 to 34 years (*Mean tenure* = 6.88, *SD* = 7.09). As a proportion of the participants had no job experience (i.e., tenure was 0), we removed their responses for the career satisfaction variable. Among the 445 adult learners, 1.6% of the total sample were partial respondents. The results showed that there were no differences between females and males with regard to age, $t(415) = .1.401$, $p = .162$, tenure, $t(408) = 1.308$, $p = .192$, marital status, $\chi^2(1) = 1.929$, $p = .165$, emotional intelligence $t(423) = 1.195$, $p = .233$, emotional exhaustion $t(420) = -.907$, $p = .385$, work-family conflict, $t(419) = -.736$, $p = .462$, family-work conflict, $t(419) = -.319$, $p = .750$, and career satisfaction, $t(381) = -1.97$, $p = .232$.

2.2 Procedure

The participants were recruited among a sample of adult learners enrolled in a master's degree in Educational Sciences in Belgium. This program was created to develop their knowledge and expertise in the domain of educational sciences. The majority of participants in the program are headteachers, schoolteachers, adult trainers, civil servants, or human resources employees. Adult learners had to enroll in one of four specializations: adult education, teacher education, management of socio-educational organizations, and school-based learning. The participants were invited to respond to the survey during their courses via a paper and pencil questionnaire. The inclusion criteria for participating in the study were enrollment in the Master of Educational Sciences and to speak French. We indicated that the survey was confidential and anonymous. After a first page describing the anonymity and the confidentiality of the study, participants were invited to respond to the different measures. They first completed the career satisfaction items, followed by the work-family and family-conflict items, the emotional exhaustion items, and the emotional intelligence items. The end of the questionnaire was composed of socio-demographic items.

2.3 Measures

2.3.1 Emotional intelligence

Emotional intelligence was assessed in French with the intrapersonal emotional intelligence subscale of the Profile of Emotional Competence (Brasseur et al., 2013, i.e., 25 items). The original measure is a Likert-type scale validated in French, including 50 items ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). In the present study, the scale comprised a global score of intrapersonal emotional intelligence (α = .849, 95% CI [.827;

.869]) and five intrapersonal emotional intelligence dimensions with five items each: identification (i.e., "*I am good at describing my feelings*," α =.72, 95% CI [.678; .761]), comprehension (i.e., "*When I am feeling low, I easily make a link between my feelings and a situation that affected me*," α = .77, 95% CI [.730; .799]), expression (i.e.," If I dislike something, I manage to say so in a calm manner," α = .68, 95% CI [.626; .722]), regulation (i.e., "*I easily manage to calm myself down after a difficult experience*," α = .75, 95% CI [.714; .787]),) and utilization (i.e., reversed, "*I never base my personal life choices on my emotions*," α = .74, 95% CI [.702; .779]).

2.3.2 Emotional exhaustion

Emotional exhaustion was assessed in French with the five-item subscale of the *Maslach Burnout Inventory-General Survey* (MBI-GS; Maslach et al., 2010). To this end, we used a back-translation from the original version to French (Brislin, 1980). A sample item is "*I feel emotionally drained from my work*." This Liker-scale type ranges from 1 (*never*) to 7 (*every day*). Cronbach's α in the present study was .784, 95 % [.750; .815]. The omega coefficient was 0.775, 95% CI [.744; .805]. The one-dimensional model fitted the data satisfactorily in light of the CFI and the SRMR, except for the TLI and the RMSEA (χ^2 (4) = 37.436; p < .001; CFI = .946; TLI = .866; RMSEA = .138 [.099; .179]; SRMR = .040).

2.3.3 Work-family and family-work conflict

Work-family conflict was assessed with the French version of the Survey Work-Home Interference Nijmegen (SWING; Geurts et al., 2005; Hansez et al., 2006). To reduce the length of the survey, we used the three highest loading items from the SWING. This Likert-type scale ranging from 1 (never) to5 (always) evaluates the extent to which participants' work negatively influences the home situation. A sample item is "How often does it happen that you find it difficult to fulfill your domestic obligations because you are constantly thinking about your work?" Cronbach's α in the present study was .848, 95% CI [.821; .871].

Family-work conflict was assessed with the French version of the Survey Work-Home Interference Nijmegen (SWING; Geurts et al., 2005; HANSEZ et al., 2006). To reduce the length of the survey, we used the three highest loading items from the SWING. This Likert-type scale, which ranges from 1 (never) to 5 (always), evaluates the extent to which participants' home lives negatively influence their work. A sample item is "How often does it happen that you do not fully enjoy your work because you worry about your home situation." Cronbach's α in the present study was .852, 95% CI [.827; .875]. The omega coefficient for both factors was .932, 95% CI [.925; .939]. The two-dimensional model fitted the data well (χ2(8) = 31.454; p < .001; CFI = .983; TLI = .969; RMSEA= .082 [.053; .113]; SRMR= .037).

2.3.4 Career satisfaction

Career satisfaction was assessed with the French version of the Career Satisfaction Scale (Bravo-Boussy, 2005; Greenhaus et al., 1990). This measure is a Likert-type scale, including 5 items ranging from 1 (*strongly disagree*) to7 (*strongly agree*). This scale evaluates the

extent to which participants are satisfied with the success achieved in their career and the progress made to reach their career goals. A sample item is "*I am satisfied with the success I have achieved in my career.*" Cronbach's α in the present study was .852, 95% CI [.827; .875]. The omega coefficient was 0.824, 95% CI [.835; .873]. The one-dimensional model fit the data satisfactorily in light of most of indices, except for the RMSEA ($\chi^2(5) = 34.041$; $p < .001$; CFI = .971; TLI = .941; RMSEA = .113 [.077; .153]; SRMR= .026).

3. Results

3.1 Assessment of the alternative measurement models

Statistical analyses were conducted using the M*plus* 8 maximum likelihood estimator (ML) and followed a three-step strategy. This estimation method is recommended when the number of answer categories is higher than five (Rhemtulla et al., 2012). The first step involved the modeling and the comparison of eight alternatives: (1) a higher-order confirmatory factor analysis (H-CFA), composed of five first-order factors (i.e., five dimensions of emotional intelligence) with a second order factor representing the factor of emotional intelligence in which no cross-loadings were allowed; (2) a first-order confirmatory factor analysis, composed of five core related dimensions (CFA) in which no cross-loadings were allowed; (3) a method factor model for the H-CFA and the CFA in order to take into account the negative wording of items (Podsakoff et al., 2003); (4) a bifactor-CFA, in which all items were allowed to define a general factor and five specific factors but no cross-loadings were allowed; (5) a random intercept factor analysis (RIFA), in which the random intercept factor represented common method variance (e.g., social desirability; Maydeu-Olivares & Coffman, 2006); (6) an ESEM model composed of five correlated dimensions in which cross-loadings were allowed but constrained as close as possible to zero; and (7) a bifactor-ESEM model, combining bifactor-CFA and ESEM models specificities. Model(s) fit(s) was assessed with several goodness-of-fit statistics in order to evaluate model comparisons: the Comparative Fit Index (CFI), the Tucker Lewis Index (TLI), the Root Mean Square Error of Approximation (RMSEA) with a 90% confidence interval, and the Standardized Root Mean Residual (SRMR). CFI and TLI have to be greater than 0.90 to support an acceptable fit. Also, the RMSEA and the SRMR have to be smaller than 0.08 to support an acceptable fit of the data (Hu & Bentler, 1999). To compare the alternative models, we also analyzed the information criteria (AIC, CAIC, BIC, ABIC), where the lower values inform which model(s) fit the data better.

Table 8. Goodness-of-fit indices of alternative measurement models of emotional intelligence

Models	χ^2 (df)	CFI	TLI	RMSEA (90% CI)	SRMR	AIC	BIC	CAIC	ABIC
H-CFA	1,166.013* (270)	.766	.739	.086 (.081-.091)	.097	38,070	38,398	38,478	38,144
CFA	1,128.844* (265)	.774	.744	.086 (.080-.091)	.092	38,043	38,391	38,476	38,121
MF-H-CFA	957.271* (259)	.817	.788	.078 (.073-.083)	.100	37,883	38,256	38,347	37,967
MF-CFA	869.38* (254)	.839	.810	.074 (.068-.079)	.080	37,805	38,199	38,295	37,894
RIFA	943.399* (264)	.822	.798	.076 (.071-.081)	.100	37,859	38,212	38,298	37,939
Bifactor-CFA	804.437* (250)	.855	.826	.071 (.065-.076)	.073	37,748	38,158	38,258	37,841
ESEM	409.294* (185)	.941	.905	.052 (.045-.059)	.029	37,483	38,159	38,324	37,636
Bifactor-ESEM	313.662* (165)	.961	.929	.045 (.037-.053)	.025	37,427	38,186	38,371	37,598

Note. H-CFA = higher order confirmatory factor analysis; CFA = first order confirmatory factor analysis; MF = method factor; RIFA = random intercept factor analysis; ESEM = exploratory structural equation modeling; df = degrees of freedom; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root mean square error of approximation; CI = confidence interval; SRMR = standardized root mean residual; AIC = Akaike information criterion; BIC = Bayesian information criterion; CAIC = constant AIC; ABIC = sample size adjusted BIC.

* $p < 0.001$

The goodness-of-fit indices for the eight alternative models of emotional intelligence are reported in Table 8. The H-CFA, CFA, and bifactor-CFA fitted the data unsatisfactorily (CFI and TLI < .80; RMSEA and SRMR > .08). However, both the ESEM and bifactor-ESEM models revealed a good fit which significantly improved compared to alternative models. As expected for the method factor and RIFA models, the bifactor-CFA, ESEM, and bifactor-ESEM models presented a better fit. These results indicated that the general factor in the bifactor models did not represent a common method variance, such as social desirability or acquiescence.

Table 9. Standardized factor correlations for the CFA (above the diagonal) and ESEM (below the diagonal) solutions

		1	95% CI	2	95% CI	3	95% CI	4	95% CI	5	95% CI
1.	Identification	–	–	.72***	[.66 ; .78]	.81***	[.75 ; .87]	.45***	[.36 ; .54]	.18**	[.08 ; .23]
2.	Comprehension	.36***	[.29; .44]	–	–	.55***	[.47; .63]	.42***	[.34; .51]	–.06	[–.16 ; .03]
3.	Expression	.37***	[.28; .46]	.45***	[.39; .52]	–	–	.49***	[.40; .58]	.15*	[.05 ; .25]
4.	Regulation	.31***	[.23; .38]	.35***	[.27; .42]	.27***	[.20; .35]	–	–	–.11	[–.20 ; –.01]
5.	Utilization	.23***	[.16; .30]	.13***	[.21; .05]	–.01	[-.09; .08]	–.09	[–.17; –.01]	–	–

Note. * p <0.05. ** p<0.01. *** p<0.001. CI = confidence interval of standardized factor correlations

As each model is able to absorb unmodeled sources of construct-relevant multidimensionality, an examination of the different models at the goodness-of-fit indices-level and the statistical and theoretical conformity-levels is important. After comparing the fit, Morin et al. (2015) proposed examining CFA to ESEM solutions. In these models, factors are correlated, but the importance of examining them relates to the modeling of cross-loadings. When the results show a different pattern of factor correlations, the ESEM solution

should be retained. The second comparison involves contrasting the retained model with its bifactor modeling (bifactor-CFA or bifactor-ESEM). Here, selecting a bifactor model relates to the observation of a well-defined general factor by strong factor loadings and the observation of lower values for cross-loadings in a bifactor-ESEM solution compared to an ESEM solution. Factor loadings and item residuals for H- CFA, CFA, ESEM, bifactor-CFA, and bifactor-ESEM are reported in Tables C2, C4, C5, C6, and Table 10, respectively.

The factor correlations for CFA and ESEM solutions are reported in Table 9. Regarding the factor correlations between the CFA and the ESEM solutions, the ESEM solution presented lower values compared to the CFA, demonstrating the inflation of factor correlations in CFA models. As expected, results also showed positive correlations among the different emotional intelligence dimensions, with the exception of the utilization dimension. The H-CFA also revealed that the utilization dimension did not load onto the general factor of emotional intelligence.

Regarding the bifactor-CFA and bifactor-ESEM solutions, we observed that all items loaded positively and significantly on the general factor of emotional intelligence. However, a series of items of the utilization dimension in both solutions did not load significantly on the general factor. When items loaded significantly, they sometimes loaded negatively. Regarding the specific dimensions, all items did not load on their specific factor in the bifactor-CFA (i.e., identification and comprehension). In the bifactor-ESEM solution, reported in Table 10, items did not load on their specific dimension for the identification dimension, and two items did not load on their specific dimension for the comprehension dimension. These results indicate that the general factor explains the majority of the variance for identification and comprehension items. For expression, regulation, and utilization dimensions, all items loaded on their specific dimension (except for item C2 in the bifactor-CFA solution), suggesting their specific contribution over and above the general factor.

Table 10. factor loadings (λ), item residuals (δ) and psychometric indices for bifactor-ESEM

Items	# of items	λ						δ	I-ECV
		General factor	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5		
1. Identification									
Item A1	6	**.50*** **	**–.17**	–.18**	–.06	-.09	.21***	.63***	.68
Item A2	16	**.65*** **	**–.03**	.02	.01	.04	.15***	.55***	.94
Item A3	20	**.44*** **	**.15**	.01	–.05	.03	–.08	.77***	.85
Item A4	48	**.63*** **	**–.02**	–.08*	–.08	–.15***	.13*	.55***	.88
Item A5	49	**.80*** **	**.21**	.13	–.00	-.07	-.08*	.29***	.89
2. Comprehension									
Item B1	1	**.53****	.01	**.65*** **	–.05	.02	–.05	.29***	.40
Item B2	2	**.55*** **	–.11	**.78*** **	.02	.04	–.09*	.06	.33
Item B3	10	**.48*** **	–.23	**–.09**	–.09	–.09	.19***	.66***	.67
Item B4	26	**.56*** **	.30***	**.20**	.16	.05	–.14**	.51***	.64
Item B5	43	**.60*** **	.26**	**.24***	–.01	.02	-.02	.51***	.74
3. Expression									
Item C1	8	**.66*** **	-.17	–.12*	**.21****	.03	.07	.47***	.82
Item C2	17	**.39*** **	-.11	.03	**.19****	.26***	.04	.73***	.56
Item C3	25	**.54*** **	.04	.03	**.57*** **	.00	–.07*	.37***	.46
Item C4	38	**.28*** **	.08	–.04	**.58*** **	–.11*	.14*	.57***	.19
Item C5	42	**.27*** **	.04	.17**	**.28****	.12*	–.02	.80***	.37
4. Regulation									
Item D1	12	**.32*** **	–.03	.05	–.12**	**.72*** **	–.06	.35***	.16
Item D2	15	**.34*** **	.07	–.05	.00	**.61*** **	–.07	.49***	.23
Item D3	37	**.51*** **	.20***	.19*	.11	**.30*** **	–.20***	.52***	.54
Item D4	39	**.32*** **	–.04	–.01	.14**	**.67*** **	–.07	.42***	.18
Item D5	50	**.26*** **	–.17**	.06	–.02	**.25*** **	.04	.83***	.41
5. Utilization									
Item E1	9	**–.14**	.31***	.09	.16	–.22**	**.50*** **	.56***	.04
Item E2	21	**.04**	–.02	.02	.02	.05	**.73*** **	.46***	.01
Item E3	22	**.29*** **	–.17	–.16*	–.14	–.09	**.41*** **	.69***	.26
Item E4	24	**.06**	–.11	–.14**	–.01	–.02	**.72*** **	.44***	.01
Item E5	41	**.16***	–.09	-.07	–.04	–.08	**.07*** **	.47***	.05

Note. Items which have a non-target factor loading and higher than their target loadings are underscored. Factor loadings of items on their target factor(s) are in bold. For each factor, significant non-target loadings which are higher than at least one target loadings are in italic.

* $p < 0.05$.

** $p < 0.01$.

We then followed Rodriguez et al.' (2016) recommendations by examining other indices, namely explained common variance (ECV) at factor and item-level and omega coefficients (omega (ω), omegaS (ωS), omegaH (ωH), omegaHS (ωHS) and relative omega). It is also recommended to examine the percentage of uncontaminated correlations (PUC) in conjunction with the ECV. A description and the cut-off values of these additional indices are reported in Table C9.

The psychometric indices of the bifactor-CFA and bifactor-ESEM are also reported in Table C7 and C8, respectively. First, the general factor of emotional intelligence accounted for 47% of explained common variance for the bifactor-CFA (ECV = .47) and 43% for the bifactor-ESEM solution (ECV = .43). The average of explained common variance at item-level was .53 for the bifactor-CFA and .45 for the bifactor-ESEM. The PUC in the present

study was .83. As an ECV superior to .70 in conjunction with a PUC superior to .70 supports the unidimensionality of the construct (Rodriguez et al., 2016), our results, on the whole, supported the multidimensionality of the emotional intelligence construct and the relevance for investigating the different dimensions. Regarding the omega coefficients, ω values were high for the general factor and acceptable for five dimensions (ω > .70), indicating good reliability. However, the dimensions accounted for less reliable variance (ωHS for bifactor-CFA = .16–.50, ωHS for bifactor-ESEM= .00–.07)—with the exception of the utilization dimension in the bifactor-CFA (ωHS =.76)—in comparison to the general factor (ωH for bifactor-CFA = .73, ωH for bifactor-ESEM= .74). Regarding the relative omega, the general factor accounted for the most reliable variance compared to dimensions, except for the utilization dimension in the bifactor-CFA (.99). This indicated that 99% of the reliable variance in the utilization dimension is independent of the general factor in the bifactor-CFA versus 8% in the bifactor-ESEM.

In summary, our results supported the importance of considering the multidimensionality of the emotional intelligence construct, even if the general factor accounted for a larger part of the reliable variance. As the bifactor-ESEM fitted the data well and presented a better statistical and theoretical conformity with regard to our construct, we thus retained this model for investigating the predictive power of the general factor and the specific dimensions while controlling for the general factor simultaneously with the career-related variables.

3.2 Emotional intelligence and the prediction of career-related variables with the bifactor-ESEM

Finally, we tested with the bifactor-ESEM framework how the specific effects and incremental validity of emotional intelligence dimensions predicted important career-related outcomes while controlling for the general factor. To this end, we performed a structural equation model analysis in which the general factor and the dimensions predicted emotional exhaustion, work-family conflict, family-work conflict, and career satisfaction. We analyzed regression coefficients from the general factor and dimensions (i.e., identification, comprehension, expression, regulation, and utilization) for each career-related outcome. To test whether emotion regulation was the strongest predictor in comparison to other dimensions and the general factor, we performed a Wald test by constraining parameters to equality. The standardized regression coefficients of the structural equation model are reported in Table 11. For the measurement model, the model fitted the data well ($\chi^2(639) = 1026.86$; p <.001; CFI =.945; TLI = .930; RMSEA = .037 [.033; .041]; SRMR= .040). All the indicators of the career-related outcomes loaded on their a priori factors, with standardized loadings ranging from .53 to .74 for emotional exhaustion; .79 to .85 for work-family conflict; .84 to .90 for family-work conflict and .63 to .87 for career satisfaction. We therefore examined the impact of emotional intelligence on the four different constructs. As expected, the general factor of emotional intelligence negatively predicted emotional exhaustion ($\beta = -.21$, $p < .001$), work-family conflict ($\beta = -.11$, $p < .05$), family-work conflict (β −.29, i < .001), and positively predicted career satisfaction (β =.23, $p < .001$). Regarding the specific dimensions, comprehension negatively predicted emotional exhaustion ($\beta = -.27$,

$p < .001$), work-family conflict ($\beta = -.21$, $p < .001$) and family-work conflict ($\beta = -.12$, $p < .05$) over and above the impact of the general factor of emotional intelligence but not career satisfaction. Moreover, regulation negatively predicted emotional exhaustion ($\beta = -.36$, $p < .001$) and work-family conflict ($\beta = -.15$, $p < .001$) but not family-work conflict and career satisfaction. The Wald test results also showed that regulation was the strongest predictor of emotional exhaustion with regard to identification (Wald statistic $\chi^2(1) = 24.33$, $p < .001$), comprehension (Wald statistic $\chi^2(1) = 21.29$, $p < .001$), expression (Wald statistic $\chi^2(1) = 11.52$, $p < .001$), utilization (Wald statistic $\chi^2(1) = 73.63$, $p < .001$), and the general factor of emotional intelligence (Wald statistic $\chi^2(1) = 34.72$, $p < .001$). Additionally, the Wald test results also showed that regulation was the strongest predictor of work-family conflict with regard to identification (Wald statistic $\chi^2(1) = 173.14$, $p < .001$), and utilization (Wald statistic $\chi^2(1) = 91.41$, $p < .001$), but not for comprehension (Wald statistic $\chi^2(1) = .02$, $p = .90$), expression (Wald statistic $\chi^2(1) = 2.21$, $p = .14$) and the general factor of emotional intelligence (Wald statistic $\chi^2(1) = 1.85$, $p = .17$). Finally, the utilization dimension positively predicted family-work conflict ($\beta = .14$, $p < .05$). Contrary to our hypothesis, identification and expression dimensions did not predict career-related outcomes.

Table 11. Structural equation modeling results with the bifactor-ESEM predicting emotional exhaustion, work-family conflict, family-work conflict, and career satisfaction by emotional intelligence

	EI-Factor	Identification	Comprehension	Expression	Regulation	Utilization	
	β (*SE*)	*β* (*SE*)	*β* (*SE*)	*β* (*SE*)	*β* (*SE*)	*β* (*SE*)	R^2
Emotional exhaustion	–.21 (.06)***	–.10 (.08)	–.27 (.06)***	–.03 (.06)	–.36 (.06)***	.04 (.05)	.26
Work-family conflict	–.11 (.06)*	–.02 (.08)	–.21 (0.05)***	–.09 (.07)	–.15 (.06)**	.02 (.06)	.09
Family-work conflict	–.29 (.05)***	.13 (.08)	–.12 (.06)*	–.11 (.07)	–.11 (.06)	.14 (.05)**	.16
Career satisfaction	.23 (.05)***	.05 (.08)	.02 (.06)	.02 (.07)	.08 (.06)	.04 (.06)	.07

Note. *β* = standardized regression coefficients; *SE* = standard errors; R^2 = proportion of explained variance.
* $p < 0.05$
** $p < 0.01$
*** $p < 0.001$

4. Discussion

In attempting to further current emotional intelligence measurement in relation to career development, our study's objectives were twofold. The first objective was to demonstrate the added value and the relevance of the bifactor-ESEM framework for the study of the emotional intelligence construct compared to other measurement models. Based on recent studies demonstrating that bifactor models (Blasco-Belled et al., 2019; Palmer et al., 2005) and ESEM (Perera, 2015) allow for a more valid structure of emotional intelligence compared to conventional CFA, we propose a novel way of investigating emotional intelligence by unifying both models. The second objective was to test the predictive validity of emotional intelligence by differentiating the specific effects of dimensions over and above the general

factor of emotional intelligence on important career-related outcomes (i.e., emotional exhaustion, work-family conflict, family-work conflict, and career satisfaction) for the population of our interest, that is, adult learners. Building on previous research that has demonstrated the importance of intrapersonal emotional intelligence on different outcomes, such as physical health and the subjective experience of stress (Mikolajczak et al., 2015; Pekaar et al., 2019), we decided to investigate the intrapersonal dimension(s) of the Profile of Emotional Competence (Brasseur et al., 2013).

Our results demonstrate the superiority of the ESEM compared to the CFA, which resulted in a better fit, lower factor correlations, and higher discriminant validity between the dimensions. As previously highlighted by Perera (2015), the ESEM framework provides a better representation of the multidimensional structure of emotional intelligence because it takes into account the possibility that items load on more than one construct. Our results also echo the findings of previous research that has demonstrated that conventional CFA represents poorly multidimensional constructs. In addition to a better fit, our results exhibit lower factor correlations. This is consistent with simulation studies demonstrating that factor correlations in CFA can be inflated (e.g., Marsh et al., 2013). With regard to parameter estimates, we also show that different items were strongly loaded on other non-target dimensions.

Apart from our examination of the CFA and ESEM solutions, we also observe negative loadings between the utilization dimension and the general emotional intelligence factor in the H-CFA. Furthermore, our results show negative factor correlations between the utilization dimension and other dimensions. Previous researchers have already questioned the relevance of the utilization dimension in the conceptualization of the emotional intelligence construct. For example, Palmer et al. (2005) demonstrated that the utilization dimension explained nothing more than the general factor in a bifactor-CFA model. A meta-analysis has also supported the argument that using one's own emotion and emotion perception tapped into the same underlying dimension (Fan et al., 2010). This result led the researchers to remove the utilization dimension from the Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT, Salovey & Mayer, 1990).

With regard to the bifactor-CFA model, results show a better fit in the present study than conventional CFA and method factors but is still below the traditional cut-off. This model has been, however, promoted in the domain of emotional intelligence (Blasco-Belled et al., 2019; Palmer et al., 2005) and in the vocational literature (Giordano et al., 2020). This model allows for the partitioning of the total covariance among items into a general factor underlying all items as well as specific factors explaining the residual covariance, which is not explained by the general factor (Rodriguez et al., 2016). In other words, this model offers the possibility of evaluating the specific contribution and variance explained by the dimensions while controlling for the variance already explained by the general factor. To ascertain that the general factor did not represent a common method variance (e.g., social desirability or acquiescence), we performed a RIFA. This model, which has quite a similar structure to the bifactor model, constrains factor loadings to one between the general factor and observed indicators but allows for the intercept to be freely estimated across participants.

Our results show that the bifactor models fitted the data better than the RIFA, indicating that the general factor of emotional intelligence does not represent a common factor such as acquiescence.

Our research is also the first to compare a bifactor-CFA model and ESEM model, but the superiority of the ESEM with regard to the fit is probably linked to the restriction of cross-loadings to zero, which has been related to measurement problems in other areas involving multidimensional constructs (e.g., Morin et al., 2015). However, the relevance of the general factor of emotional intelligence is crucial for distinguishing the specific effect of the dimensions while controlling for the general factor. We therefore investigated a bifactor-ESEM solution, combining the best of bifactor-CFA and ESEM models. We first observe that the bifactor-ESEM had a better fit compared to alternative models. We also compared a bifactor-CFA solution to a bifactor-ESEM solution. Results also show that factors for the identification dimension loaded only on the general factor but not on the specific factor of identification. These results indicate that the identification dimension was mainly explained by the general factor and that the specific dimension explains little to no variance. This is surprising because prior research has demonstrated the incremental validity of identification dimension in comparison to the general factor of emotional intelligence (Palmer et al., 2005). Other studies have however found a negative association between identification and life satisfaction (Blasco-Belled et al., 2019). We also observe that factors for the utilization dimension did not load as coherently as the other dimensions onto the general factor (i.e., sometimes negatively). More precisely, most utilization items loaded on the utilization dimension but not on the general factor. Palmer et al. (2005) have already shown that the utilization dimension explained nothing more than the general factor of emotional intelligence. Our results therefore question the relevance of the utilization dimension in the models of emotional intelligence. As previously explained in relation to the ESEM solution, our results with the bifactor-ESEM do not support the hypothesis of Nozaki et al. (2019), suggesting that the utilization facet would be expressed by another dimension(s). If this were the case, the a priori utilization items would have mainly loaded positively and significantly on other dimensions. However, our results do not suggest that the utilization dimension was a distinct dimension either because some items loaded significantly onto the general factor of emotional intelligence. Future research is therefore needed to shed light on the identification and utilization dimensions in order to demonstrate if these dimensions are distinct dimensions of emotional intelligence or whether individuals identify and use their emotions with another dimension(s).

As Rodriguez et al. (2016) have highlighted, a large majority of the research in this field has relied only upon a "good fit" to conclude that bifactor models are superior to alternative models. However, a close examination of parameter estimates and additional psychometric indices (i.e., ECV, PUC, and omega coefficients) is crucial if we are to conclude which model should be retained. We demonstrate that the ECV and the sum of I-ECV indices supported the multidimensionality of our construct. Moreover, results from the omega coefficients supported that the general factor, which did not appear to be a method common variance, accounted for a larger part of the reliable variance. Following Rodriguez and collaborators'

(2016) recommendations, the PUC also has to be analyzed in conjunction with the ECV in order to determine the unidimensional/multidimensional nature of the construct. Our results did not provide enough clear information to make such a determination in this case. It appears that the emotional intelligence construct evaluated with the PEC support a multidimensional construct with a substantive and strong general factor. Thus, we decided to retain the bifactor-ESEM model for its theoretical and statistical relevance.

Based on these conclusions, we evaluated whether specific dimensions made a specific contribution while controlling for the general factor regarding career-related variables. As expected, the results from the structural equation modeling show that the general factor of emotional intelligence negatively predicted emotional exhaustion. These results are in line with previous experimental studies which show that emotional intelligence is a strong predictor and protective factor for job burnout (Karahan & Yalçin, 2009). Moreover, the general factor also negatively predicted work-family and family-work conflict, in agreement with prior research which has demonstrated that emotional intelligence is a significant predictor of work-life balance and well-being outcomes (Weinzimmer et al., 2017). Emotionally intelligent individuals can better manage the stress involved in their multiple roles because they implement appropriate emotion regulation strategies and have confidence in their capacities to face differing environmental demands (Peña-Sarrionandia et al., 2015).

Finally, the general factor positively predicted career satisfaction in accordance with research demonstrating the effect of a general factor of emotional intelligence with bifactor-CFA on life satisfaction (Blasco-Belled et al., 2019). Individuals with a higher level of emotional intelligence tend to be less anxious during career decision processes, which leads them to choose jobs in accordance with their career aspirations and needs (Emmerling & Cherniss, 2003).

Concerning the dimensions, we observe that comprehension negatively predicted emotional exhaustion, work-family conflict, and family-work conflict. As explained by Clore et al. (2009), emotion is important information for humans. Emotionally intelligent individuals are more capable of using this information to determine their needs, guide their judgment, and make important decisions according to their needs. They are also more competent in determining the needs underlying the trigger of particular emotional situations. However, comprehension did not predict career satisfaction, which is consistent with de Haro García and Costa (2014).

In line with our hypothesis, regulation negatively predicted emotional exhaustion and was the strongest predictor compared to the general factor and other dimensions. Regulation also predicted work-family conflict (and was a stronger predictor than identification and utilization) but not family-work conflict and career satisfaction. Based on previous studies, it is not surprising that regulating one's own emotions had a specific effect over and above the general factor of emotional intelligence. Previous longitudinal studies have, for example, demonstrated that the ability to seek emotional support—an emotional regulation strategy—during a period of distress at work moderates the effect of emotional job demands on emotional exhaustion (Van de Ven et al., 2013). Additionally, the ability to regulate one's

own emotions was associated with the quality of social relationships (Brasseur et al., 2013). Mikolajczak et al. (2015) also demonstrated that regulation was the strongest predictor of mental health outcomes.

Finally, utilization positively predicted family-work conflict, suggesting that using one's own emotions to guide thoughts and behaviors predicts more conflict in the work environment related to family life. Individuals who are more adept at using their emotions may be able to identify their needs better and, as a result, spend more time with the family, leading to negative outcomes in the work sphere. At the same time, the utilization dimension displayed an incoherent pattern in our measurement models. The results from the bifactor-ESEM solution suggest that it might be necessary to reconsider the utilization dimension in Mikolajczak et al.'s (2009) tripartite model of emotional intelligence. Negative correlations and the analyses of psychometric indices suggest that utilization is possibly a separate concept of emotional intelligence, which can lead to divergent results. Future investigation will be needed to clarify this.

4.1 Limitations and future directions

The current study is not without limitations. First, our study was mainly composed of adult learners. Even if our objective was to target a specific population confronted with multiple challenges, future research should aim to replicate our findings in other professions and adult learners' situations. Second, our study was cross-sectional. It thereby excluded the possibility of determining the directionality of the effects between emotional intelligence and career-related outcomes. Future research should focus on longitudinal designs to evaluate how the general factor of emotional intelligence and its dimensions will fluctuate across time and in relation to career-related outcomes. Third, several fit indices of the one-dimensional models were below the traditional cut-offs. Although these career-related outcomes were validated in the literature and our general model for the structural regression fitted the data well, it would be worthwhile to evaluate whether adjustments of these scales could be beneficial for the adult learners population. Fourth, there may be potential limitations in the ESEM and bifactor-ESEM models because there is a lack of a priori hypothesizing regarding cross-loadings. Bayesian ESEM has already been used in relation to emotional intelligence with the PEC to address this issue (Nozaki et al., 2019). Even if the Bayesian ESEM model allows for directly estimating a priori cross-loadings, the main limitation is the absence of goodness-of-fit indices, which leads to difficulties in comparing alternative models and in-variance constraints. Fifth, our research has mainly investigated the intrapersonal domain of emotional intelligence. However, past research has shown the importance of interpersonal emotional intelligence in vocational literature (Santos et al., 2018). Future research is needed to investigate the specific contributions of interpersonal emotional intelligence dimensions over and above the general factor of emotional intelligence and differentiate the specific effects between intrapersonal and interpersonal emotional intelligence in career development. Sixth, our results question the reliability and validity of the PEC. Previous authors have also pointed out the difficulty in disentangling the specific effects of the different dimensions due to their closeness and the high number of dimensions when using

the PEC (Pekaar et al., 2018). Even if the current study addressed this issue, our results also demonstrate the necessity of developing a more parsimonious emotional intelligence model. To this end, the Rotterdam Emotional Intelligence Scale provides a relevant alternative. Recent studies using this scale have demonstrated the capacity to differentiate the specific effect of the intrapersonal and interpersonal dimensions of emotional intelligence (Pekaar et al., 2019). This scale also displayed a good convergent validity with the PEC. The bifactor-ESEM framework could also be applied to the Trait Emotional Intelligence Questionnaire and the MSCEIT to provide additional evidence on their factor structure (Petrides & Furnham, 2001; Salovey & Mayer, 1990). Finally, even if additional psychometric indices have been proposed to evaluate the multidimensional/unidimensional nature of constructs (Rodriguez et al., 2016), clear cut-off values are still scarce within the current literature (e.g., omegaHS). Thus, the theory remains crucial when it comes to making decisions about the nature of the construct. In the present study, the ECV was below .70, but the PUC was superior to .80. We found no clear indications as to how we might have solved this issue in the literature. Moreover, few studies have examined how psychometric indices (e.g., relative omega) are calculated when cross-loadings are computed in the model estimation. Although bifactor models address several issues concerning conventional measurement models, future research is needed to clarify and advance statistical guidelines for bifactor models further.

In spite of the present limitations, the current study provides important information for future research and emphasizes the significance of emotional intelligence in career development. At a theoretical level, this study supports the argument for considering emotional intelligence as a multidimensional construct composed of a strong general emotional intelligence factor and specific dimensions. Recent studies call for using bifactor models when analyzing emotional intelligence (Blasco-Belled et al., 2019; Palmer et al., 2005) and the ESEM framework (Perera, 2015). To the best of our knowledge, our study is the first to unify the best of both worlds. Our results, therefore, suggest investigating the role of emotional intelligence through the bifactor-ESEM framework in future research.

At a practical level, our results indicate that relying upon the general factor and its specific dimensions offers an important resource for guidance counselors and their future interventions in career counseling. As emotional intelligence has been recognized as a malleable self-regulatory resource that can be improved in a wide range of domains (Hodzic et al., 2018), developing interventions based on bifactor-ESEM will bring crucial practical information. More specifically, our study suggests that it is important to train all dimensions to increase the global level of emotional intelligence, particularly the comprehension and regulation dimensions, to reduce emotional exhaustion, work-family conflict, and increase career satisfaction. Future research is needed to shed light on the dimensions that have a contribution over and above the general factor in order to implement tailor-made interventions according to career-related outcomes.

Finally, the current investigation also promotes the importance of emotional intelligence in adult education contexts. Adult learners hold the dual role of worker and student, in addition to family demands (Fairchild, 2003). At the same time, they have to cope with significant career issues during their training (Vertongen et al., 2009). The current study has

shown that a higher level of emotional intelligence (and particularly emotion comprehension and emotion regulation) predicts a lower level of emotional exhaustion, work-family and family-work conflict, and a higher level of career satisfaction. As emotional intelligence can be taught (Hodzic et al., 2018), career counselors who work with adult learners could be particularly attentive to their emotional difficulties and help them develop appropriate emotion regulation strategies throughout their studies. Emotional intelligence also deserves greater attention within school settings and in educational policies in order to develop emotional intelligence training that will help adult learners develop sustainable careers.

Chapter 6

Emotional intelligence profiles and job search-related outcomes in the context of the school-to-work transition

The current study adopted a person-centered approach to explore emotional intelligence profiles among 1520 university students and investigated whether different combinations of self-focused (i.e., intrapersonal) and other-focused (i.e., interpersonal) emotion awareness and regulation emerged between female and male university students. We also examined the relations of these profiles with job search self-efficacy and job search clarity. Four distinct profiles emerged for the female and male students. Although the female students displayed higher levels of interpersonal skills and lower levels of intrapersonal skills compared to male students, the person-centered approach used in the present study demonstrated a more nuanced picture regarding gender differences. Indeed, the female student profiles also presented differences with regard to the intrapersonal dimensions, whereas the male students profiles also presented differences with regard to the interpersonal dimensions. In addition, these profiles predicted job search self-efficacy significantly for the female and male students, but they predicted only job search clarity among the male students. These results provide evidence about the importance of differentiating profiles of emotional intelligence between female and male students and to be particularly attentive to gender stereotypes. Second, these results open new avenues for tailor-made career counseling interventions for university students facing the school-to-work transition.

Reference

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Chapter 6

Emotional intelligence profiles and job search-related outcomes in the context of the school-to-work transition

1. Introduction

The transition from schooling to employment is a pivotal and uncertain period for students' career development (Krahn et al., 2015). The preparation of leaving university life for a full-time job involves many challenges, such as developing clear career goals, making important career decisions, and anticipating and preparing for entry into the world of work (Porfeli & Lee, 2012). This period may lead to the experience of various emotions that could influence career choices and career behaviours (Kidd, 1998). In this sense, emotional intelligence has received increasing attention as an important meta-competency to respond adaptively to career events such as the school-to-work transition (Coetzee & Beukes, 2010; Potgieter, 2014).

Previous experimental studies have shown that developing emotional intelligence increases university students' employability (Nelis et al., 2011) and well-being (Schoeps et al., 2020). In the career field, emotional intelligence has been demonstrated to be a predictor of career adaptability (Parmentier et al., 2019), career decision-making processes (Di Fabio & Saklofske, 2014), and career satisfaction (Pirsoul et al., 2021). These studies have used mainly variable-centered approaches and explored how individuals differed in their mean levels of emotional intelligence (i.e., low or high emotional intelligence) and how these mean levels predicted different outcomes. However, they did not investigate the various combinations of emotional intelligence dimensions (i.e., profiles of emotional intelligence) and how these combinations might predict career and educational outcomes. In this respect, person-centered approaches are more suitable for addressing these issues. Accordingly, Keefer et al. (2012) revealed the emergence of 5 distinct emotional intelligence profiles among university students. Being in a profile characterized by higher levels of emotional intelligence dimensions was also associated with positive educational outcomes such as degree completion.

Additionally, a long and tenacious debate exists about gender differences. On the one hand, some research has shown a higher level of general emotional intelligence in situational tests for females. On the other hand, no significant differences were found regarding self-report measures (for a meta-analysis, see Joseph & Newman, 2010). When exploring differences at the dimension level, females tended to report a higher level of interpersonal skills, whereas males tended to report a higher level of intrapersonal skills (Brasseur et al., 2013; Parker et al., 2011; Petrides & Furnham, 2000a). To the best of our knowledge, only

one study has investigated gender differences in emotional intelligence using person-centered approaches. In this study, the authors demonstrated qualitative and quantitative differences across male and female profiles (Gerits et al., 2005). However, person-centered approaches are cumulative, and profile replication is a core aspect to ascertain their validity.

The aims of the present research were therefore threefold. Using latent profile analysis (LPA), we first explored how different profiles of emotional intelligence emerged from the data among a sample of Belgian university students. Our second objective was to investigate gender differences and similarities among these profiles. This objective was motivated by the importance of examining the construct validity of profiles and determining their plausibility and relevance for developing tailor-made interventions among students (Morin et al., 2016). Our last objective was to study how these profiles predicted two important career-related outcomes at the prospect of the school-to-work transition: job search self-efficacy and job search clarity.

The current research makes essential contributions in various ways. To the best of our knowledge, this is the first study to explore emotional intelligence profiles in relation to job search self-efficacy and job search clarity. Second, examining the heterogeneity of emotional intelligence with regard to gender differences offers a promising preventive approach and could better inform counselors on how to prepare students for their entry into the world of work. Third, it provides clear information for developing tailor-made emotional intelligence interventions among female and male students.

1.1 Emotional intelligence

Two main approaches coexist in the emotional intelligence literature: ability models (Salovey & Mayer, 1990) and trait models (Petrides & Furnham, 2001). The development of these two models has given birth to a significant number of debates over whether emotional intelligence is a set of abilities or a personality trait. Other researchers also developed mixed models of emotional intelligence that include characteristics such as empathy or social skills (Bar-on, 2006). Finally, integrative models have been proposed to reconcile previous theoretical debates, such as Mikolajczak, Quoidbach, Kotsou, and Nélis' (2009) tripartite model of emotional intelligence.

Building upon these theoretical considerations, we can broadly define emotional intelligence as the ability to identify, understand, and manage our own emotions and the emotions of others. In this paper, we decided to focus on the trait level. We also decided to use the Rotterdam Emotional Intelligence Scale (Pekaar et al., 2018). This modern instrument allows us to disentangle the extent to which individuals perceive and understand their own emotions (i.e., self-focused emotion appraisal) and the emotions of others (other-focused emotions appraisal). It also investigates the extent to which individuals regulate their own emotions (i.e., self-focused emotion regulation) and the emotions of others (i.e., other-focused emotion regulation). These dimensions are also present in every conceptual model of emotional intelligence.

A series of studies showed the positive effect of emotional intelligence in the educational and vocational literature. Previous research has demonstrated that emotional intelligence is a predictor of career adaptability (Parmentier et al., 2019, 2021) and is related to more adaptive career decision-making processes (Di Fabio & Kenny, 2011), greater career satisfaction (Pirsoul et al., 2021), and higher levels of employability (Nelis et al., 2011). These results have led researchers to recognize emotional intelligence as an important meta-competency for individuals' careers, as emotionally intelligent people are better at planning their career goals, dealing with different organizational cultures, and developing positive relationships at work and are able to anticipate the emotional consequences of career difficulties and respond adaptatively to them (Potgieter, 2014).

1.2 Profiles of emotional intelligence

Although previous research has highlighted the importance of emotional intelligence in the educational and career domains, the study of emotional intelligence has been mainly conducted through variable-centered approaches. These approaches have investigated how individuals differed with regard to the mean of the sample (i.e., low or high emotional intelligence) but not how the specific dimensions of emotional intelligence interacted together, while several researchers have suggested substantial variability across dimensions (Fiori, 2009; Keefer et al., 2012). However, Nelis et al. (2011) argued that the capacity to manage one's stress and consider recruiters' emotions simultaneously predicted university students' employability. Another study showed that a high level of emotional awareness combined with an inability to understand or regulate emotions could lead to psychological discomfort and disorders (Extremera & Fernández-Berrocal, 2006). Thus, it is possible that two university students with two equivalent levels of emotional intelligence present two profiles characterized by quantitative (i.e., low versus high levels of emotional intelligence dimensions) and qualitative differences (i.e., a high level of self-focused emotion awareness and a low level of self-focused emotion regulation). These observations motivated us to use a person-centered approach to investigate emotional intelligence at the intrapersonal and interpersonal levels.

Research question 1. How many emotional intelligence profiles that vary quantitatively (in level) and qualitatively (in shape) among university students emerge in the data?

Among the few studies adopting a person-centered approach to investigate emotional intelligence, Gohm (2003) revealed four profiles among university students. This study performed a cluster analysis based on emotional attention, clarity, and intensity dimensions. Individuals with a profile displaying high levels on the three dimensions reacted more intensively to emotional situations and had a negative mood during a longer period. However, this study neglected the intrapersonal regulation dimension and the interpersonal dimensions. Using LPA and based on intrapersonal abilities, interpersonal skills, adaptability, and stress-management capacity, another study found 5 profiles of emotional intelligence among freshmen students (Keefer et al., 2012). Two profiles presented high and average scores on the four dimensions. A third profile presented high interpersonal scores but low stress-

management scores. A fourth one presented a reverse pattern. The last one presented a low level on the four dimensions. The results indicated that having a profile with low levels on emotional intelligence dimensions was associated with a probability of degree non-completion. Finally, Toyama and Mauno (Toyama & Mauno, 2016) also investigated emotional intelligence using LPA and found 6 profiles based on intrapersonal, interpersonal, and situational emotional intelligence dimensions. Most profiles were low, on average, or high on the three dimensions. However, one profile presented an average level of intrapersonal and interpersonal emotional intelligence but low situational emotional intelligence levels. They also showed that profiles with high levels of emotional intelligence were associated with lower levels of burnout and depression and higher levels of work engagement and performance. Even if the intrapersonal and interpersonal dimensions were investigated, the profiles found in Keefer et al.'s (2011) and Toyama et al.'s (2016) studies differed from those found in Peekar et al.'s (2018) with regard to the specific dimensions of awareness and regulation.

With respect to gender differences and based on Bar-On's model, Gerits et al. (2005) investigated emotional intelligence profiles among male and female nurses using cluster analysis. This study is one the first to examine gender differences in relation to emotional intelligence through person-centered approaches. Prior variable-centered studies of the relation between emotional intelligence and gender have had inconsistent results. In these studies, females tended to present a higher level of emotional intelligence in situational tests. Nevertheless, no significant differences emerged with regard to self-report measures (for a meta-analysis, see Joseph & Newman, 2010 or MacCann et al., 2020). However, these results relied only upon the global score of emotional intelligence. When exploring differences at the dimension level, most of the studies have demonstrated that females tended to report higher levels of intrapersonal emotional intelligence, whereas males tended to report higher levels of intrapersonal emotional intelligence (Brasseur et al., 2013; McIntyre, 2010; Petrides et al., 2007). In their study, Gerits et al. (2005) revealed the emergence of 7 profiles for both female and male nurses based on intrapersonal abilities, interpersonal skills, adaptability, stress-management capacity, and general mood dimensions. They also found that profiles characterized by a higher level of emotional intelligence were associated with a lower level of burnout among female and male nurses. However, this study also differed from Peekar et al.'s (2018) conceptualizations regarding the specific dimensions of awareness and regulation.

In the current study, we used LPA to examine the combinations of the emotional intelligence dimensions of self-focused emotion awareness, self-focused emotion regulation, other-focused emotion awareness, and other-focused emotion regulation among a sample of university students at the end of their studies. In addition, we assessed the extent to which differences concerning profiles emerged between female and male students. The investigation of gender offers the possibility to ascertain the construct validity of profiles that could guide tailor-made interventions (Olivera-Aguilar & Rikoon, 2018). LPA is a categorical latent variable modeling approach that aims to identify individual subgroups (i.e., profiles) that differ with regard to their mean level (e.g., low vs. high) and to their shape in

relation to the dimensions (e.g., high level of self-focused emotion awareness and low level of self-focused emotion regulation). In contrast to classical clustering, LPA relies upon the structural equation modeling framework and provides several advantages, such as the possibility to analyze fit indices to choose the best profile solution, taking into account measurement errors, investigating covariates, and classifying membership probabilities directly from the model (Spurk et al., 2020; Woo et al., 2018).

Hypothesis 1a. *The emotional intelligence profiles of female students will display higher levels on other-focused emotional intelligence dimensions than those of male students.*

Hypothesis 1b. *The emotional intelligence profiles of male students will display higher levels on self-focused emotional intelligence dimensions than those of female students.*

1.3 Outcomes of emotional intelligence profiles

The second objective of this study was to investigate the relations of distinct emotional intelligence profiles with two career-related outcomes with regard to the school-to-work transition: job search self-efficacy and job search clarity.

Job search self-efficacy is defined as the belief that one can successfully perform job search behaviours (Saks & Ashforth, 1999). Based on self-regulation theory describing that individuals regulate their cognition, emotions, and behaviours to find employment and attain personal and career goals (Kanfer et al., 2001), we consider emotional intelligence a predictor of job search self-efficacy. This is in line with previous research that showed the predictive effect of emotional intelligence on active job search behaviours through the mediation effect of job search self-efficacy (Nieto-Flores et al., 2019). A recent study also showed that emotion regulation was a predictor of employment status via job search self-efficacy (Urquijo et al., 2019). These studies are consistent with previous research demonstrating that emotional intelligence training can improve employability among university students (Nelis et al., 2011). Following Young et al. (1996), emotional identification plays an essential role in the investigation and understanding of individuals' career interests and in carrying out actions in agreement with our emotions. Individuals with a high level of emotional intelligence are also better at managing their emotions in front of recruiters. Thus, students with a higher level of emotional intelligence tend to think they have more chances to find employment or develop adaptative behaviours in job search processes, leading to a higher level of job search self-efficacy (i.e., ability to present themselves as a competent person).

Job search clarity is defined as the extent to which individuals have a clear idea of the type of job they want to find (Wanberg et al., 2002). Previous research has shown that developing goals in the job search process is an important predictor of self-regulated behaviours such as job search intensity and employment (Bao & Luo, 2015; Côté & Miners, 2006; Zikic & Saks, 2009). Additionally, career choices and goals can be regulated and influenced by a series of decisions that may be emotional (Di Fabio & Kenny, 2011). Thus, we consider emotional intelligence a predictor of job search clarity. Young et al. (2006) argue that understanding our emotions can lead to being more aware of our career needs. Therefore, the capacity to be conscious and regulate emotions could lead to better planning of

individuals' career goals (Potgieter, 2014). It is also in line with a recent study demonstrating that emotional intelligence predicts job search success through the effect of career adaptability (Mittal, 2020).

Hypothesis 2. *Emotional intelligence profiles will display significant differences in terms of job search self-efficacy, such that profiles characterized by higher levels of self-focused emotion awareness, self-focused emotion regulation, other-focused emotion awareness, and other-focused emotion regulation will display a higher level of job search self-efficacy.*

Hypothesis 3. *Emotional intelligence profiles will display significant differences in terms of job search clarity, such that profiles characterized by higher levels of self-focused emotion awareness, self-focused emotion regulation, other-focused emotion awareness, and other-focused emotion regulation will display a higher level of job search clarity.*

2. Methods

2.1 Participants and procedure

Data were collected from 1582 Belgian university students enrolled in the third, fourth and final year of their studies, corresponding to the period from the third to the final year before the transition to the world of work. Students were contacted to complete an online survey. This study was approved by the Institutional Review Board of the university, and the students were ensured of both the anonymity and confidentiality of the survey. To evaluate gender differences appropriately, we tried to maintain a balance between female and male students. Accordingly, the final sample consisted of 51,6% female and 48,4% male students. The mean age of our sample was 21,67 (SD = 5,55). Additionally, 41,3% were in the third year of study, 34,9% were in the first year of their master's degree, and 23,8% were in the final year of their master's degree. Concerning the study programs, 57,4% were in social sciences, 18,6% were in health sciences, 20,5% were in technology, and 3,5% did not report their study program.

2.2 Measures

2.2.1 Emotional intelligence

Emotional intelligence was assessed with the Rotterdam Emotional Intelligence Scale (REIS; Pekaar et al., 2018). This measure is a Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) and comprises 28 items investigating four dimensions: self-emotion focused appraisal (e.g., "*I always know how I feel*", α = .84), other-focused emotion appraisal (e.g., "*I am aware of the emotions of the people around me*", α = .85), self-focused emotion regulation (e.g., "*I am in control of my own emotions*", α = .82), and other-focused emotion regulation (e.g., "*I can alter another person's emotional state*", α = .85).

2.2.2 Job search self-efficacy

Job search self-efficacy was assessed with items from the "*Getting ready for your next job*" inventory (Wanberg et al., 2010). This measure uses a Likert-type scale ranging from 1 (*not at all confident*) to 5 (*highly confident*) and comprises 11 items. This scale assesses how confident individuals feel about being able to realize a series of job search behaviours. We performed an exploratory factor analysis that indicated the emergence of two factors. Thus, we decided to separate the items targeting the intrapersonal (e.g., "w*riting a good resumé*", α = .74) from those targeting the interpersonal (e.g., "*presenting yourself well in an interview*", α = .68) job search behaviours in our analysis.

2.2.3 Job search clarity

Job search clarity was assessed with the scale developed by Côté et al. (2006) and Wanberg et al. (2002). This measure uses a Likert-type scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*) and comprises 5 items. This scale assessed the extent to which individuals have clear objectives of the type of job they want and where they want to work. A sample item is "*I have a clear idea of the type of job that I want to find*". The Cronbach's α in the present study was .83.

3. Results

3.1 Preliminary analyses

Statistical analyses were conducted using the M*plus* 8 robust maximum likelihood estimator with full information maximum likelihood. The means, standard deviations, and bivariate correlations are reported in Table D1. Second, confirmatory factor analyses were performed to evaluate the reliability of our constructs. In addition, we performed measurement invariance between female and male students using a multigroup analysis to evaluate the equivalence of our constructs (Parker et al., 2011). Regarding emotional intelligence, the model fit for the entire sample was good (χ^2 (272) = 1308.975; RMSEA = .049; CFI = .929; TLI = .902; SRMR = .029), and we reached residual invariance between female and male students (χ^2 (691) = 1936.504; RMSEA = .048; CFI = .914; TLI = .906; SRMR = .052). Model fit for job search self-efficacy and job search clarity was also good (χ^2 (240) = 751.001; RMSEA = .055; CFI = .914; TLI = .906; SRMR = .045), and we also reached residual invariance with regard to job search self-efficacy and job search clarity (χ^2 (235) = 809.838; RMSEA = .06; CFI = .908; TLI = .906; SRMR = .05). We saved the factor scores from the measurement invariance model of emotional intelligence and used them as profile indicators for LPA (Morin et al., 2016).

Table 12. Group-specific latent profile enumeration fit statistics

Sample	# of profiles	LL	fp	SCF	AIC	BIC	SABIC	CAIC	aLMR (*p*)	BLRT (*p*)	Entropy
Sample female students (*N* = 816)											
	1	–4402.48	8	1.0591	8,820.95	8,858.60	8,833.19	8,866.60	–	–	1
	2	–4248.18	17	1.4450	8,535.36	8,610.36	8,556.37	8,627.36	.000	.000	.581
	3	–4126.95	26	1.0998	8,305.89	8,428.24	8,345.68	8,454.24	.000	.000	.734
	4	–4074.00	35	1.1469	8,218.01	8,382.71	8,271.56	8,417.71	.007	.000	.762
	5	–4046.67	44	1.1062	8,181.35	8,388.40	8,248.67	8,432.40	.083	.100	.782
	6	–4020.74	53	1.1152	8,147.48	8,396.88	8,228.57	8,449.88	.171	.000	.770
	7	–4002.58	62	1.0699	8,129.16	8,420.91	8,224.03	8,482.91	.297	.304	.797
	8	–3984.99	71	1.0764	8,111.98	8,446.08	8,220.61	8,517.08	.363	.082	.824
Sample male students (*N* = 765)											
	1	–4329.85	8	1.0306	8,675.69	8,712.82	8,687.41	8,720.82	–	–	1
	2	–4187.04	17	1.2104	8,408.08	8,486.96	8,432.98	8,503.96	.000	.000	.566
	3	–4094.38	26	1.1840	8,240.77	8,361.40	8,278.43	8,387.40	.000	.000	.752
	4	–4053.75	35	1.2449	8,177.50	8,339.90	8,228.76	8,374.90	.126	.000	.671
	5	–4022.33	44	1.1724	8,132.66	8,336.82	8,197.10	8,380.82	.028	.000	.701
	6	–3992.31	53	1.0569	8,090.61	8,336.53	8,168.23	8,389.53	.001	.000	.724
	7	–3969.02	62	1.0932	8,062.03	8,349.71	8,152.83	8,411.71	.172	.010	.757
	8	–3943.91	71	1.1014	8,029.82	8,359.26	8,133.80	8,430.56	.334	.202	.737

Note. LL = log likelihood ; fp = free parameters ; SCF = scaling correction factor; AIC = Akaike information criteria; BIC = Bayesian information criteria; SABIC = sample-size adjusted BIC; CAIC = consistent AIC; aLMR = adjusted Lo-Mendell-Rubin likelihood ratio test; BLRT = Bootstrap Likelihood Ratio test.

3.2 Latent profile analyses and profile similarity

We performed LPA following in a stepwise procedure from 1 to 8 profiles for female and male students. According to Woo et al. (2018), the theory is closely related to the statistical process of the LPA procedure. We performed LPA using 5,000 random sets of starting values and 1,000 iterations. The 200 best solutions were retained for optimization. For multigroup models, the values were 10,000, 2,000, and 500. We used a number of fit statistics to evaluate each profile solution: the Akaike Information Criterion (AIC), the Consistent AIC (CAIC), the Bayesian Information Criterion (BIC), the sample-size adjusted BIC (SABIC), the adjusted Lo-Mendell-Rubin likelihood ratio test (aLMR), the Bootstrap Likelihood Ratio test (BLRT), and entropy. The best profile solution should display smaller AIC, CAIC, BIC, and SABIC values; an entropy greater than .70; and significant aLMR and BLRT statistics. The solution to retain should display the AIC, CAIC, BIC, and SABIC values; an entropy greater than .70; and significant aLMR and BLRT statistics. The simulation studies of Nylund et al. (2007) recommended using the CAIC, BIC, SABIC, and BLRT compared to other indices. For the multigroup profile analysis, we followed the sequential strategy of Morin et al. (2016). These kinds of analyses allow evaluation of the similarity of the number of profiles, their shape, variability, and distribution. We used the R3STEP function to determine how the year of the study predicted profile membership. For the outcomes, we used multinomial logistic regressions to examine how profile membership was associated with job search self-efficacy and job search clarity using the AUXILIARY (BCH) function. We allowed the means and variances to vary during the enumeration process because the parameterization is more realistic and provides less biased parameter estimates (Morin et al., 2011).

Table 13. Multigroup similarity fit statistics

Models of similarity	LL	fp	SCF	AIC	BIC	SABIC	CAIC	Entropy
Configural	-9,185.81	59	1.276	18,689.62	19,006.24	18,818.81	19,065.24	.825
Structural	-9,461.94	31	1.178	18,985.25	19,152.25	19,053.77	19,183.25	.936
Dispersion	-9,475.73	27	1.162	19,005.46	19,150.36	19,064.58	19,177.36	.850
Distributional	-9,571.56	24	1.122	19,191.11	19,319.91	19,243.67	19,343.91	.858

Note. LL = log likelihood; fp = free parameters; SCF = scaling correction factor; AIC = Akaike information criteria; BIC = Bayesian information criteria; SABIC = sample-size adjusted BIC; CAIC = consistent AIC.

We report the fit indices associated with the profile enumerations for the female and male students in Table 12. We also report the similarity fit statistics in Table 13. For the female students, the BIC and CAIC decreased until the 4-profile solution and then increased. The AIC and SABIC decreased until the 8-profile solution. The values of the aLMR and BLRT supported a 4-profile solution. Thus, our results supported a 4-profile solution. The 3-profile to the 5-profile solutions were examined more closely. This examination demonstrated that the 4-profile solution was the most proper solution regarding its statistical and theoretical conformity. The 4-profile solution compared to the 3-profile solution proposed a fourth profile that better differentiated the proportion of the total sample. The proportion of individuals in one profile scoring below the average with respect to the four emotional intelligence dimensions decreased from 46.76% in the 3-profile solution to 4.77% in the 4-profile solution. Concerning the 5-profile solution, a new profile with only 1.35% difference from the 4-profile solution emerged and did not provide substantive additional information. Thus, our qualitative investigation highlighted the 4-profile solution presented in Figure 9.

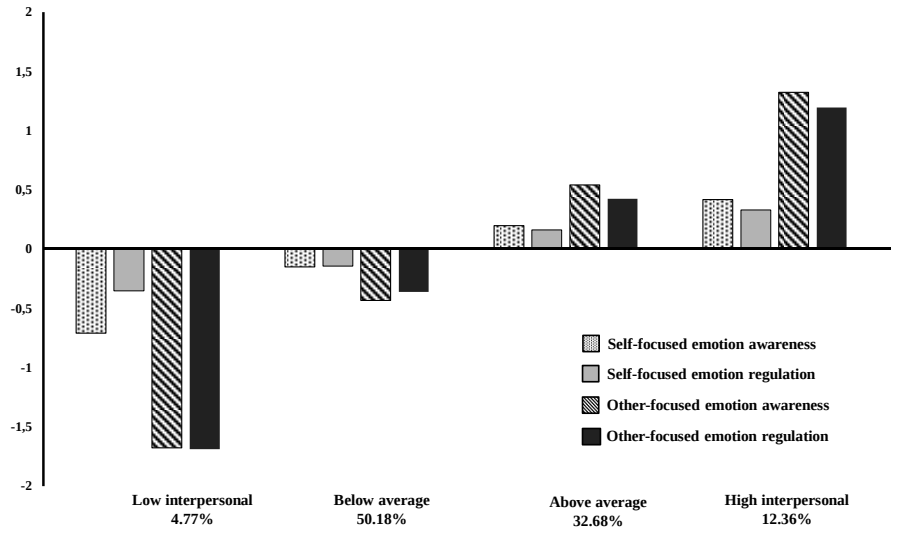


Figure 9. Final LPA solution for female students

For the male students, the BIC and the CAIC decreased until the 4-profile solution and then reached a plateau. The AIC and the SABIC decreased until the 8-profile solution. The values of the aLMR supported a 2-, 3-, 5-, and 6-profile solution. The BLRT supported the 1- to 7-profile solutions. However, some simulation studies have shown that aLMR tends to underestimate the number of profiles (Nylund et al., 2007). Additionally, it is recommended that the values associated with the BIC and CAIC be privileged. For the female students' profiles, we examined the 3-profile to 5-profile solutions. The added profile in the 4-profile solution compared to the 3-profile solution provided a new relevant profile comprising 30.59% of the sample. However, adding a 5th profile did not bring substantive information due to the low proportion in this profile (1.18%). Thus, we retained the 4-profile solution displayed in Figure 10.

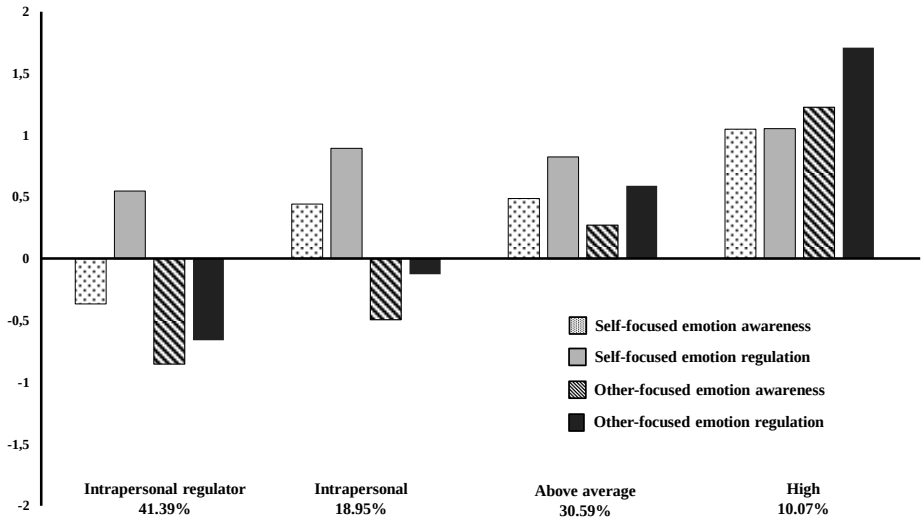


Figure 10. Finale LPA solution for male students

3.3 Interpretation of the profiles

For the female students, Profile 1 showed low levels on the intrapersonal emotional dimensions (i.e., self-focused emotion awareness and regulation) and very low levels on the interpersonal emotional dimensions (i.e., other-focused emotional awareness and regulation). This Low interpersonal profile was composed of 4.77% of the total sample. In the same vein, Profile 2 was composed of female students displaying low levels on emotional intelligence dimensions, but these levels with just below average. We labelled this profile Below average (composing 50.18% of the total sample). The third profile, composing 32.68% of the total sample, presented levels of emotional intelligence dimensions moderately Above average. The levels were higher for the interpersonal dimensions. Finally, the fourth profile displayed particularly high levels on the interpersonal dimensions, but the intrapersonal dimensions

were also moderately above average. Thus, we labelled this profile High interpersonal, composing 12.36% of the total sample. Antecedents of emotional intelligence profiles levels on the interpersonal emotional intelligence dimensions were below average. Composing 18.95% of the male students' sample, we labelled this profile Intrapersonal. The third profile, composing 30.59% of the sample, presented moderately Above average levels on the emotional intelligence dimensions. Finally, the fourth profile displayed high levels on the four emotional intelligence dimensions with a particularly high level for other-focused emotion regulation. Thus, we labelled this profile High, composing 10.07% of the total sample.

3.4 Antecedents of emotional intelligence profiles

No significant coefficients were found between the year of study and the profiles of the female and male students.

3.5 Antecedents of emotional intelligence profiles

Differences between profiles with regard to job search self-efficacy and job search clarity are reported in Table 14 and Table 15. Significant differences between emotional intelligence profiles were found for the female and male students concerning intrapersonal and interpersonal job search self-efficacy. Overall, the profiles with higher levels of emotional intelligence dimensions displayed a higher intrapersonal and interpersonal job search self-efficacy level. The female students with a High interpersonal or Above average profile exhibited significantly higher levels of intrapersonal and interpersonal job search self-efficacy than those with a Low interpersonal or Below average profile. For the male students, individuals with a High or Above average profile exhibited a higher level of intrapersonal job search self-efficacy than those with an Intrapersonal regulator profile. Regarding interpersonal job search self-efficacy, the male students with a High or Above average profile exhibited a higher level than those with an Intrapersonal regulator or Interpersonal profile. For job search clarity, no significant differences were found between the female students. Concerning the male students, individuals with a High or Above average profile exhibited a higher level of intrapersonal job search self-efficacy than those with an Intrapersonal regulator or Interpersonal profile. These results supported our second hypothesis and partially supported our third hypothesis.

Table 14. Differences of outcomes between emotional intelligence profiles for female students

	Low interpersonal	Below average	Above average	High interpersonal	Overall χ^2
Intra-JSSE	$-.39_{a,b}$	$-.11_{a,b}$	$.11_{b}$	$.33_{a}$	20.560***
Inter-JSSE	$-.50_{a,b}$	$-.10_{a,b}$	$.13_{b}$	$.31_{a}$	25.450***
Clarity	–.01	$-.10_{b}$	$.11_{b}$	.14	7.685

Note. JSSE = job search self-efficacy. Overall chi-square tests were performed with 5 degrees of freedom. Subscripts indicate significant differences between profiles at the .05 level. Subscripts from *a* to b refer to significant pairwise comparisons with the High interpersonal, and Above average, respectively.
*** $p < .001$

Table 15. Differences of outcomes between emotional intelligence profiles for male students

	Intrapersonal regulator	Intrapersonal	Above average	High	Overall χ^2
Intra-JSSE	$-.21_{a,b,c}$	$.12_{c}$	$.16_{b}$	$.44_{a}$	28.191***
Inter-JSSE	$.08_{a,b,c}$	$.37_{a,c}$	$.47_{a,b}$	$.90_{a}$	81.780***
Clarity	$.08_{a,b,c}$	$.18_{a,c}$	$.37_{b}$	$.50_{a}$	32.882***

Note. JSSE = job search self-efficacy. Overall chi-square tests were performed with 5 degrees of freedom. Subscripts indicate significant differences between profiles at the .05 level. Subscripts from *a* to *c* refer to significant pairwise comparisons with the High, Above average, and High intrapersonal, respectively.
*** $p < .001$

4. Discussion

The present study aimed to explore emotional intelligence profiles based on the self-focused emotion awareness, self-focused emotion regulation, other-focused emotion awareness, and other-focused emotion regulation dimensions among university students at the point of the school-to-work transition. Another key objective was to investigate gender differences and similarities in university students' profiles. This objective was motivated by ascertaining the construct validity of our profiles. Finally, we aimed to document the importance of emotional intelligence profiles at the point of the school-to-work transition in terms of job search self-efficacy and job search clarity.

Our results demonstrated the emergence of four profiles for both female and male students. However, profile similarity analyses indicated that the levels and shapes were quite different. Thus, we echo previous findings demonstrating the relevance of investigating how

the specific emotional intelligence dimensions differ quantitatively and qualitatively (Gohm & Clore, 2002; Keefer et al., 2012; Toyama & Mauno, 2016), especially (Gerits et al., 2005). For female students, we observed the emergence of a first *Low interpersonal* profile characterized by low levels of self-focused emotion awareness and regulation and very low levels of other-focused emotion awareness and regulation. This profile represented a small proportion of the subgroup (4.77%). We also observed a *Below average* profile characterized by below-average levels on the four dimensions. This profile had the largest proportion, accounting for 50.18% of the female students' subgroup. We also observed *Above average* and *High interpersonal* profiles, with above average and high levels on the intrapersonal and interpersonal dimensions, respectively. Regarding the male students, we observed the emergence of a first *Intrapersonal regulator* profile that represented 41.39% of the subgroup. This profile was characterized by low levels of self-focused emotion awareness, other-focused emotion awareness, and other-focused emotion regulation. However, individuals with this profile presented a high level of self-focused emotion regulation. The second *Intrapersonal* profile was characterized by a high level on the self-focused dimensions but low levels on the other-focused dimensions. The third was composed of *Above average* levels on the four dimensions, representing 30.59% of the subgroup. Finally, the last *High* profile was characterized by high levels on the fourth dimension and represented 10.07% of the subgroup. These results are consistent with previous findings that demonstrated that females tend to have higher interpersonal skills levels, wherein males tend to have higher levels of intrapersonal skills (Brasseur et al., 2013; McIntyre, 2010; Petrides & Furnham, 2000b). These results can be interpreted under the theory of social roles (Eagly & Wood, 2016). This theory argues that gender differences, in terms of behaviour, cognition, or emotion, are mainly explained by gender role beliefs. Thus, females are socially expected to develop listening, empathy, caring skills and to be interpersonally oriented. Simultaneously, it is also expected for males to develop courage, assertiveness, self-control, and stress management. In addition, Brody (2000) argues that gender differences are also based on a developmental process in which parents and peers socialize individuals to internalize these social roles. However, by using a person-centered approach in the current study, we demonstrated more nuanced differences regarding gender. Even if female students tend to differ with regard to the interpersonal dimensions, we also observed some differences with respect to the intrapersonal dimensions. For the male students, the profiles were differentiated on the basis of not only the intrapersonal dimensions but also the interpersonal dimensions. Therefore, our results highlight being particularly attentive to gender stereotypes conveyed in our society since our person-centered findings revealed some heterogeneity among the female and male student profiles. Thus, our results support the complementariness of person-centered approaches compared to variable-centered approaches in the study of emotional intelligence.

With respect to career-related outcomes (i.e., job search self-efficacy and job search clarity), the investigation between profiles demonstrated the predictive and positive effect of emotional intelligence. According to our hypothesis, we observed significant differences with regard to the intrapersonal and interpersonal dimensions of job search self-efficacy among the profiles. Profiles with higher levels on the emotional intelligence dimensions

showed higher levels on these two outcomes. For the female students, having an Above average or High interpersonal profile was related to higher levels of intrapersonal and interpersonal job search self-efficacy than to low levels of emotional intelligence dimensions (i.e., Low interpersonal and Below average). For the male students, we globally observed the same pattern of results. The Above average and High profiles were related to higher levels of intrapersonal and interpersonal job search self-efficacy than the Intrapersonal regulator and Intrapersonal profiles. However, we did not find significant differences between the Intrapersonal and High profiles, between the Above average and High profiles, or between the Intrapersonal and Above average profiles. These results may be explained in part by the fact that these profiles present relatively the same levels of intrapersonal emotional intelligence. Accordingly, previous research has already shown that intrapersonal emotional intelligence is more related to behaviours directed at regulating one's own emotions (Pekaar et al., 2019). Concerning interpersonal job search self-efficacy, Nozaki (2015) found that interpersonal emotional intelligence was more associated with behaviours that aim at regulating the emotions of others, which are particularly important during a job interview. For job search clarity, no significant differences were found between the female students' profiles. Among the male students, the High and Above average profiles were related to a higher level of job search clarity than the Intrapersonal regulator and Intrapersonal profiles. For both the female and male student profiles, these results suggest that job search clarity is more strongly predicted by students' ability to identify and regulate their own emotions than to regulate the emotions of others. These results are in line with Young et al's (1996) assumption that the awareness and regulation of one's emotions are crucial to developing one's career objectives. These results also corroborate previous findings indicating that emotional intelligence is a predictor of job search success, job search self-efficacy, and employability (Mittal, 2020; Nelis et al., 2011; Nieto-Flores et al., 2019). It is also the first study to explore emotional intelligence as a predictor of job search clarity.

4.1 Limitations and future directions

Various limitations in the present study may have affected the generalizability of our results. First, we relied upon a cross-sectional design, limiting our ability to measure causality between variables. Further research should aim to develop longitudinal designs to evaluate the stability of the profiles across time (i.e., latent transition analysis) and the direction of the causality between emotional intelligence and career-related outcomes (Morin et al., 2018). Second, our research was conducted on a sample of Belgian university students. Future research should focus on other populations and educational contexts to generalize the profiles and results. Finally, our study was assessed with a self-report measure of emotional intelligence. Therefore, it is difficult to affirm whether we evaluated an objective level of emotional intelligence or whether these responses were biased by social desirability and social role expectancies, especially with regard to gender differences (Lopez-Zafra & Gartzia, 2014; Martínez-Marín et al., 2020).

4.2 Practical implications

From a practical perspective, the emergence of multiple emotional intelligence profiles supports the importance of considering university students' heterogeneity and at-risk students. Teachers, parents, and guidance counselors should particularly pay attention to students displaying low levels on emotional intelligence dimensions, such as those with Low interpersonal or Intrapersonal regulator profiles. These profiles presented low levels of job search self-efficacy and job search clarity and could be at risk in their preparation for their entry to the world of work. We also developed a finer-grained approach to gender differences by not reducing the female and male students to a low or high level on specific emotion intelligence dimensions. Additionally, we offer practical information for guidance counselors to develop a tailor-made approach. For example, guidance counselors should help more female students in their intrapersonal emotion awareness and regulation, wherein they should help male students be more aware and regulate the emotions of others. We also showed that a higher level of emotional intelligence predicted high levels of job search self-efficacy and job search clarity at the point of the school-to-work transition. Accordingly, a recent meta-analysis showed that emotional intelligence is malleable and trainable (Hodzic et al., 2018). Therefore, our results offer critical insight for developing emotional intelligence training to improve job search self-efficacy and job search clarity. In doing so, we will better prepare students at for their school-to-work transition.

Chapter 7

Fostering emotional intelligence in the context of the school-to-work transition

An experimental study

The transition from university to work represents a critical and stressful step for future graduate students. Furthermore, an increasing number of studies showed that emotional intelligence should be considered as a crucial meta-competency for career success. In this experimental study, we thus propose to test the effectiveness of a structured training in emotional intelligence in improving last-year university students' career development outcomes, that is, career adaptability and career decision-making self-efficacy. Sixty-three undergraduate students were recruited and randomly assigned to the experimental or control group. The emotional intelligence training consisted of three hours sessions per week for five weeks. Each session was designed to develop a specific emotional intelligence dimension: identifying emotions, understanding emotions, expressing emotions, regulating emotions, and utilizing emotions. The results showed that the level of emotional intelligence increased significantly in the training group after the training when compared to the control group. However, we did not find higher levels of career adaptability and career decision-making self-efficacy after the training, possibly suggesting complex temporal dynamics in their relations during the school-to-work transition. Our research thus claims a call for more experimental design and interventions in the vocational and career literature.

Reference

Pirsoul, T., Parmentier, M., Nils, F. (in preparation). Fostering emotional intelligence in the context of the school-to-work: An experimental study.

Chapter 7

Fostering emotional intelligence in the context of the school-to-work transition

An experimental study

1. Introduction

The transition from higher education to the world of work represents a turmoil period for undergraduate students. Entering into the labour market and beginning a full-time job engages students in managing a series of demands: specifying their career interests, realizing critical career decisions, or preparing and anticipating their adaptation into the workforce (Ng & Feldman, 2007). Simultaneously, individuals now face a more challenging and complex arrival on the labour market, characterized by an increasing level of career transitions and job uncertainty (Akkermans, Blokker, et al., 2021). Managing these challenges not only affects the probability of finding a suitable job but may also impact individuals' psychological well-being, interpersonal relationships, career attitudes, and career outcomes (McKee-Ryan et al., 2005; Ng et al., 2005). As a consequence, the last year in higher education involves a multitude of adjustments, and the associated challenges are likely to give rise to substantial emotional reactions (Saks, 2014).

In recent years, the concept of emotional intelligence – defined as the ability to identify, understand, express, regulate and use one's own emotion and the emotion of others – has been recognized as an important meta-competency in the field of career (Parmentier et al., 2019). Studies have initially shown the beneficial effects of emotional intelligence training on various outcomes such as mental and physical health, social relationships, and work performance (for a meta-analysis, see Hodzic et al., 2018). In the career literature, recent interventional studies have demonstrated that emotional intelligence interventions decreased the levels of career indecisiveness and career decision difficulties (Di Fabio & Kenny, 2011) and increased the level of objective employability (Nelis et al., 2011). A previous cross-sectional study has also shown the importance of emotional intelligence in relation to employability and career preparation at the prospect of the school-to-work transition (Coetzee & Beukes, 2010). Thus, improving emotional intelligence should help individuals with regard to their emotional experience and develop their resources to manage environmental demands. However, previous interventions were dispensed among students enrolled in secondary school or undergraduate university students. Hence, these interventions were not especially focused on preparing students for the transition to the world of work.

Based on the career construction model, emotional intelligence is considered as a stable psychological characteristic that covers readiness and willingness to adapt to career

challenges, labeled Adaptivity (Hirschi et al., 2015; Savickas, 2013). In this model, adaptivity is recognized as an antecedent of Adaptability, which is defined as the psychosocial strength that helps individuals to adapt to career difficulties. Adaptability is generally associated with the concept of career adaptability. In turn, adaptability influences how individuals develop adaptive behaviors and beliefs in relation to career conditions, such as career decision-making self-efficacy. Finally, adaptability and adapting responses affect the adaptation results. Authors outlined the career adaptation process in such a way: adaptivity (e.g., emotional intelligence) → adaptability (i.e., career adaptability) → adapting (e.g., career decision-making self-efficacy) → adaptation.

The aims of the current research were twofold. Using an experimental design, we first examined whether a structured and validated intervention in emotional intelligence might develop or increase the emotional intelligence level of undergraduate students enrolled in their last year of university studies at the prospect of their transition to the world of work. According to the career construction model, the second aim of the present study was to examine whether this intervention predicted the development of two important career-related outcomes: career adaptability and career decision-making self-efficacy.

Accordingly, the present research brings several contributions. To the best of our knowledge, it is the first experimental study that examined the effect of a structured intervention in emotional intelligence among undergraduate students at the prospect of the school-to-work transition. Although several studies have been designed to develop career adaptability (e.g., Koen et al., 2012), interventional studies that evaluate emotional intelligence processes are still scarce. However, promoting emotional intelligence intervention may provide promise for developing sustainable careers. On the one hand and following the career construction model, emotional intelligence is a predictor of career adaptability. Thus, enhancing emotional intelligence could also increase career adaptability levels. On the other hand, emotional intelligence affects a wide range of life spheres, emotional intelligence training could also help individuals over and above career-related outcomes. Doing so, we respond to calls for a better understanding of emotional processes and intervention in career and vocational literature (Hartung, 2011). Second, very few studies have investigated the link between emotional intelligence, career adaptability (Parmentier et al., 2019, for an exception), and career decision-making self-efficacy longitudinally, limiting our comprehension of the causal relationships between these variables. As the job market is now recognized as more volatile and complex, developing adaptability and adapting resources has become crucial. By investigating the relationships between emotional intelligence, career adaptability, and career decision-making self-efficacy, we also extend prior empirical evidence of the career construction model of adaptation.

1.1 Emotional intelligence

Lengthy debates exist about the concept of emotional intelligence, and no consensus about the definition has been proposed yet. Historically, the two principal approaches are the ability emotional intelligence and the trait emotional intelligence. Developed by Mayer & Salovey (2004), the ability approach proposes that emotional intelligence acts like an ability

that should overlap with cognitive ability. The trait approach considers emotional intelligence as a personality trait and concerns emotion-related dispositions and emotional intelligence self-perception (Petrides & Furnham, 2001). Mixed models of emotional intelligence have also been developed, including other features such as empathy and social skills (Bar-on, 2006). These debates have finally given rise to integrative models, such as the tripartite model of Mikolajczak, Quoidbach, Kotsou, and Nelis (2009). In line with these theoretical models, we have decided to focus on the tripartite model of emotional intelligence because it offers a state-of-the-art conceptualization. This model defines emotional intelligence as the way individuals identify (i.e., ability to recognize and discriminate emotions), understand (i.e., ability to understand the message and needs conveyed by emotions), express (i.e., ability to express emotions in a socially acceptable manner), regulate (i.e., ability to exert control on own emotions), and use one's own emotions and the emotions of others (i.e., ability to use emotion as information to guide thoughts and behaviors). Thus, this model posits three levels of emotional intelligence: knowledge, abilities, and dispositions (Mikolajczak et al., 2009). The knowledge refers to what people know about emotions and emotional intelligence (e.g., Do I know how to decrease my negative emotions?). The ability level refers to the ability to apply this knowledge in a specific emotional situation (e.g., Am I able to decrease my negative emotions?). The trait level refers to the natural tendency of individuals to do particular behaviors in emotional situations. (e.g., Do I usually decrease my negative emotions?). As the present study used a self-report questionnaire, we focus here on the trait level. Furthermore, some authors have emphasized the importance of differentiating the influence of the intrapersonal and interpersonal facets of emotional intelligence (Nozaki et al., 2019). According to this recommendation and based on prior results showing that career adaptability and career decision-making self-efficacy were mainly predicted by the intrapersonal facet of emotional intelligence and considered as intrapersonal processes (Parmentier et al., 2019; Santos et al., 2018), we decided to focus on intrapersonal emotional intelligence in the current study.

Emotional intelligence has been positively related to a wide range of adaptive outcomes such as physical health (Sarrionandia & Mikolajczak, 2020), mental health (Sánchez-Álvarez et al., 2016), social relationships (Malouff et al., 2014), and work spheres (Miao et al., 2017). Emotional intelligence has also increasingly grasped researchers' interest in the career domain. Emotional intelligence has been related to career decision-making processes (Di Fabio & Kenny, 2011), career commitment (C. Brown et al., 2003), career satisfaction (Pirsoul et al., 2021), and employability (Nelis et al., 2011). Recent studies have also shown that emotional intelligence was a predictor of career adaptability (Parmentier et al., 2019). We shall come back to the literature between emotional intelligence, career adaptability, and career decision-making self-efficacy in the career adaptability and career decision-making self-efficacy sections.

Regarding emotional intelligence, a recent meta-analysis has shown that emotional intelligence can be enhanced through training (Hodzic et al., 2018). In relation to the career field, Di Fabio & Kenny (2011) have demonstrated that emotional intelligence training has reduced indecisiveness and career decision difficulties levels among a sample of Italian

secondary school students. The intervention was divided into four sessions of 2 hr and 30 minutes each, weekly. Among Belgian undergraduate students, Nelis et al. (2011) have also shown that their emotional intelligence training increased the objective level of employability. More precisely, participants were considered as more employable in front of a video-recorded interview by a panel of 18 judges. This intervention consisted of three 6 hr sessions or six 3 hr sessions.

Hypothesis 1. *Compared to the control group, the training group will show an increase in intrapersonal emotional intelligence immediately after the training.*

1.2 Career adaptability

Career adaptability is defined as a set of personal and psychosocial self-regulatory, transactional and malleable resources that facilitate individuals to prepare, solve, cope with and adjust to work and career-related contingencies (Savickas & Porfeli, 2012). Career adaptability is composed of four transactional competencies, also called the 4Cs: preparing for the upcoming and future career tasks (concern), taking responsibility for one's career (control), remaining curious and exploring possible selves and future career opportunities (curiosity), and building up their beliefs in their ability to succeed in solving career-related issues (confidence). Career adaptability seems to be a significant predictor of a wide range of career-related outcomes such as job and career satisfaction (Chan & Mai, 2015), work performance (Zacher, 2015), employability (de Guzman & Choi, 2013), or affect (Fiori et al., 2015), as demonstrated by the recent meta-analysis realized by Rudolph, Lavigne, & Zacher (2017). In the context of school-to-work transition, a handful of research showed that career adaptability is malleable and can be enhanced through specific interventions. For example, Koen et al. (2012) showed that it is possible to develop the levels of career adaptability dimensions in a structured intervention and to develop higher employment quality. This intervention was composed of 1-day training with a total duration of 8.5 h and was given to 93 participants. Developing career adaptability has also enhanced resources during times of uncertainty, built proactivity in career planning, and promoted career exploration behaviors. Motlova & Honsova (2021) also showed that a 13-week career guidance and counseling intervention among 224 Czech students increased their career adaptability level at the prospect of the school-to-work transition. Green et al. (Green et al., 2020) demonstrated in their Staying Relevant training course that their intervention increased students' proactivity and career adaptability resources among 98 Bachelor of Business Administration students in Pakistan. This intervention was also designed for preparing students in the context of their transition to the world of work for a total of 24 hr (6 hr a week for 4 weeks). Finally, Van der Horst et al. (2021) recently showed that short workshops of several hours increased career adaptability level among 471 university students in the Netherlands.

Compelling evidence supports the idea that emotional intelligence is considered a predictor of career adaptability. Coetzee & Harry (2014) first revealed in a cross-sectional study a positive relationship between emotional intelligence and career adaptability among call-center agents. Other research has also shown, among students, the predictive effect of emotional intelligence on academic satisfaction (Celik & Storme, 2018), academic

engagement (Merino-Tejedor et al., 2018), self-perceived employability, and career indecision (Udayar et al., 2018) through the mediating effect of career adaptability. In a cross-lagged panel analysis, Parmentier et al. (2019) supported the causal relationship from emotional intelligence to career adaptability among adult learners. Using a person-centered approach, Parmentier et al. (2021) also showed the predictive influence of emotional intelligence on career adaptability profiles among university students. Finally, Vashisht et al. (2021) reported in their meta-analysis a positive relationship (r = .446) between emotional intelligence and career adaptability on a total of 8 studies. Building upon the career construction model (Savickas, 2013), it has been argued that emotional intelligence is considered as a general factor of adaptive functioning that helps individuals to mobilize their career adapt-abilities during periods of career-related challenges. To the best of our knowledge, no studies have examined whether an intervention in emotional intelligence may increase career adaptability levels.

Hypothesis 2. *Compared to the control group, the training group will show an increase in career adaptability immediately after the training.*

1.3 Career decision-making self-efficacy

Based on the social cognitive theory of Bandura (1977), career decision-making self-efficacy is defined as the individuals' confidence in their ability to successfully complete the required tasks to make career decisions (Taylor & Betz, 1983). Career decision-making self-efficacy is composed of five task-related domains, which are 1) optimal level of self-appraisal, 2) information gathering, 3) career-related goal selection, 4) planning, and 5) problem-solving. Taylor and Betz suggest that individuals with a higher level of career decision-making self-efficacy would have more abilities to make career decisions. In contrast, individuals with a lower level of career decision-making self-efficacy would have a lower level of career-related behaviors leading to an increased level of career indecision. It is now widely recognized that career decision-making self-efficacy plays an important role with regard to career related-outcomes such as vocational identity (Gushue et al., 2006), career indecision (Guay et al., 2006), career commitment (Chung, 2002), career decision-making attitude (Luzzo, 1993), career adjustments (Betz & Luzzo, 1996), exploratory career behaviors (Blustein, 1989), or career decision-making difficulties (Amir & Gati, 2006), as demonstrated by the meta-analysis of Choi et al. (Choi et al., 2012). Career decision-making self-efficacy is considered as a crucial adapting response that assists individuals in mobilizing and coordinating decisional skills, decreasing career-related decisional anxiety, and in promoting career exploration and decision-making behaviors.

A series of research has shown that emotional intelligence was positively related to career decision-making self-efficacy. Brown et al. (2003) demonstrated that emotional intelligence was significantly associated with career decision self-efficacy. Di Fabio and Saklofske (2014) also showed that emotional intelligence added a significant incremental variance beyond personality traits in association to career decision-making self-efficacy among a sample of Italian high school students. Jiang (2014, 2016) also demonstrated that emotional intelligence was positively related to career decision-making self-efficacy among

undergraduate students from China and Korea. More recently, Santos et al. (2018) demonstrated a positive relationship between emotional intelligence and career decision-making difficulties through the mediating role of career decision-making self-efficacy. Finally, Parmentier et al. (2021) found a positive relationship between emotional intelligence and career decision-making self-efficacy. Accordingly, Emmerling & Cherniss (2003) argue that emotionally intelligent individuals better understand and regulate their emotions during career decision-making processes, leading to more adaptive career-related decisions. To the best of our knowledge, no prior longitudinal or experimental evidence exists between emotional intelligence and career decision-making self-efficacy.

Hypothesis 3. *Compared to the control group, the training group will show an increase in career decision-making self-efficacy immediately after the training.*

2. Method

2.1 Design and Procedure

The present research was based on a two-wave experimental design with a between-subjects variable (emotional intelligence training group vs. control/waiting-list group) and a within-subject variable (pretest vs. posttest). This design offers the possibility of examining whether the intervention influences the development of emotional intelligence and examining the causal relationship of emotional intelligence on career adaptability and career decision-making self-efficacy. To recruit participants, we announced management emotions training through social networks, flyers in each faculty of the university, and by personal contacts. Accordingly, participants had to inform by email of their interest in attending the training. The inclusion criteria were as follows: (1) being in their last year of university studies, (2) being motivated about the intervention process, (3) not having extensive prior knowledge about the content of the intervention, (4) do not present drug dependency or abuse, (5) do not use psychopharmacotherapy, (6) do not have any planned psychological interventions during the study and (7) being available from March to June 2018. Participants enrolled in the project were asked to give their availabilities (attending the intervention the Monday or Wednesday) and were thus randomly assigned to the training group or the waiting list. All participants received a confidential identification number to ensure anonymity and the ethical procedure of the research protocol. The present study was approved by the institutional review board of the university. The training took place from March 2018 to April 2018 in the faculty of psychology and educational sciences, UCLouvain, Belgium.

2.2 Participants

Thirty-one participants formed the training group (30 women and 1 men; *mean age* = 24,51, *SD* = 2,64) and thirty-two formed the control group (28 women, 4 men; *mean age* = 23,65, *SD* = 1,43). Participants in the training and control group were asked to complete all measures two times: one week before the intervention and one week after the end of the intervention. All participants completed the pre-training measurement in Time 1. However,

one participant in the training group and two participants in the control group did not complete the post-training measurement. Regarding the study program, 77.8% of participants were enrolled in the Faculty of Psychological and Educational Sciences (n = 49), 9.5% in the Faculty of Law and Criminology (n = 6), 2% in the Faculty of Economic, Social, and Political Sciences and Communication (n = 2), 2% in the Faculty of Motor Sciences (n = 2), 1% in the Faculty of Philosophy, Arts and Letters (n = 1), and three participants did not report their study program.

2.3 The content of the intervention and process

The intervention followed the structure and the content of a validated intervention developed by Kotsou and colleagues (2011). This intervention was aimed to develop and improve emotional intelligence in working adults. It has also been validated among undergraduate students in a Belgian university (Nelis et al., 2011). To consider the context of the school-to-work transition, we adapted the exercises and examples to the entrance into the labour market. For example, participants were asked to imagine or identify their emotions here and now at the prospect of the school-to-work transition. Students were also invited to identify their emotion regulation strategies to cope with the upcoming challenges related to the end of their studies. Students were also invited to think about how to use their emotions to guide them with regard to their future career decisions. The intervention took place for 15 hr, split into five modules of 3 hr for five weeks. The sessions were provided each Monday and Wednesday. Each session covered a specific dimension of emotional intelligence. The interval between sessions gave the participants enough time to apply their learning and perform exercises in their daily lives. The modules were delivered in the following order: (1) An introduction to the concept of emotion and the capacity to identify one's own and others' emotions (week 1), (2) the capacity to understand one's own and others' emotions by dissociating the underlying needs of individuals of the antecedents of the experienced emotions (week 2), (3) the capacity to express emotions in a socially adequate manner and to listen to others' emotions (week 3), (4) the capacity to regulate one's own and others' negative and positive emotions (week 4); and (5) the capacity to use one's own and other's emotions to reach personal objectives (week 5). The intervention consisted of theoretical content, videos, role-plays, and debates. In order to avoid an experimenter bias, two trainers (anonymized) gave the intervention and respected precisely the same procedures and content for each group.

2.4 Measures

2.4.1 Emotional Intelligence

Emotional intelligence was assessed with the Profile of Emotional Competence (Brasseur et al., 2013). The original measure includes 50 items ranging from 1 (*strongly disagree*) to 7 (*strongly agree*) and provides separate sub-scores for 5 dimensions (i.e., identification, understanding, expression, regulation, and use) according to 2 targets: own vs. others' emotions. As career adaptability and career decision-making self-efficacy are mainly

predicted by intrapersonal processes, we only resorted to the intrapersonal dimension of emotional intelligence. Based on the sub-scores, a global score of intrapersonal emotional intelligence was formed (α_{T1} = .89; α_{T2} = .92). Examples of items are "*I am aware of my emotions as soon as they arrive*" (for emotion identification) or "*I don't always understand why I am stressed*" (reversed; for emotion understanding).

2.4.2 Career adaptability

Career adaptability was assessed with the Career Adapt-Abilities Scale (Johnston et al., 2013; Savickas & Porfeli, 2012). This measure includes 24 items from 1 ("*Not one of my strengths*") to 5 ("*My greatest strength*") and provides sub-scores for the 4 career adapt-abilities: concern (e.g., "*Concerned about my career*") control (e.g., "*Taking responsibility of my actions*"), curiosity (e.g., "*Becoming curious about new opportunities*") and confidence (e.g., "*Overcoming obstacles*"). Based on the sub-scores, a global score of career adaptability was formed (α_{T1} = .75; α_{T2} = .82).

2.4.3 Career decision-making self-efficacy

Career decision-making self-efficacy was assessed with the French version of the Career Decision Self-Efficacy Scale-Short Form (Betz et al., 1996; Gaudron, 2013). This measure includes 25 items from 0 (*no confidence at all*) to 5 (*complete confidence*) and forms a global score (α_{T1} = .80, α_{T2} = .87). Examples of items are "*Identify employers, firms, institutions relevant to your career possibilities*" or "*Determine what your ideal job would be*."

3. Results

3.1 Descriptive analyses

The correlation matrix between all variables at all times points are displayed in Table 16. Emotional intelligence was found to be significantly related to career adaptability and career decision-making self-efficacy in Time 1 and Time 2.

Table 16. Means, standard deviations and bivariate correlations for the study variables

	1	2	3	4	5	6
1. Intrapersonal emotional intelligence T1	–					
2. Career adaptability T1	.39**	–				
3. Career decision-making self-efficacy T1	.42**	.43**	–			
4. Intrapersonal emotional intelligence T2	.84**	.39**	.37**	–		
5. Career adaptability T2	.33*	.55**	.33**	.48**	–	
6. Career decision-making self-efficacy T2	.28*	.40**	.61**	.35**	.71**	–
M	4.38	3.63	3.41	4.85	3.65	3.49
SD	.82	.33	.38	.77	.38	.43

Note. N_{time1} = 63; N_{time2} = 60. M = mean; SD = standard error; * $p < .05$; ** $p < .01$.

3.2 Preliminary analyses

Independent t-tests (see Table 17) were performed to examine differences between the training and control group prior to the intervention. Overall, no significant differences were found between the training and the control group for the different dimensions and variables, except for the comprehension dimension and, in the end, the global level of intrapersonal emotional intelligence, for which scores in the control group were higher.

Table 17. Means, standard deviations, and significance of differences between training and control groups prior to emotional intelligence intervention

Variable	Training group (n = 31)	Control group (n = 32)		
	M (SD)	*M (SD)*	*t*(61)	*p*
Identification	4.51 (.99)	4.86 (1.20)	–1.23	.22
Comprehension	4.07 (1.30)	5.01 (1.19)	–2.98	.01
Expression	4.31 (1.02)	4.43 (1.48)	–.38	.71
Regulation	3.25 (1.26)	3.78 (1.05)	–1.82	.07
Utilization	4.66 (.76)	4.86 (.56)	–1.17	.25
Intrapersonal emotional intelligence	4.16 (.73)	4.59 (.85)	–2.13	.04
Career adaptability	3.44 (.37)	3.38 (.40)	–.89	.38
Career decision-making self-efficacy	3.58 (.31)	3.66 (.35)	.68	.50

Note. M = mean; SD = standard error; EI = emotional intelligence.

3.3 Overall Effect of the Intervention

The aims of the present study were twofold: 1) examining whether the intervention increased intrapersonal level of emotional intelligence in the training group in comparison to the control group, and 2) examining whether the intervention increased the career adaptability and career decision-making self-efficacy levels in the training group in comparison to the control group. To this end, we performed repeated-measures analysis of variance (ANOVA).

Before performing ANOVAs, normality was assessed with skewness and kurtosis values. The values were for the majority between −2 and +2, indicating a normal univariate distribution (George & Mallery, 2010)

Three Group (training group vs. control group) × Time (Time 1 vs. Time 2) repeated measure analyses of variance (ANOVAs) were performed on each measure, with the group as the between-subjects factor and time as the within-subject factor. A Group × Time interaction would demonstrate a significant change between the two groups. First, results showed a significant Group × Time interaction for intrapersonal emotional intelligence F(1, 58) = 9,49, $p < .001$, estimate (partial η^2_p) = .14. The interaction effects are depicted in Figure 11. However, no significant Group × Time interaction were found for career adaptability F(1, 58) = .34, $p = .56$, estimate (partial η^2_p) = .01 and for career decision-making self-efficacy F(1, 58) = .18, $p = .68$, estimate (partial η^2_p) = .01.

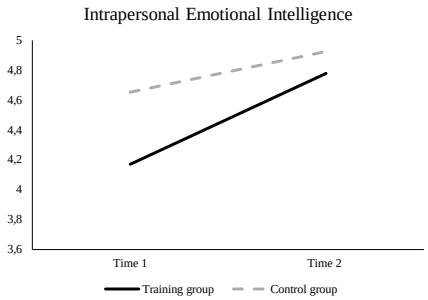


Figure 11. Graphic representation of intrapersonal emotional intelligence before (Time 1) and after (Time 2) the intervention for the training and the control group

3.4 Short-Term Effects of the Intervention

The means, standard deviations, and t statistics between Time 1 and Time 2 for each dimension, variable, and group are displayed in Table 18.

The training group showed a significant increase on emotional intelligence comprehension (d = .85; large effect size), emotional intelligence expression (d = .50; medium effect size), emotional intelligence utilization (d = 1.12; large effect size), and intrapersonal emotional intelligence (d = .84; large effect size). The control group did not present significant differences for most variables, except for emotional intelligence expression (d = .29; small effect size), emotional intelligence utilization (d = .78; medium effect size), and intrapersonal emotional intelligence (d = .34; small effect size).

Table 18. Means, standard deviations, and significance of differences between Time 1 and Time 2 for each variable and each group

	Training group (n = 30)				Control group (n = 30)			
	T1	T2	*t*	*d*	T1	T2	*t*	*d*
Variable	*M (SD)*	*M (SD)*			*M (SD)*	*M (SD)*		
Identification	4.53 (1.01)	4.79 (1.18)	–.74	.24	4.93 (1.20)	5.03 (1.28)	–.74	.16
Comprehension	4.01 (1.28)	4.98 (1.02)	–7.20***	.85	5.07 (1.20)	5.16 (1.26)	–.63	.07
Expression	4.32 (1.04)	4.83 (.99)	–3.27**	.50	4.59 (1.39)	4.95 (1.06)	–2.86**	.29
Regulation	3.33 (1.21)	3.69 (1.25)	–1.83	.29	3.76 (1.07)	4.05 (1.22)	–1.91	.24
Utilization	4.67 (.78)	5.61 (.90)	–6.42***	1.12	4.91 (.54)	5.43 (.80)	–4.27***	.78
Emotional intelligence	4.17 (.74)	4.78 (.72)	–7.45***	.84	4.65 (.84)	4.93 (.81)	–.371**	.34
Career adaptability	3.56 (.27)	3.61 (.39)	–.80	.15	3.39 (.38)	3.68 (.36)	–.17	.78
Career decision-making self-efficacy	3.42 (.35)	3.52 (.43)	–1.27	.26	3.39 (.38)	3.46 (.43)	–1.25	.17

Note. M = mean; SD = standard error.
**p < .01
*** p < .001

3.5 Simple Effect Analyses

The means, standard deviations, and t statistics between the training group and the control group at Time 2 for each dimension, variable, and group are displayed in Table 19.

Overall, even if an interaction was found between the training group and the control group between Time 1 and Time 2, no significant differences between the training group and the control group were observed in Time 2.

Table 19. Means, standard deviations, and significance of differences between training and control groups after the emotional intelligence intervention (Time 2)

Variable	Training group (n = 30)	Control group (n = 30)		
	M (SD)	*M (SD)*	*t(58)*	*p*
Identification	4.79 (1.18)	5.03 (1.28)	–.756	.453
Comprehension	4.98 (1.02)	5.16 (1.26)	–.640	.544
Expression	4.82 (.99)	4.95 (1.25)	–.453	.652
Regulation	3.69 (1.25)	4.05 (1.22)	–1.146	.257
Utilization	5.61 (.90)	5.43 (.80)	.791	.432
Intrapersonal emotional intelligence	4.78 (.72)	4.93 (.81)	–.738	.464
Career adaptability	3.61 (.39)	3.68 (.36)	–.713	.478
Career decision-making self-efficacy	3.52 (.43)	3.46 (.44)	.548	.586

Note. M = mean; SD = standard error.

4. Discussion

The number of interventions developed to enhance individuals' emotional intelligence has increased over the last decades. However, despite the beneficial effect of these interventions on employability and career decision processes (Di Fabio et al., 2011; Nelis et al., 2011), no studies have focused on the context of the school-to-work transition. Building on the career construction theory, the present study aimed to examine whether a structured and validated intervention in emotional intelligence could enhance the intrapersonal emotional intelligence level of students in their last year of university studies at the prospect of their transition to the labour market (H1). The second objective was to investigate whether this intervention in emotional intelligence could develop two important career-related outcomes in the context of the school-to-work transition: career adaptability (H2) and career decision-making self-efficacy (H3).

Our results first revealed that emotional intelligence increased for the training group (i.e., 5 sessions of 3 hr). However, we cannot conclude that the present intervention significantly developed the intrapersonal emotional intelligence of the training group in comparison to the control group. Despite a significant interaction effect between the two groups with regard to emotional intelligence, the simple effect analyses showed no significant differences in Time 2 between the control group and the training group. These results thus contrast with our first hypothesis and with prior research interventional research showing that emotional intelligence can be developed among undergraduate students and adolescents during a short period of time (Di Fabio et al., 2011; Nelis et al., 2011). We thus cannot conclude a causal effect of the intervention. Different issues may explain these results. First, despite a randomization procedure, we observed a higher level of emotional intelligence in the control group prior to the intervention. Second, the control group developed their emotional

intelligence without attending the intervention. Finally, we did not realize a follow-up to examine the long-term effect of the intervention. Indeed, some interventional studies in emotional intelligence demonstrated a higher enhancement of emotional intelligence 6 months later than immediately after the intervention (Kotsou et al., 2018).

In addition, no significant increase between the training and the control group was found with regard to career adaptability. These results contrast with a number of cross-sectional and longitudinal studies that showed the significant relationships between emotional intelligence and career adaptability (Celik & Storme, 2018; Parmentier et al., 2019; Udayar et al., 2018). This apparent lack of effect can be attributed to different potential explanations. The first reason might be related to the time needed to develop career adaptability. According to prior research, a greater awareness of the challenges involved in finding a job might lead to experiencing lower levels of control or confidence due to the number of effort that students have to realize to achieve their career goals. For example, Koen et al. (2012) showed in their intervention that career adaptability dimensions did not increase immediately after the intervention but 6 months later. In the same vein, prior studies have shown that the development of self-regulatory processes – defined as a process that enables individuals to modulate thoughts, affect, and behavior to reach their goals (e.g., career adaptability) – is a dynamic process that requires a certain time (Sitzmann et al., 2009). This issue has also been stressed for emotional intelligence. According to Kotsou et al. (2019), long-term assessment is crucial to evaluate sustained learning transfer and the development of emotional intelligence competencies. This claim is all the more important for outcomes. A series of research showed that the development of intervention-related outcomes (i.e., personality traits) only occurs after six months (Clarke, 2010; Nelis et al., 2011). Thus, it is possible that increasing emotional intelligence does not necessarily increase career adaptability in the short run, suggesting complex temporal dynamics in their relations during the school-to-work transition. As our research did not include a follow-up to examine the long-term effects, future research is thus needed to examine whether emotional intelligence training could increase the level of career adaptability over time. A second reason might be related to the sample. Indeed, most of the participants were enrolled in the faculty of Psychological and Educational Sciences. Thus, they had important knowledge and abilities about emotion and how to deal with it. In addition, despite the randomization procedure, the control group presented a higher level of intrapersonal emotional intelligence than the training group before the intervention. The knowledge and abilities of the control group may thus have masked some effects with regard to career adaptability. A third potential explanation is that career adaptability dimensions are only activated in certain circumstances. According to Rossier (2015), career adaptability is a complex construct, embracing a stable and dynamic processual part. The stable part refers to the readiness to adapt (i.e., the unobservable part). The dynamic part refers to the explicit behavioral expression of career adaptability (i.e., the observable part). In the literature, the distinction between the two parts of career adaptability is still scarce. As developed by Urbanaviciute et al. (2019), the initial stage in the adaptation process is being ready to use one's adaptability resources when it is necessary. In the present study, when we asked students to complete Time 2 (April 2021), they were mainly focused on their exams and on the writing of their master's thesis. It does not mean that students did

not anticipate their transition to the world of work, but they were not engaged in an active job search. It is thus possible that their perception of their career adaptability in Time 2 was not higher than in Time 1.

For career decision-making self-efficacy outcome, no studies have investigated the impact of emotional intelligence training on this outcome. As for career adaptability, no significant differences were found between the training and the control group after the intervention. In other words, the present training did not enhance the participants' career decision-making self-efficacy level. These results are in contrast with prior interventional research. For example, Di Fabio & Kenny (2011) showed that training in emotional intelligence increased the level of emotional intelligence and decreased the levels of indecisiveness and career decision difficulties among Italian secondary school students. In contrast to our design, the authors administrated the Time 2 one month after the intervention. As for career adaptability, it is possible that developing career decision-making self-efficacy may take some time. It is also possible that the higher level of emotional intelligence in the control group masked some effects on career decision-making self-efficacy.

Overall, the current results emphasize a discrepancy between the results from prior cross-sectional studies and ours. Despite contradictory results, the present study stresses the critical importance of examining the development of career-related outcomes in the vocational literature through experimental and interventional design. According to Rudolph (2021), the central methodology used in career sciences is still cross-sectional designs (i.e., single time point), limiting our comprehension of vocational processes significantly. Indeed, such designs are not without limitations such as endogeneity, that is, the impossibility of interpreting the effect of x on y in a causal model (Antonakis et al., 2010). Furthermore, this kind of design does not offer either the possibility to examine the direction and magnitude of emotional intelligence effects and its development over time. Hence, it is recommended to develop triangulation in methodological designs (e.g., cross-sectional, longitudinal, and experimental). By doing so, it deepens our understanding of vocational processes using independent and various sources of empirical evidence. To the best of our knowledge, the present study is the first that contrasts results between emotional intelligence, career adaptability, and career-decision making from cross-sectional, longitudinal, and experimental designs. The current research is thus a call to develop more intervention programs and experimental studies in the career literature.

5. Limitations and future directions

Several limitations in the current study could have influenced the results obtained. First, and most importantly, our research did not include a follow-up examining the long-term effects of the intervention. However, a series of research demonstrated that emotional intelligence and career adaptability intervention enhancement might occur only after a specific period of time (for a review, see Kotsou et al., 2019; Koen et al., 2012). The question of timing seems, therefore, to be essential, and future research should thus assess the long-term outcomes of the intervention (i.e., 6 months or more). In the context of the school-to-

work transition, future research should evaluate the effect of the intervention after the transition and include objective measures of job search outcomes such as the number of job offers or when graduates find a job. Indeed, in the present study, students were invited to respond during a period in which they were preparing for their exams and their master's thesis. Second, despite the randomization procedure, there were level differences between the training and the control group before the intervention with regard to emotional intelligence. It is thus possible that it influenced the effects on career adaptability and career decision-making self-efficacy. Third, our sample was mainly composed of female students. Hence, we were unable to control for gender. In the same vein, most participants were enrolled in the Educational and Psychological Sciences programme with lots of knowledge about emotion. Future research should replicate these findings with a larger and more representative sample. Fourth, the measures were mainly based on self-reports and may be biased due to common method variance (Pirsoul et al., 2018; Podsakoff et al., 2003). Future research should thus include objective measures such as behavioral and biological measures of emotional intelligence and emotions. Accordingly, prior research showed that emotional intelligence training decreased stress response by examining cortisol levels (Kotsou et al., 2011).

6. Practical implications

Along with the theoretical contributions brought by the current study, a series of implications for practice could be emphasized. First, the present research responds to numerous calls for the development of emotional intelligence training in the context of the school-to-work transition and the vocational literature (Parmentier, Dangoisse, et al., 2021). In contrast to our hypotheses, we were not able to demonstrate the development of emotional intelligence by comparing a training group and a control group. Second, the present research showed that career adaptability and career decision-making self-efficacy did not increase immediately after the intervention. As developed in the discussion section, it has been acknowledged that the development of career adaptability may take some time (Koen et al., 2012). In spite of the non-significant results with regard to emotional intelligence and career-related variables after the intervention, developing interventions in a preventive approach is essential to prepare individuals to cope with transition-related challenges and build sustainable careers. Given the importance of time in the development of emotional intelligence and career adaptability, offering and dispensing training earlier in the university curriculum is also essential (Fouad et al., 2006). Our research thus contributes to new ideas for intervention in academic and vocational counseling and fosters the importance of developing interventional studies in the vocational and career literature.

Chapter 8

Emotional intelligence in career development

A meta-analysis

The concept of emotional intelligence has increased researchers' interest over the last decades and is now considered as a critical meta-competency that helps individuals to deal with career challenges. However, no empirical effort to synthesize and integrate these studies has been realized. To this end, the current research addresses this purpose by conducting a systematic review and meta-analysis to investigate the extent to which emotional intelligence was associated with a series of career-related outcomes, but also to examine whether relationships are influenced by a series of moderators. On a total of 141 published and unpublished studies and N = 48,862 participants, our random-effects meta-analytic investigation showed that emotional intelligence was significantly related to career adaptability, career commitment, career decision-making difficulties, career decision-making self-efficacy, objective career success (i.e., salary), subjective career success (i.e., career satisfaction), entrepreneurial self-efficacy, entrepreneurial intentions, and turnover intentions. However, no significant correlations were found with self-perceived employability and job search self-efficacy. Overall, this work brings important theoretical contribution to the career construction model of adaptation but also provides an overarching picture of what we know about emotional intelligence in career development. This research finally highlights the main limitations in the study of emotional intelligence in career development and provides a series of recommendations and an agenda for future research.

Reference

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Chapter 8

Emotional intelligence in career development

A meta-analysis

1. Introduction

Over the last decades, a significant number of scholars have highlighted the role of emotion in individuals' career development (Kidd, 1998; Hartung, 2011). Indeed, according to Simonsen (1997), career development is an ongoing process of planning action toward personal work and life goals. It thus involves a lot of challenges such as critical career decisions, continuous acquisition of one's skills, adaptation to a changing world of work, the development of fulfilling work and life balance, and the negotiation of career transitions across the life span. In this context, increased attention has been devoted to personal resources that support individuals in coping with the difficulties and challenges they may encounter during their career development. Accordingly, the concept of emotional intelligence—defined as the extent to which individuals identify, understand, express, regulate, and use one's and others' emotions—has been recognized as such a resource within the context of career development (Parmentier et al., 2019). Understanding and managing one's emotions constitute important competencies and self-regulatory resources for career event self-management (Potgieter, 2014).

A growing corpus of empirical findings has shown the importance of emotional intelligence in the career and guidance counseling literature. For instance, emotional intelligence has been claimed as a predictor of career adaptability (Parmentier et al., 2019), career decision-making processes (Di Fabio & Kenny, 2011), career satisfaction (Pirsoul et al., 2021), career commitment (C. Brown et al., 2003), and employability (Nelis et al., 2011). Despite the emergence of emotional intelligence research in the career context, different obstacles may hamper its credibility and advancement at the theoretical and practical levels. First, emotional intelligence has been widely investigated with an apparent lack of career theoretical frameworks, limiting our comprehension of its enactment with regard to career and vocational processes. Nevertheless, some prior research proposed the career construction model of adaptation to understand the predictive role of emotional intelligence on career-related outcomes (Savickas, 2005). Second, most studies have been conducted independently from each other, with a lack of integrative effort to better understand the beneficial effects of emotional intelligence regarding career-related outcomes. Indeed, there is no unifying empirical effort that examine how and to what extent emotional intelligence are related to the main career-related outcomes investigated in the literature.

The present study aimed to pursue three main objectives to address these issues. First, we aimed to propose an overarching picture of what we know about emotional intelligence in career development using a systematic review procedure and a meta-analytic investigation. Using these approaches thus allowed for identifying and comparing the overall effect sizes between emotional intelligence and the different career-related outcomes. Second, to better understand the robustness of these relationships, we aimed to perform a set of moderation analyses to examine which variables may influence the relationships between emotional intelligence and career-related outcomes. Based on the current findings, the final objective of the present research was to highlight the main limitations in the investigation of emotional intelligence in career development and develop a future research agenda.

The present work offers several valuable contributions to the literature. First, to the best of our knowledge, this is the first systematic review and meta-analysis that aims to propose an overall picture of what we know about emotional intelligence in career development. Indeed, the current meta-analysis offers the possibility of quantitatively determining the main career correlates of emotional intelligence and extending prior meta-analyses that focused only on a limited number of variables (Miao et al., 2017a; Miao, Humphrey, Qian, et al., 2018; Vashisht et al., 2021). Second, it also highlights the main limitations in the investigation of emotional intelligence in the career literature. Third, we considered not only subjective but also objective indicators of career success (i.e., salary), representing a core strength of the current study. Fourth, the inclusion of published and unpublished studies provides a more accurate precision with regard to the magnitude of effect sizes. Fifth, the current meta-analysis provides an empirical contribution to the career construction model of adaptation and thus increases the linkages between emotional intelligence and career theories. Finally, by highlighting the limitations of research findings with regard to the role of emotional intelligence on career-related outcomes, we also develop a specific research agenda for future research.

1.1 Emotional intelligence: definition and operationalization

The concept of emotional intelligence in the scientific literature comes from a pivotal paper written by Salovey and Mayer in 1990 in which they defined the concept as the *ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions* (p. 239). However, thanks to the famous book by Daniel Goleman published in 1995, the concept has gained tremendous popularity among the scientific community and the general public. Since the nineties, the concept of emotional intelligence has increasingly grasped researchers' interest and has given rise to a plethora of definitions and conceptualizations. Emotional intelligence conceptualizations encompass a variety of dimensions such as emotional functioning and treatment (e.g., emotion identification, emotion understanding, emotion expression, emotion regulation, emotion use), and other non-cognitive factors (e.g., empathy, self-actualization, leadership, or adaptation). Overall, two approaches have influenced the literature: the ability-emotional intelligence (Mayer & Salovey, 1990) and the trait-emotional intelligence

(Petrides et al., 2007). Table E1 in the supplemental materials proposes an overarching synthesis of the main different definitions, approaches, and conceptualizations of emotional intelligence. Overall, the cumulative empirical efforts on the concept led authors to acknowledge emotional intelligence as a general factor of adaptive functioning, delineating the differences and/or abilities in the extent to which individuals identify, understand, express, regulate and use one's and others' emotions (Mikolajczak et al., 2009; Pekaar et al., 2020).

1.2 Correlates of emotional intelligence in career development

Over recent years, different theories have informed about how emotional intelligence might be considered as a resource to help individuals in navigating through their career development. First, different authors fostered Young et al.'s (1996) contextual action theory of career. Accordingly, this theory posits that emotions (1) motivate action, (2) regulate actions, and (3) offer the possibility to access to and the development of self-narratives about career choice. Following these authors, developing awareness about one's emotions help individuals in their career trajectories. These assumptions aid the development of a review developed by Emmerling and Cherniss (2003), in which authors claimed that emotional intelligence plays a crucial role in career decision processes. More recently, emotional intelligence has been integrated into the career construction model of adaptation (Savickas, 2005; Hirschi et al., 2015). According to this model, emotional intelligence is considered as a stable psychological resource that refers to the individuals' readiness and willingness to cope with career-related issues, labeled *Adaptivity*. In turn, individuals' adaptivity contributes to the mobilization of their *Adaptability*, that is, their actual abilities to anticipate and adapt to career difficulties. This concept is primarily referred to as the concept of career adaptability. In this model, so-called "career adapt-abilities" influence how individuals develop adaptive behaviors and self-beliefs with regard to career conditions (i.e., *Adapting responses*). Finally, adaptability and adapting responses influence *Adaptation results*.

Based on these different models, we outlined and defined in the following section the different career-related outcomes that emerged from our systematic review: career adaptability, career decision-making difficulties, career decision-making self-efficacy, salary, career satisfaction, self-perceived employability, entrepreneurial self-efficacy, entrepreneurial intentions, job search self-efficacy, and turnover intentions. We also offered a series of theoretical assumptions to explain how emotional intelligence may be considered as a predictor of the following career outcomes.

1.2.1 Career adaptability

Career adaptability refers to a set of self-regulatory psychosocial resources that help individuals to anticipate, cope with, and manage career-related difficulties (Savickas & Porfeli, 2012). A handful of research showed the relationship between emotional intelligence and career adaptability. Coetzee and Harry (2014) initially showed a positive relationship between the two constructs. According to these authors, individuals with high emotional

intelligence dispose of a greater capacity to manage and use one's emotions to guide their thoughts and actions, resulting in a better ability to plan their vocational future, take responsibility for one's career, explore their environment and stay informed about career opportunities, but also a to develop the confidence to cope with career development tasks. A few years later, a series of studies supported these assumptions by demonstrating the mediating effect of career adaptability on the relationship between emotional intelligence and academic satisfaction (Celik & Storme, 2018), academic engagement (Merino-Tejedor et al., 2018), self-perceived employability, and career indecisiveness (Udayar et al., 2018). These results have been corroborated by a longitudinal cross-lagged study that demonstrated the relationship between emotional intelligence to career adaptability (Parmentier et al., 2019). A recent study also showed the predictive effect of emotional intelligence on career adaptability profiles (Parmentier, Pirsoul, et al., 2021). A recent meta-analysis also showed a positive relationship between the two constructs (r = .446, Vashisht et al., 2021). Based on these different theoretical assumptions and empirical evidence, we expected that emotional intelligence would be positively related to career adaptability.

Hypothesis 1. *Emotional intelligence is positively associated with career adaptability*.

1.2.2 Career commitment

Career commitment refers to individuals' confidence and certainty regarding one's choice and a positive perception of one's career future (Blustein et al., 1989). Indeed, the first study investigating this association was conducted by Carson and Carson (1994), demonstrating a positive relationship between emotional intelligence and career commitment. These results were corroborated by Brown et al. (2003) and Sultana et al. (2016). According to Sultana et al. (2016), emotional intelligence may help individuals identify and manage emotional experience fluctuations in the work context, leading to a higher level of positive emotions, motivation, and enthusiasm in professional tasks. As a result, it leads to a higher level of commitment in their career. Hence, we expected a positive relationship between the two constructs.

Hypothesis 2. *Emotional intelligence is positively associated with career commitment*.

1.2.3 Career decision-making processes

Career decisions represent complex and essential processes that individuals have to make throughout their career development (Kulcsár et al., 2020). Hence, an important number of individuals present some difficulties in their abilities to make such decisions, given the emotional nature of the process. Accordingly, Emmerling and Cherniss (2003) argue that individuals with high emotional intelligence are more aware and able to manage their emotions with regard to the career decision-making process. We review here two critical career decision-making processes that have been related to emotional intelligence: career decision-making difficulties and career decision self-efficacy.

1.2.3.1 Career decision-making difficulties

Career decision-making difficulties were initially related to the construct of career indecision, which is defined as the problems that individuals may have in making career decisions (for a review, see Kulcsar et al., 2020). Based on decision theory, Gati et al. (1996) proposed a taxonomy of career decision-making difficulties. This taxonomy includes three major difficulty categories: (1) lack of readiness (arising before the beginning of the career decision-making process), (2) lack of information, and (3) inconsistent information (arising during the career decision-making process). Indeed, Di Fabio and Palazzeschi (2008) showed a negative relationship between emotional intelligence and the three aforementioned dimensions of career-decision making difficulties. In the same vein, Dahl et al. (2008) demonstrated a negative relationship between emotional intelligence and negative career thoughts (i.e., decision-making confusion, commitment anxiety, and external conflict). Di Fabio et al. (2013) also showed that emotional intelligence was more related to career decision-making difficulties, wherein career indecisiveness was more related to personality traits such as emotional stability. In 2014, Di Fabio and Saklofske also pointed out that self-report emotional intelligence predicted career indecision and indecisiveness over and above cognitive intelligence, the Big 5 personality traits, and ability-based emotional intelligence. Recently, Santos et al. (Santos et al., 2018) showed the predictive effect of emotional intelligence on career decision-making difficulties. These findings are in line with an experimental study that showed that a structured training in emotional intelligence decreased career indecisiveness and career decision difficulties (Di Fabio & Kenny, 2011). We thus expected that emotional intelligence would be negatively related to career decision-making difficulties.

Hypothesis 3. *Emotional intelligence is negatively associated with career decision-making difficulties.*

1.2.3.2 Career decision-making self-efficacy

Career decision-making self-efficacy refers to the individuals' beliefs in their ability to successfully realize the required tasks to make career decisions (Betz & Luzzo, 1996). Compared to career decision-making difficulties, it is a form of self-belief that may arise before the career decision process. Indeed, cross-sectional research has shown its relationship with emotional intelligence. First, Brown et al. (2003) showed that emotional intelligence was related to career decision-making self-efficacy as well as Jiang (Jiang, 2014, 2016). Di Fabio and Saklofske (2014) extended these results by showing the incremental validity of emotional intelligence over personality traits in association with career decision-making self-efficacy. Santos et al. (2018) also showed the mediating role of career decision-making self-efficacy on the relationship between emotional intelligence and career decision-making difficulties. Finally, Parmentier et al. (2021) found a positive relationship between emotional intelligence and career decision self-efficacy. We thus expected that emotional intelligence would be positively related to career decision self-efficacy.

Hypothesis 4. *Emotional intelligence is positively associated with career decision-making self-efficacy.*

1.2.4 Career success

Following Seibert et al.'s (1999) definition, career success refers to the positive psychological or work-related achievements that individuals have developed over work experiences. Most studies tend to differentiate two forms of career success, that is, objective career success and subjective career success. Objective career success may be defined as a set of indicators such as salary, promotions, or hierarchical position. In parallel, subjective career success mainly refers to career satisfaction (Ng et al., 2005). Hence, career satisfaction refers to a form of subjective career success and can be defined as the extent to which individuals perceive their career progress is in line with one's career goals, values, and preferences (Greenhaus et al., 1990; Seibert et al., 2001).

Regarding the link between emotional intelligence and objective career success, a series of cross-sectional studies indicated that a higher level of emotional intelligence was associated with a higher level of salary (de Haro García & Costa, 2014; Urquijo et al., 2019). These studies have been corroborated by longitudinal studies (Rode et al., 2017). Based on the social capital theory, authors argue that emotionally intelligent individuals tend to develop strong interpersonal relationships and networks, allowing them to access social resources and use them. For the relationships between career satisfaction and emotional intelligence, Pool and Qualter (2013) first showed a positive relationship between the two constructs. Some authors corroborated these results using a longitudinal research design (de Haro Garcia & Costa, 2014). A recent cross-sectional design extended these findings (Urquijo et al., 2019). Accordingly, Emmerling and Cherniss (2003) argue that individuals with high emotional intelligence tend to realize choices in line with their needs and career aspirations, leading to better career satisfaction in the long run. Thus, we expected that emotional intelligence would be positively related to salary and career satisfaction.

Hypothesis 5a. *Emotional intelligence is positively associated with salary.*

Hypothesis 5b. *Emotional intelligence is positively associated with career satisfaction.*

1.2.5 Employability

Employability has received a great amount of interest, leading to a wide range of different definitions. However, most definitions align with the idea that employability refers to an individual's (perceived) capacity to obtain and maintain employment throughout their career (e.g., de Cuyper & de Witte, 2011; Heijde & Van Der Heijden, 2006; Rothwell & Arnold, 2007). Indeed, it has been demonstrated that individuals that have difficulties in managing their emotions are more than twice likely to be unemployed (Mikolajczak, Luminet, Leroy, & Roy, 2007). Hence, individuals who have difficulties managing their emotions may also have difficulties finding a job and remaining employed. A handful of cross-sectional studies supported this first study by showing a positive relationship between emotional intelligence and self-perceived employability (Coetzee & Beukes, 2010; Di Fabio

& Kenny, 2015; Schreuder & Coetzee, 2011; Udayar et al., 2018). These findings have also been corroborated by experimental studies in which researchers showed that a structured intervention in emotional intelligence increased the objective level of employability among undergraduate students (Nelis et al., 2011) and unemployed adults (Hodzic et al., 2015). More specifically, students that attended an emotional intelligence were less stressed during job interviews and were able to express their intentions in a more sophisticated manner. Thus, we expected that emotional intelligence would be positively related to employability.

Hypothesis 6. *Emotional intelligence is positively associated with employability*.

1.2.6 Entrepreneurship

Two main definitions have been developed to account for the concept of entrepreneurship. On the one hand, the first definition refers to the entrepreneur status. In other words, entrepreneurs refer to self-employed individuals (van Praag & Versloot, 2008), that is, the ability to develop control and become the owner of a company. On the other hand, some authors also considered the underlying processes related to entrepreneurship, such as entrepreneurial intentions, attitudes, and beliefs. Accordingly, entrepreneurial intentions refer to the individuals' level of motivation and interest in developing their own company (Zhao et al., 2010). This first entrepreneurial process has been demonstrated as a core antecedent of entrepreneurial actions (Brandstätter, 2011). Entrepreneurial attitudes refer to the degree to which individuals have a favorable or unfavorable evaluation of launching entrepreneurial activities (Fernández-Pérez et al., 2019; Icek, 2019). In the same vein, entrepreneurial self-efficacy tends to be another important antecedent to new venture creations, referring to individuals' belief in their ability to successfully launch an entrepreneurial venture (Boyd & Vozikis, 1994). A series of studies have investigated the relationships between emotional intelligence and entrepreneurial processes. First, a recent meta-analysis realized by Miao et al. (2018) has shown that emotional intelligence was positively related to entrepreneurial intentions (r_c = .24). Zampetakis et al. (2009) also showed a positive relationship between positive attitudes towards entrepreneurship and emotional intelligence. Finally, Fernandez et al. (2019) also showed a positive relationship between entrepreneurial self-efficacy and emotional intelligence. These results stem from the hypothesis that individuals with high emotional intelligence a more able to negotiate with stakeholders thanks to their ability to identify and use others' emotions, leading to better satisfying their interlocutor. Individuals with high emotional intelligence are also better at managing one's stress related to launching and operating a new venture. Finally, high emotional intelligence allows individuals to recognize and take advantage of career opportunities.

Hypothesis 7a. *Emotional intelligence is positively associated with entrepreneurial self-efficacy.*

Hypothesis 7b. *Emotional intelligence is positively associated with entrepreneurial intentions.*

1.2.7 Job search self-efficacy

According to Saks and Ashforth (1999), job search self-efficacy is defined as the individuals' belief with regard to their ability to perform job search behaviors successfully. Hence, research showed the predictive effect of emotional intelligence on active job search behaviors through the mediation effect of job search self-efficacy (Nieto-Flores et al., 2019). A recent study also demonstrated that emotion regulation was a predictor of employment status via job search self-efficacy (Urquijo et al., 2019). In line with Young et al.'s (1996) assumption, emotional identification is a core process in the investigation and understanding of individuals' career interests and in carrying out actions in agreement with their emotions. For example, an interventional study has shown that students with a higher level of emotional intelligence after the training were better at managing their emotions during a recruitment interview (Nelis et al., 2011).

Hypothesis 8. *Emotional intelligence is positively associated with job search self-efficacy.*

1.2.8 Turnover intentions

Turnover intentions refer to conscious and deliberate willingness to leave the organization or the job in which individuals work (Meyer & Tett, 1993). Hence, turnover intention is a form of cognitive shift for workers as they detach progressively from the organization (Burris et al., 2008). Following the theory of planned behavior, turnover intentions are a core antecedent of objective turnover and thus involve important theoretical and practical considerations (Van Breukelen et al., 2004). Regarding its relationship with emotional intelligence, a recent meta-analysis conducted by Miao and colleagues (Miao et al., 2017a), including 17 studies, revealed a significant and negative association ($r_c = –.33$). Accordingly, scholars argue that individuals with a high level of emotional intelligence tend to appraise their jobs as more positively and are able to identify and regulate their one's and others' emotions in order to respond to environmental and work demands. As a consequence, they tend to choose a job in accordance with their career and personal needs, leading to a higher level of job satisfaction and a lower level of turnover intention.

Hypothesis 9. *Emotional intelligence is negatively associated with turnover intentions.*

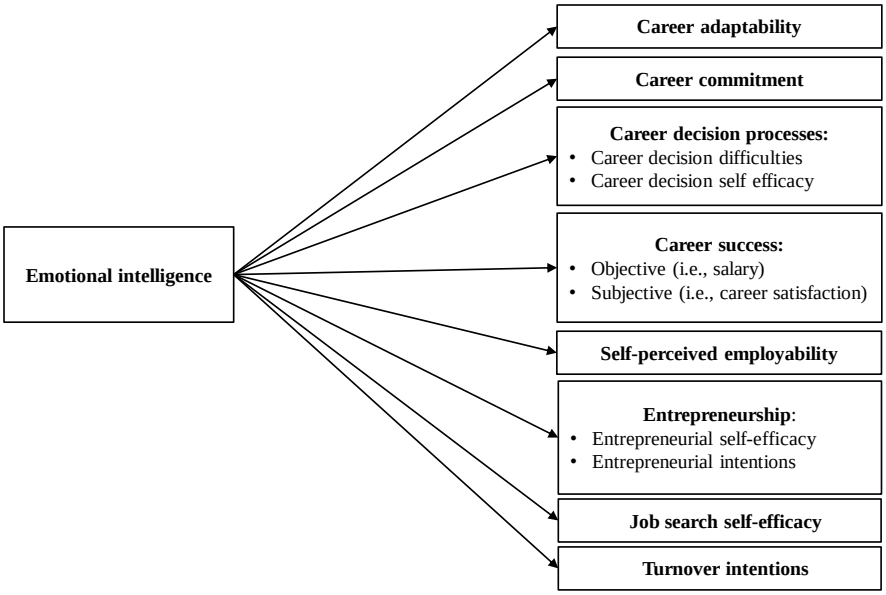


Figure 12. The overall model of the relationships between emotional intelligence and career-related outcomes investigated in the present meta-analysis

1.3 Moderators of the emotional intelligence–career-related outcomes relationships

To better understand how the relationships between emotional intelligence and career-related outcomes may vary due to covariates, we systematically examined the extent to which gender composition, the mean age of participants, sample type, and publication type moderated the relationships. These variables were selected based on previous research or theoretical assumptions that claimed that the role of emotional intelligence on career-related outcomes might vary as a function of these variables.

1.3.1 Gender composition

Although evidence supports a beneficial relationship between emotional intelligence and career-related outcomes, the literature is not clear whether this association may change between male and female participants. Prior studies have provided inconsistent results with regard to gender differences in the investigation of emotional intelligence. Findings from recent meta-analyses have even found no differences between females and males with regard to the general score of emotional intelligence (for meta-analyses, see Joseph & Newman, 2010; MacCann et al., 2019). However, we think that considering gender as a moderator is important for many reasons. First, beyond these results that primarily considered the investigation of gender as a binary variable (females vs. males), other research claimed the importance of gender in the socialization of emotion. Indeed, some authors argued that parents, friends, or society influence the socialization of emotional experience and expression

(Brody et al., 2016). For example, girls are expected to develop caring behaviors and express some negative emotions such as sadness. In contrast, boys are expected to develop agentic behaviors and express some anger. Although some meta-analyses did not demonstrate significant differences among men and women on a series of psychological variables (i.e., gender similarities hypothesis, Hyde, 2005), it has been shown that gender stereotypes and gender role socialization may influence career choices. For example, some studies have shown that women are less attracted to science, technology, engineering, and mathematics careers than males (Davila Dos Santos et al., 2022). These findings stem from the hypothesis that female students perceived themselves as less competent or legitimate to work in a job considered as "male-oriented." In addition, due to the glass ceiling or discrimination, it is also possible that gender may influence career choices and, in the end, career and vocational processes (M. S. Baumgartner & Schneider, 2010; Powell & Butterfield, 2015).

1.3.2 Age

While empirical evidence in the career literature did not clearly investigate associations between emotional intelligence and age, it is possible that age may be a moderator between emotional intelligence and career-related outcomes. Indeed, some research showed that older individuals tend to present a higher level of emotional intelligence when compared to young individuals (Kafetsios, 2004). In addition, some authors argued that human capital is a core predictor of career-related outcomes. Thus, older workers may present a higher level of resources to cope with career-related processes (Becker, 1975; Zacher, 2014). The career stage perspective may also explain the influence of age on the relationships between emotional intelligence and career-related outcomes (Sullivan & Al Ariss, 2021). According to Super (1957), when individuals progress in their careers, they develop a better awareness of their skills and career interests, but also of their professional and personal needs. As a result, it is possible that higher age moderates positively (or negatively for turnover intentions) the relationships between emotional intelligence and career-related outcomes.

1.3.3 Sample type

As subgroups of the population may experience and anticipate the labour market and the career development differently (Kanfer et al., 2001), we decided to examine whether the correlation effect sizes may be affected by whether participants were students or workers. Indeed, it has been demonstrated that the emotions that individuals anticipate and experience at the prospect of future transitions play an important role in how they visualize their transition and how to cope with it (Parmentier, 2022). These mechanisms have been demonstrated during the transition to higher education, to the world of work, and also from unemployment to employment. According to the career stage perspective of Super (1957), we also think that workers have a higher level of experience in the labour market when compared to students and, in the end, are more confident in coping with their transition and career development.

1.3.4 Publication type

Over recent years, increasing attention has been devoted to the question of replication, comprising careers science (Akkermans, I.S.G. Lee, et al., 2021; Rudolph, 2021). Indeed, effect sizes reported in published articles tend to consistently present higher values when compared to unpublished studies, leading to hampering the confidence in research findings (Klein et al., 2018). Therefore, we tested whether the publication type influenced the effect sizes by differentiating peer-review articles from unpublished datasets, dissertations, and conference proceedings to address this issue.

2. Method

2.1 Inclusion and Exclusion Criteria

We developed a set of inclusion/exclusion criteria prior to performing the systematic review. First, articles must have reported empirical findings on the relationships between emotional intelligence and career-related outcomes. To this end, we included all career-related outcomes that fitted with the directive from the 21th of November, 2008 from the Council of the European Union defining guidance as "*a continuous process that enables citizens at any age and at any point in their lives to identify their capacities, competences and interests, to make educational, training and occupational decisions and to manage their individual life paths in learning, work and other settings in which those capacities and competences are learned and/or used. Guidance covers a range of individual and collective activities relating to information-giving, counselling, competence assessment, support, and the teaching of decision-making and career management skills."* In addition, all included career-related outcomes had to fit with the transition and career processes, that is, the physical movements and psychological transitions, including individuals' career events perception (e.g., job loss as a failure), career alternatives (e.g., turnover intentions), and outcomes (e.g., career satisfaction). These considerations are aligned with the career definition developed by Sullivan and Baruch (2009). Second, articles must have developed a quantitative approach and provided a quantitative effect size (i.e., correlation) between emotional intelligence and career-related outcomes. We thus excluded qualitative interviews and single-case studies. If the correlation coefficient was not provided, we contacted the authors. In other cases, we converted other types of statistical tests to a correlation coefficient when possible. More specifically, we derived r_s from standardized regression coefficients (β-statistics), which were then converted to correlation coefficients using the following formula: β +.05 when β is nonnegative and β + 0 when β is negative (Peterson & Brown, 2005). Third, articles must have measured emotional intelligence with an empirical instrument. Fourth, we excluded studies in which researchers used the same dataset. According to Rudolph et al.'s recommendations (2020), only one effect size was coded for each sample. In the same vein, when studies provided multiple time assessments, only time one was included. Finally, the mean correlation effect size was performed from a least three independent samples (i.e., K ≧ 3).

2.2 Search strategy and study selection

The current search strategy and citations are depicted in the PRISMA chart (Moher et al., 2009) in Figure 13. First, we followed the best practice recommendations of Harari et al. (2020) to search and identify the relevant articles following our inclusion criteria. Thus, with the help of different librarians of the UCLouvain university, we first decided to develop a research equation that aimed to focus on career context and career-related words (e.g., "career transition," "unemployment," or "career development"). Indeed, consulting librarians is a quality assurance to determine the search strategy and parameters (Harari et al., 2020; Koffel, 2015). Then, we developed research equations that were adapted to each of the following databases: PsycINFO, ERIC, Scopus, Web of Science, and Francis. We also extracted articles from Google Scholar. To identify the grey literature, we also performed our research on the dissertation database NDLTD. To identify the grey literature in French, we also investigated six thesis databases in Belgium (i.e., UCLouvain, ULiège, UNamur, Université Saint-Louis, Vrij Universiteit Brussel, UGent), one in France (i.e., Thesis.fr), one in Switzerland (i.e., Helveticat), and one in Canada (i.e., Erudit). The full search equation is available in Appendix E2. An additional search was performed in the following specific journals in career development: *British Journal of Guidance & Counselling*, *Career Development Quarterly, Journal of Career Assessment, Journal of Career Development, Journal of Counseling Psychology, Journal of Employment Counseling, Journal of Occupational Rehabilitation, Journal of Vocational Behavior,* and *L'orientation scolaire et professionnelle*. In line with Harari et al.'s recommendations (2020), we also put out a call on the EMONET listserv to ask for unpublished data. In parallel, we contacted 34 researchers who have published articles examining the role of emotional intelligence in career development and received responses from 16 (47% response rate). These authors were contacted twice. Unfortunately, they had no additional data to provide. After the first screening of titles and abstracts, we identified 49 eligible career-related outcomes, described in Appendix E3. Based on these results, we observed that some career-related outcomes citations were underrepresented, such as entrepreneurial outcomes or turnover intentions. Hence, we decided to run a second search before analyzing full-text articles. To do so, we developed a new research equation based on the aforementioned career-related outcomes. The search equation is available in Appendix E4. We then realized this research on four databases that is, PsychINFO, ERIC, Web of Science, and Scopus. The extracted citations were thus incorporated into the first search. Between July 31th and September 07th, 2021, we extracted citations from the first different databases. The second systematic search was performed between March 19th and 21th 2022. Then, we contacted 80 additional authors. We contacted authors twice. No additional correlations were provided.

2.3 Study selection

The two first authors examined titles, abstracts, and full texts of studies on the software Rayyan (Ouzzani et al., 2016) and included studies that fit the inclusion and exclusion criteria. This software offers the possibility to check the article independently. For the first search, 4604 citations were extracted from the different databases. After removing duplicates

(n = 1084), a total of 3520 studies were screened for titles and abstracts. We excluded 3111 citations that did not fit the inclusion criteria. Indeed, 409 citations were included for full-text screening. In parallel, the second research led to a total of 2140 citations. However, these citations overlapped with the 3520 citations from the first search. We thus removed 1001 duplicates, leading to a total of 1139 additional studies. We then retained 322 citations for full-text screening. Finally, a total of 731 were eligible for full-text screening. From these 731 citations, 22 citations were removed as they were duplicates. After analyzing the 709 articles, we added 19 additional citations from other sources (e.g., Miao et al., 2017, 2018). All disagreements were discussed until the authors found a solution. Finally, there were K = 141 different citations with a total of N = 48,662 eligible for analysis.

2.4 Coding

Each of the effects was coded by the two first authors. All discrepancies were discussed, and a solution was reached on all coding decisions. The final coding included the following information: (1) the effect size using Pearson's correlation (r), (2) the mean sample size ranging from 59 to 1655 participants, (3) the reliabilities of emotional intelligence measures and career-related outcomes measures (i.e., Cronbach alphas), (4) The emotional intelligence measures (i.e., the scale name and the scale format [performance-based vs. self-report]). As the number of performance-based measure was smaller than three for most career-related outcomes, we only included self-report measures of emotional intelligence, (5) The percentage of female participants in each of the citations ranged from 0.04 to 98.60 % (coded as a continuous variable), (6) the mean age of participants (coded as a continuous variable) that ranged from 15.8 to 44.78, (7) the sample type (coded as a categorical variable as follows: 0 = students [i.e., 45.39 %], 1 = workers [i.e., 54.61 %]), (8) The publication type (coded as a categorical variable as follows: 0 = unpublished [i.e., 20.57 %], 1 = published [i.e., 79.43 %]), and (9) Information about the context of the study (coded as a categorical variable as follows: 0 = no specific transition context [i.e., 5.67%], 1 = specific transition context [90.33 %; e.g., transition from university to the labour market]).

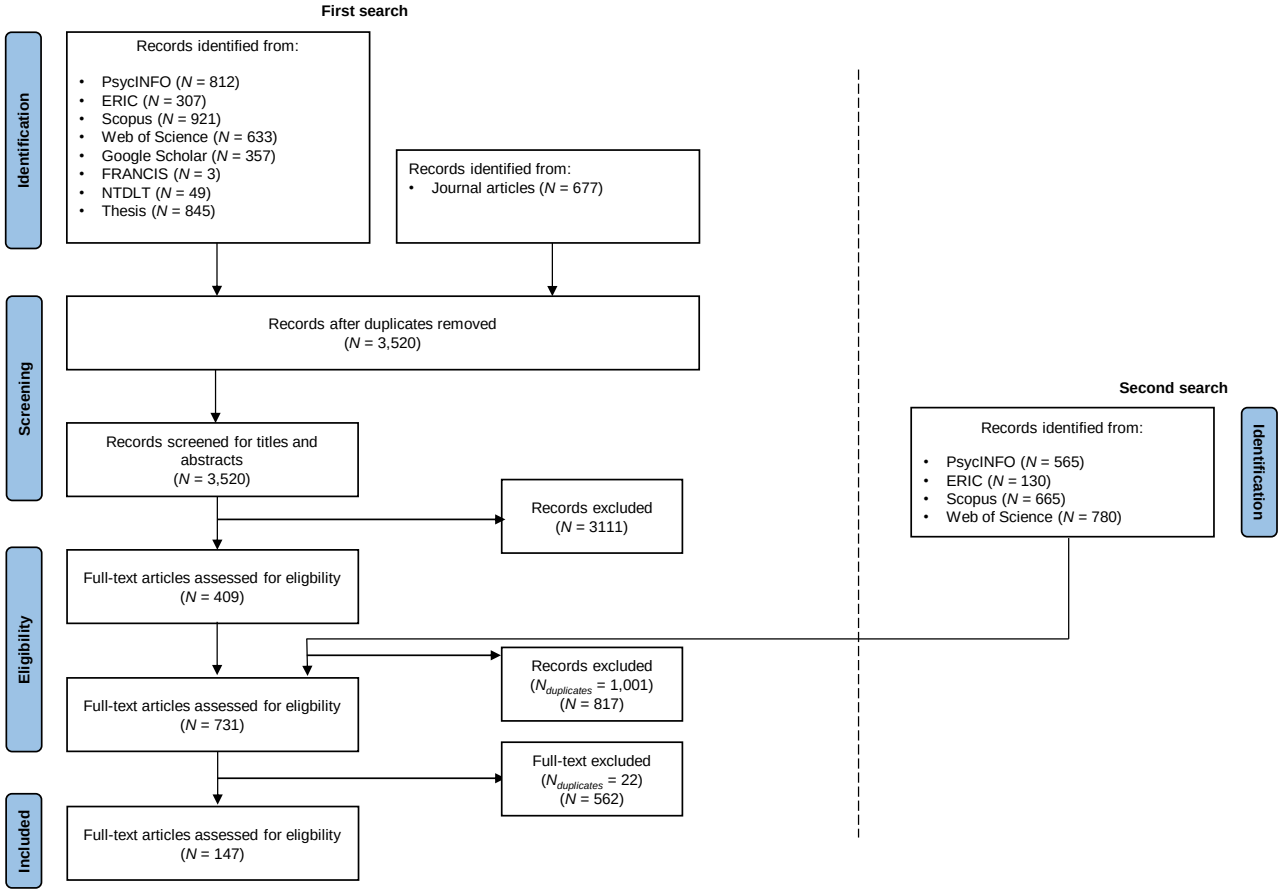


Figure 13. PRISMA Flow Diagram

2.5 Meta-analytical Procedure

Following the recommendations of Rudolph et al. (2020), we used Hunter and Schmidt's (2004) random effects procedure. All analyses were carried out using the *"psychmeta*" package (version 2.6.2: Dahlke & Wiernik, 2019) for the R statistical environment (R Core Team, 2020). We first corrected for sampling error by calculating sample size-weighted correlations. Second, we corrected correlations for the lack of reliability using artifact distributions (Wiernik & Dahlke, 2020). When a study did not report the global score or reported multiple effect sizes for the same construct, we calculated a composite correlation score and reliability based on the Hunter and Schmidt (2004, p. 442) formula.

For each construct relationship, we provided the sample-size weighted correlation (r), the sample size-weighted and reliability correlation (r_c), the 95% confidence interval for r_c, the 80% credibility interval for r_c, and the variance attributable to statistical artifacts (%Var). The correlation refers to a significant effect size whether the confidence interval does not encompass zero. In parallel, Geyskens et al. (2009) argue that the presence of moderators is suggested when the credibility interval contains zero. Hunter and Schmidt (2004) also support that when the variance attributable to statistical artifacts is inferior to 75%, a moderator is likely to be present. In order to account for effect sizes' heterogeneity, we also provided the standard deviation with regard to the corrected reliability correlation (SD_{rc}), as well as for the uncorrected correlations (SD_r).

For the moderator effects, we performed meta-regression analyses in the "*psychmeta"* package that is performed in parallel with the "*metafor"* package. We performed meta-regression both for continuous (i.e., mean age and percentage of female participants) and categorical (i.e., sample type and publication type) moderators.

Although we examined whether publication type may affect the correlation effect sizes in our meta-analysis, we also performed additional sensitivity analyses. To this end, we examined the possibility of publication bias by performing *cumulative* meta-analyses (Mcdaniel, 2009). Cumulative meta-analysis offers the possibility, by using iterative meta-analyses, to examine whether the effect sizes' precision may bias the conclusions of the present results (Borenstein et al., 2010). In this kind of sensitivity analysis, studies are added one by one, organized by standard error from low to high (lower is the standard error, higher is the sample size). In other words, studies with a higher sample size—considered as the most precise study—are introduced first, followed by the second study with the higher sample size, and so on. If studies with a smaller sample size may bias the conclusions, a so-called "drift" appears in the direction to positive or negative direction.

3. Results

Meta-analytic results for relationships between emotional intelligence and career-related outcomes are depicted in Table 20 and Figure 14. The included career-related outcomes that have provided at least three studies and correlation coefficient or computable statistical

information were career adaptability (K = 12), career commitment (K = 12), career decision-making difficulties (K = 9), career decision self-efficacy (K = 23), objective career success (i.e., salary, K = 7), subjective career success (i.e., career satisfaction, K = 12), self-perceived employability (K = 4), entrepreneurial self-efficacy (K = 6), entrepreneurial intentions (K = 18), job search self-efficacy (K = 5) and turnover intentions (K = 52).

3.1 Correlations

As depicted in Table 20, most of the career-related outcomes were significantly associated with emotional intelligence. Hence, emotional intelligence correlated (1) positively and strongly with career adaptability (r_c = .57), (2) positively and moderately with career commitment (r_c = .31), (3) negatively and moderately with career decision-making difficulties (r_c = –.46), (4) positively and strongly with career decision-making self-efficacy (r_c = .54), (5) positively but weakly with salary (r_c = .19), (6) positively and moderately with career satisfaction (r_c = .41), (7) positively and moderately with entrepreneurial self-efficacy (r_c = .38), (8) positively and moderately with entrepreneurial intentions (r_c = .36), and (9) negatively and moderately with turnover intentions (r_c = –.22). In contrast to our hypotheses, as the confidence interval included 0 for r_c with regard to self-perceived employability and job search self-efficacy, these two career-related outcomes were not considered as significant correlates of emotional intelligence. Furthermore, based on the variance attributable to sampling error and the credibility intervals, most correlations between emotional intelligence and career-related outcomes indicate that moderators are likely to be present.

Table 20. Summary of meta-analytic relationships between emotional intelligence and career-related outcomes

Correlate	***K***	***N***	***r***	***SD*$_r$**	***r*$_c$**	***SD*$_{rc}$**	**CI$_L$**	**CI$_U$**	**%Var**	**CV$_L$**	**CV$_U$**
Career adaptability	12	4,141	.50	.07	.57	.06	.52	.61	32.56	.48	.65
Career commitment	12	2,915	.26	.12	.31	.13	.22	.41	24.52	.14	.48
Career decision processes											
Career decision-making difficulties	9	3,003	–.42	.15	–.46	.16	–.59	–.33	9.04	–.69	–.24
Career decision-making self-efficacy	23	6,836	.47	.14	.54	.15	.47	.61	10.94	.35	.73
Career success											
Salary	7	1,631	.18	.10	.19	.08	.10	.29	44.25	.09	.31
Career satisfaction	20	5,625	.35	.13	.41	.14	.34	.48	15.90	.23	.60
Self-perceived employability	4	1,521	.03	.31	.04	.37	–.55	.63	2.78	–.56	.64
Entrepreneurship											
Entrepreneurial self-efficacy	6	2,607	.33	.12	.38	.13	.24	.53	12.91	.20	.57
Entrepreneurial intentions	18	6,463	.31	.22	.36	.24	.24	.49	4.83	.04	.69
Job search self-efficacy	5	4,678	.20	.28	.23	.33	–.18	.64	1.25	–.27	.73
Turnover intentions	52	17,703	–.19	.16	–.22	.17	–.27	–.17	10.99	–.44	.01

Note. K = number of studies contributing to meta-analysis; N = total sample size; r = mean observed correlation; SD_r = observed standard deviation of r; r_c = mean corrected correlation; SD_{rc} = observed standard deviation of corrected correlations (r_c); CI = confidence interval for r_c; %Var = variance attributable to sampling error; CV = 80 % credibility interval for r_c distribution.

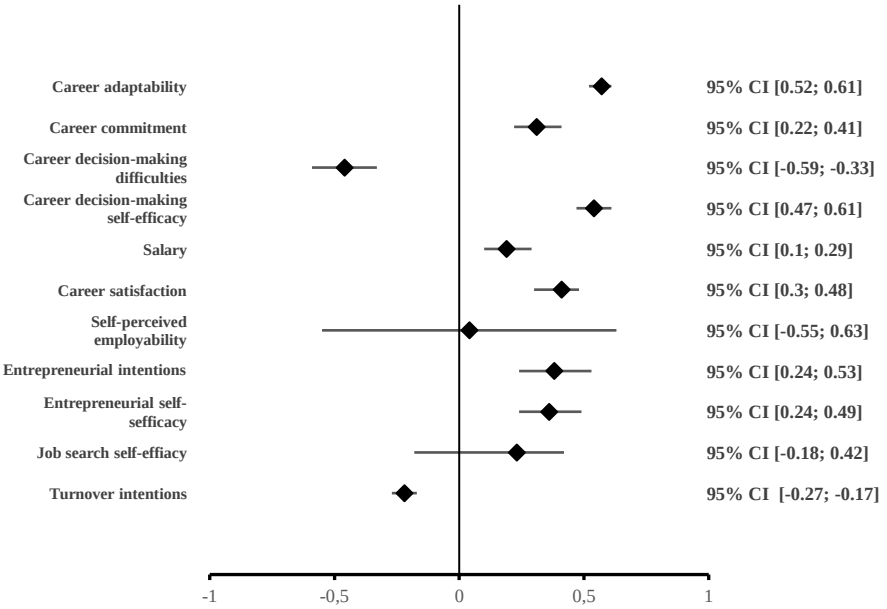


Figure 14. Forest plot showing the results of the meta-analysis

3.2 Meta-analytic regression models

The second main objective of the present meta-analysis was to investigate the presence of moderators that may affect the results of the current correlation effect sizes. We thus performed, when the information was available, a set of meta-regressions to examine the effect of four moderators: (1) the mean age, (3) the proportion of female participants, (3) the sample type (i.e., students vs. workers), and (4) the publication type (i.e., published vs. unpublished).

3.2.1 Main results

For the sake of space, we provided a summary of all meta-regression models in Appendix E5. Overall, age did not moderate the relationships between emotional intelligence and career-related outcomes, except for salary (B = .009, SE = .004, p < .05). Indeed, it is not surprising that higher mean age was associated with a higher effect size. For gender composition, the percentage of female participants moderated the relationships between emotional intelligence and career decision-making difficulties (B = .290, SE = .145, p < .05), self-perceived employability (B = –.013, SE = .004, p < .01), and entrepreneurial intentions (B = –.006, SE = .003 p = .018). A higher proportion of female participants for career decision-making difficulties was associated with a higher effect size. Regarding self-perceived employability and entrepreneurial intentions, we found the opposite results. For sample type, we only found a significant moderation for career decision-making difficulties (B = .290, SE = .145, p < .05), which indicated that a higher level of workers was associated

with a higher effect size. Finally, we did not find a significant effect of publication type on correlation effect sizes.

3.3 Additional sensitivity analyses using cumulative meta-analysis

The final objective of the present meta-analysis was to investigate the presence of publication bias using additional sensitivity analyses. To this end, we performed cumulative sensitivity analyses on all relationships between emotional intelligence and career-related outcomes. To avoid redundancy in the interpretation of our results, a description of the cumulative analysis can be found in Appendix E6.

3.3.1 Main results

Overall, most cumulative meta-analyses indicated no significant influence of the publication status. However, we examined the presence of substantial publication bias for two career-related outcomes: self-perceived employability and job search self-efficacy.

Regarding self-perceived employability, the cumulative meta-analysis included four studies. The correlation of the most precise study was r = –.290 [95% CI: –.438; –.260], whereas the last overall cumulative correlation effect size was r = .032 [95% CI: –.550; .626]. These results thus indicated an important publication bias. It is not surprising given that one study reported a negative correlation coefficient compared to the three other studies.

For job search self-efficacy, the cumulative meta-analysis included five studies. The correlation of the most precise study was r = .280 [95% CI: .276; .380], whereas the last overall cumulative correlation effect size was r = .199 [95% CI: –.175; .642]. Although the change in correlation coefficient was not considered problematic, we observed a negative change with regard to the confidence interval, which suggests a significant bias. As for self-perceived employability, one citation reported a negative correlation that contrasted with other citations.

4. Discussion

Over recent years, an increasing interest in the concept of emotional intelligence has emerged in the context of career development, which supports its beneficial effects on individuals' careers (Parmentier et al., 2019). Despite more than a hundred studies dedicated to its investigation, no integrative effort has simultaneously investigated the relationships between emotional intelligence and career-related outcomes. The main objectives of the current manuscript were thus to offer an overall quantitative picture of what we know about emotional intelligence in career development but also to investigate the presence of potential moderators that may influence the different relationships. In order to ascertain the quality of the research findings, we also realized additional cumulative sensitivity analyses to detect potential publication bias.

4.1 Summary and interpretation of findings

According to the career construction model that posits emotional intelligence as a psychological trait of readiness to cope with career-related difficulties (i.e., adaptivity or adaptive readiness, Hirschi et al., 2015), we first showed that emotional intelligence was strongly and positively associated with career adaptability (i.e., adaptability resources), that is, a psychosocial resource that helps individuals to face career- and work-related tasks, transitions, or traumas. These results thus aligned with Coetzee and Harry's (2014) assumptions, arguing that high emotional intelligence provides the abilities, self-regulatory resources, and readiness to activate specific behavioral and cognitive domains to cope with career-related tasks such as exploring, planning, and taking responsibility for one's career goals.

Furthermore, emotional intelligence was also moderately associated with career decision processes. More specifically, emotional intelligence was negatively related to career decision difficulties and positively to career decision self-efficacy. These results are also in line with the career construction model of Savickas (2005), which argues that adaptivity predicts adapting responses (i.e., career decision processes). More specifically, individuals with high emotional intelligence tend to better use and integrate their emotional intelligence as a lever to realize career decisions that fit with their career aspirations.

Regarding the adaptation results, which refer to the outcomes of adapting behaviors in the career construction model (Hirschi et al., 2015), meta-analytic results first suggested that emotional intelligence was positively but weakly associated with salary. According to different authors, this relationship may be explained by the fact that individuals with high emotional intelligence are able to develop strong interpersonal relationships and networking skills, leading to finding a job with a higher status level. However, the relationship between emotional intelligence was higher for career satisfaction. Being aware of one's emotions may offer the possibility of understanding one's career aspirations and needs. As a result, individuals with high emotional intelligence realized better career decision-making with regard to their career goals, leading to better general career satisfaction. Overall, individuals with high emotional intelligence are not inevitably oriented to find a job with high pay but a job that aligns with their career objectives.

Moreover, results showed moderate and positive relationships between emotional intelligence, entrepreneurial self-efficacy, and entrepreneurial intentions. These results extended the prior meta-analysis of Miao et al. (2018), which demonstrated a positive correlation between emotional intelligence and entrepreneurial intentions. The results are interesting as entrepreneurial self-efficacy and intentions were quite similar. Individuals with high emotional intelligence thus seem to be more confident and engaged at the prospect of creating a new venture. These results aligned with the idea that high emotional intelligence is associated with better emotion regulation strategies, such as perceiving new opportunities as a challenge rather than a threat, and the confidence to manage interpersonal relations during negotiation processes, which are particularly important when creating one's own business (Peña-Sarrionandia et al., 2015).

Finally, results also indicated that emotional intelligence was negatively but weakly associated with turnover intentions. These results extended a prior meta-analysis of Miao et al. (2017) that supported the same conclusions. However, our coefficient correlation (i.e., r_c = –.22) was lower than Miao and colleagues (r_c = –.33). Individuals with higher emotional intelligence are probably less likely to quit their organization for different reasons. First, it is possible that they choose a job that fits their career and personal needs. Second, as they identify and regulate better one's and others' emotions, they have fewer difficulties in the work context. Although the relationship was negative, we however noticed that the coefficient was weak. Thus, we think that it is also possible that individuals with higher emotional intelligence are more able to decide to quit the organization when the work context does not meet their personal and professional aspirations. This assumption may explain why some studies found no relationship between emotional intelligence and turnover intentions.

Beyond these relationships and unexpectedly, we found non-significant relationships between emotional intelligence, self-perceived employability, and job search self-efficacy. We hypothesized that effect size correlations were biased due to two main reasons. First, the total sample size for each of the two outcomes was very low (K = 4). As a consequence, the total effect size was highly influenced. Secondly, and in line with the first reason, we observed—in the same study (i.e., Kasler et al., 2017)—negative correlations between emotional intelligence and self-perceived employability (r = –.29), as well as for job search self-efficacy (r = –.44). Unsurprisingly, cumulative meta-analyses showed potential publication bias and statistical artifacts. Nevertheless, although confidence intervals did include zero, the overall correlations were in the direction of our hypotheses. Future research is needed to better understand the underlying processes that may explain these results.

Overall, age did not moderate the correlation effect sizes, except for salary. Indeed, participants with a higher mean age presented a higher effect size. Regarding gender composition, the percentage of female participants moderated the relationships between emotional intelligence, career decision-making difficulties, self-perceived employability, and entrepreneurial intentions. A higher proportion of female participants for career decision-making difficulties was associated with a higher effect size. Regarding self-perceived employability and entrepreneurial intentions, we found the opposite results. We only found a significant moderation for career decision-making difficulties for sample type, which indicated that a higher level of workers was associated with a higher effect size. Finally, we did not find a significant effect of publication type on correlation effect sizes.

To sum up, the present meta-analysis offers several important theoretical contributions to the flourishing literature on emotional intelligence in career development. To the best of our knowledge, our research is the first to provide an overall picture of the existing relationships between emotional intelligence and career-related outcomes. By doing so, we extend prior meta-analyses that independently examined the relationships between emotional intelligence and turnover intentions (Miao et al., 2017), entrepreneurial intentions (Miao et al., 2018), and career adaptability (Vashist et al., 2020). We also leverage the most significant number of studies for each of the relationships to date (K = 141; total N = 48,551). Second, based on the career construction model, we enriched the theoretical development of emotional intelligence

and posited it as a central meta-competency and adaptive readiness with regard to other career outcomes (Rudolph et al., 2017). Indeed, Rudolph et al. (2017) could not include emotional intelligence in their recent career adaptability meta-analytic investigation due to the small number of studies. We also provided theoretical assumptions on how emotional intelligence predicts each of the career-related outcomes integrated into the meta-analysis. Finally, the present work opens new avenues for future research that we develop in the next section.

4.2 An agenda for future research on emotional intelligence in career development

4.2.1 Recommendation #1: Developing longitudinal and interventional studies

Our first recommendation relates to the necessity of developing more longitudinal and interventional studies. Indeed, the present study was based on cross-sectional and correlational analysis. This approach does not offer the possibility of determining the developmental effects and directionality with regard to emotional intelligence and career-related outcomes. In the same vein as the recent mapping review performed by Akkermans et al. (2021) about careers science, most studies investigating emotional intelligence in the career literature relied upon a cross-sectional research design. It is unfortunate as a handful of longitudinal and interventional studies showed the directional effects of emotional intelligence on career adaptability (Parmentier et al., 2019), career decision processes (Di Fabio & Kenny, 2011), and employability (Nelis et al., 2011). The present work is thus a call for the development of longitudinal and experimental research designs to determine causality effects between emotional intelligence and career-related outcomes. Furthermore, as empirical evidence shows the malleability of emotional intelligence and the beneficial effects of emotional intelligence training with regard to a variety of individuals' life outcomes (Hodzic et al., 2018, Kotsou et al., 2018), we argue that the development of interventions will also offer practical implications for beneficiaries and guidance counselors.

4.2.2 Recommendation #2: Using more meaningful samples

Our second recommendation stresses the necessity to extend investigations to meaningful samples. Hence, most studies on career decision-making self-efficacy mainly focused on student samples. Being confident at the prospect of realizing career decisions is not restricted to the student population. In the same vein, examining career satisfaction among graduate students tends to be unrealistic. In order to generalize empirical findings, there is a necessity to recruit participants from various sources of context with larger sample sizes.

4.2.3 Recommendation #3: Extending (objective) career-related outcomes

Due to the insufficient number of studies, we could not investigate how emotional intelligence was related to career indecisiveness, career maturity, or job search outcomes (e.g., number of job offers). Therefore, additional evidence and career outcomes are needed to determine and extend the overall role of emotional intelligence in career development.

4.2.4 Recommendation #4: Developing an integrative investigation of emotional intelligence

Most studies in the present empirical effort relied on a single source of emotional intelligence measures, that is, self-report measures. Indeed, due to the small number of studies that used performance-based measures, we were not able to consider the ability approach to emotional intelligence. Accordingly, we think that there is a necessity to enrich our comprehension of the role of emotional intelligence by developing an integrative approach. To this end, recent authors proposed the PAT framework, positing emotional intelligence competence as the interaction of ability-emotional intelligence, emotion information processing, and trait-emotional intelligence (Vesely-Maillefer et al., 2018). By using various forms of measures, this framework offers the possibility to examine the factual information that individuals possess about emotions (ability-emotional intelligence), how they process emotion information (emotion information processing), and the individuals' tendency to behave in emotional situations.

4.2.5 Recommendation #5: Understanding the specific effects of emotional intelligence dimensions

Due to the various forms of measures that have been used to evaluate emotional intelligence, we decided to focus on the general factor of emotional intelligence. We are aware that is an important limitation of the current investigation as recent studies showed the predictive effects of emotional intelligence dimensions over and above the general factor of emotional intelligence (Pirsoul et al., 2021). We thus encouraged future research to disentangle better the underlying mechanisms explaining the relationships between emotional intelligence and career-related outcomes by examining the specific effects of emotional intelligence dimensions. Hence, there is a need, for instance, to better understand the differential effects between the intrapersonal and the interpersonal components of emotional intelligence.

4.2.6 Recommendation #6: Unravelling the incremental validity of emotional intelligence

Through our coding, we observed that very few studies examined the incremental validity and predictive effect of emotional intelligence over and above cognitive intelligence and personality traits (e.g., Di Fabio & Saklofske, 2014; Udayar et al., 2018). Indeed, given the overlap between emotional intelligence, the Big Five personality traits (Saklofske, Austin, & Minski, 2003), and cognitive intelligence (Udayar et al., 2018), future research should include such control variables to investigate the added value of emotional intelligence.

4.2.7 Recommendation #7: Understanding the dynamic interplay between emotional intelligence and career-related events

Our seventh recommendation highlights the importance of developing a more *processual* and *dynamic* investigation between emotional intelligence, career-related outcomes and/or

career events. Indeed, most studies set a "static" investigation through the use of cross-sectional research designs with a lack of investigation during specific career tasks and transitions (i.e., 5.67% of all studies). It is unfortunate as Pekaar et al. (2018) showed that emotional intelligence tends to present a day-to-day fluctuation. In the same vein, Zacher (2016) also fostered that career adaptability may also fluctuate on a daily basis. According to Rossier (2015), self-regulatory resources such as emotional intelligence or career adaptability are a form of psychological capital that can be activated during specific challenging periods or events. Hence, there is a need to better understand how emotional intelligence is activated during particular career events and how its fluctuation and enactment may predict career-related adjustments. To this end, experiencing sampling study designs are a good candidate to address this issue (Gabriel et al., 2019). The present work is thus a call to examine how emotional intelligence may activate or predict other career-related outcomes during specific career contexts (e.g., school-to-work transition, unemployment period).

4.2.8 Recommendation #8: Extending our comprehension of interpersonal and contextual variables

Throughout our analyses, we observed that most variables that have been related to emotional intelligence were mainly intrapersonal. In other words, very few studies examined how emotional intelligence may interact with the environment and how it may facilitate individuals' career development through their environment. It is unfortunate as a series of research have demonstrated that emotionally intelligent individuals benefit from a more qualitative and larger social network (Lopes et al., 2003). In addition, some scholars have highlighted that individuals with a high level of emotional intelligence communicate their vocational interests more easily during career counseling sessions (Emmerling & Cherniss, 2003). Finally, recent studies have demonstrated the impact of labor market demand perception as a predictor of job search regulation (van Hooft et al., 2021) There is thus a necessity to develop and extend a better comprehension of how emotional intelligence may predict a better adaptation and preparation with regard to individuals' vocational development through the environment and social network.

4.2.9 Recommendation #9: Better understanding the role of emotional intelligence within guidance counseling activities

A final recommendation beyond the scope of the present work is the necessity to extend the investigation of emotional intelligence over clients and individuals facing career-related challenges. The importance of self-disclosure and, in the end, social sharing of emotion is inherent to counseling activities (Olry-Louis, 2018; Vignoli et al., 2019). Guidance and career counselors are inevitably confronted with the necessity to identify and manage clients' emotions. Accordingly, a handful of research showed that emotional intelligence plays a significant role in perceived counseling self-efficacy for guidance counselors (Easton et al., 2008). However, there is clearly a lack of empirical efforts that investigated how emotional intelligence may help practitioners to cope with one's emotions and clients' emotional

difficulties. Thus, there is a need to better understand how guidance counselors mobilize emotional intelligence and how it affects the quality of counseling sessions.

5. Conclusion

Emotional intelligence tends to receive a tremendous amount of interest in the career and vocational literature. This meta-analysis aimed to propose a meaningful integration between emotional intelligence and career-related outcomes. The cumulative body of research fosters the necessity to develop and refine how we investigate emotional intelligence in career development. The current meta-analysis serves as a first integrative and overall picture of what we know about emotional intelligence in career development, as well as a call for extending and questioning how we know what we know.

Part III

General discussion and conclusion

General discussion

The important thing is to never stop questioning.

Albert Einstein

Career transitions may give rise to a great amount of cognitive, behavioral, and emotional engagements. It disrupts individuals' life routines and conveys significant changes. It is also assumed that individuals experience various sources of complex emotions during career-related events that may lead to turmoil periods. Better understanding how individuals deal with such constraints in order to build sustainable careers has thus become crucial. Over the last decades, the concept of emotional intelligence—defined as the ability to identify, understand, express, and regulate one's emotions—has received a great amount of interest from the scientific community but also from the general public. Indeed, the concept has recently been recognized as a crucial meta-competency that helps individuals to cope with the uncertainty and challenges of their career development (Potgieter, 2014). While an increasing number of studies have shown positive relationships between emotional intelligence and career-related and vocational outcomes, we think that a large number of these studies present a series of important limitations that hamper the quality of research findings and threaten our ability to generalize the empirical results.

The current manuscript aimed to follow three main objectives. First, we aimed to ***question*** how we know what we know about emotional intelligence in career development. To this end, our literature review delineated nine main limitations in **Chapter 2**: (1) the lack of linkages between theory and hypotheses, (2) the overuse of cross-sectional research designs, (3) the limitations in statistical models, (4) the lack of control variables, (5) the overreliance of variable-centered approaches, (6) a paucity of justification and inadequacy with regard to measurement models, (7) the common method bias, (8) the limitations on samples and transition contexts, (9) the limitations on integration. The second objective was to ***extend*** our comprehension of emotional intelligence in the realm of career. More specifically, we proposed to investigate unexplored career-related outcomes such as job search clarity. We also proposed rarely used research methodologies such as latent profile analysis, experimental design, and meta-analytic investigation. Finally, the third objective was to ***integrate*** and enrich the linkages of emotional intelligence in the career domain.

Addressing these limitations refines the literature in several ways. First, studies presented in this manuscript proposed longitudinal and experimental investigations of emotional intelligence, offering the possibility of examining the directionality, magnitude, and causality between emotional intelligence and career-related outcomes. As a result, we triangulated various forms of research designs. Second, the empirical chapters developed advanced and innovative applications of measurement and statistical models allowing us to disentangle the contribution of the general dimension and specific dimensions of emotional intelligence with

regard to career-related outcomes. This empirical effort proposed a parallel to the prior evidence of cognitive intelligence debates. Third, investigating how emotional intelligence dimensions co-occurred simultaneously helped to elucidate the emergence of different profiles and how these profiles predicted career-related outcomes. It thus offered a more nuanced and complex picture of the role of emotional intelligence in career development. Finally, we closed the empirical chapters by proposing a systematic review and meta-analysis. This integrative work was essential to develop an overarching picture of what we currently know about the role of emotional intelligence with regard to career-related outcomes. This integrative effort also highlighted the limitations of present findings and proposed an agenda for future research.

In this final section, **Chapter 9** first recaps the main findings of the present dissertation. Then, in **Chapter 10**, we propose highlighting the theoretical contributions raised from the five empirical chapters. Next, **Chapter 11** presents the principal limitations of the current thesis and offers a series of recommendations for future research, whereas **Chapter 12** stresses a series of practical implications. Finally, we close the current manuscript with a general conclusion.

Chapter 9

Main findings

Chapter 9

Main findings

The present chapter summarizes the main findings arising from our five empirical chapters related to our three main objectives: *questioning*, *extending*, and *integrating* the role of emotional intelligence in career development. For a reminder, we conducted four empirical studies on two samples: university students in the context of the school-to-work transition and adult learners in the context of an adult education programme. We also conducted a systematic review and meta-analysis that highlighted the magnitude of effect sizes between emotional intelligence and career-related outcomes. Indeed, we highlight here the five main findings which emerged from our empirical chapters: (1) emotional intelligence as a (causal) predictor of career-related outcomes, (2) the structural evidence of emotional intelligence as unidimensional and multidimensional in relation to career outcomes, (3) the emergence of emotional intelligence profiles, and (4) an integrative perspective of emotional intelligence with regard to career-related outcomes.

1. Emotional intelligence as a (causal) predictor of career-related outcomes

As developed in **Chapter 2**, most of the studies investigating the role of emotional intelligence in career development relied upon cross-sectional research designs, limiting our ability to draw conclusions with regard to the directionality and causality between variables. To address these issues, **Chapter 4** and **Chapter 7** thus proposed a longitudinal cross-lagged panel model study and an experimental research design study, respectively. Two main career-related outcomes were investigated longitudinally: career adaptability and career decision-making self-efficacy. In **Chapter 4**, we demonstrated through a two-wave cross-lagged study that emotional intelligence was a predictor of career adaptability and not the opposite. This study was conducted among a sample of adult learners. Based on a coefficient of $\beta = .241$, these results corroborate previous cross-sectional findings that showed a positive relationship between emotional intelligence and career adaptability (Celik & Storme, 2018; Melinde Coetzee & Harry, 2014; Merino-Tejedor et al., 2018; Udayar et al., 2018). To the best of our knowledge, this is the first longitudinal study that aimed to investigate the directionality of the relationship between these two important meta-competencies. This study thus indicates that abilities to identify and manage one's emotions predict the readiness to mobilize career adapt-abilities, that is, the abilities to anticipate future transitions, explore the environment to be aware of career opportunities, take control of one's professional future, and have the confidence to cope with the upcoming career challenges. In **Chapter 7**, using an experimental design among university students in the context of the school-to-work transition, we tested the effect of a structured intervention of emotional intelligence on career

adaptability and career decision-making self-efficacy. In contrast to **Chapter 4**, we did not find a significant prediction from emotional intelligence to career adaptability and career decision-making self-efficacy. This apparent lack of effect may be attributed to different reasons. First, being aware of the difficulties involved in the transition to the labour market may decrease the perception of control and confidence due to the number of effort and resources that students have to develop to realize their transition successfully. For instance, in their experimental study, Koen et al. (2012) showed a decrease in career adaptability dimensions over time among the control group. In the same vein, they showed that the development of self-regulatory processes (i.e., career adaptability) may take some time. In the same study, career adaptability did not increase immediately after the intervention but six months later. A recent review by Kotsou et al. (2019) also showed that a series of research demonstrated that the development of outcomes following an emotional intelligence training may also take some time. For instance, some studies showed that the change in personality traits only occurred six months after the intervention (Clarke, 2010; Nelis et al., 2011). The results may also be related to the specificity of our sample. Indeed, most of the participants were female students enrolled in a faculty of psychology. They were also focused on writing their master's thesis and worried about their exam session. Finally, according to Rossier (2015), career adaptability is a complex construct that is activated in certain circumstances. As students were not specifically during the transition period, it is thus possible that they did not activate their career-adaptability resources during the completion of the questionnaire.

Based on these results, it is thus premature to draw inferential and causal conclusions about the relationships between emotional intelligence and career adaptability. As developed in **Chapter 2**, only experimental research designs offer the possibility to conclude a causal relationship (Antonakis et al., 2010), even if compelling evidence—comprising our results in **Chapter 4**—tends to support the idea that emotional intelligence is instead a predictor than a consequence of career adaptability. We will come back to these results in the Limitations section.

2. Structural evidence of emotional intelligence as unidimensional and multidimensional in relation to career outcomes

Several measures and techniques have been performed to evaluate the predictive effect of emotional intelligence on career-related outcomes. Indeed, some studies proposed emotional intelligence as a unidimensional factor (Di Fabio et al., 2013; Nelis et al., 2011), whereas other researchers considered emotional intelligence as a set of multiple dimensions (Di Fabio & Kenny, 2011; Santos et al., 2018). However, no study has examined whether emotional intelligence dimensions may predict career-related outcomes while controlling for a general factor. This kind of model has been developed as the so-called bifactor model and has been used regarding cognitive intelligence and psychopathology (Reise, 2012). In **Chapter 5**, we thus proposed comparing multiple measurement models from simple confirmatory factor analysis to more complex bifactor-ESEM measurement models to address these different forms of emotional intelligence conceptualizations among a sample

of adult learners. To this end, we relied on the Profile of Emotional Competence questionnaire (Brasseur et al., 2013). Results showed that the ESEM and bifactor-ESEM models provided acceptable and best fit indices compared to other measurement models. Based on Rodriguez and colleagues' recommendations (2016), we also examined additional psychometric indices (e.g., explained common variance and percentage of uncontaminated correlations) of the bifactor-ESEM measurement model to examine whether emotional intelligence is a general factor, a set of dimensions, or both. Indeed, based the decision only on the fit may lead to precocious conclusions. The different results demonstrated that emotional intelligence tends to be a multidimensional construct composed simultaneously of a strong general factor. Hence, even if the general factor explained majority of variance among all items, the different dimensions also explained a part of variance over and above the general factor. We also demonstrated that the utilization dimension did not load coherently on the general factor of emotional intelligence. To the best of our knowledge, this study was the first to examine emotional intelligence via the bifactor-ESEM framework. These results corroborate prior research demonstrating inconsistent results with regard to the emotion utilization dimension (Fan et al., 2013; Nozaki et al., 2019; Palmer et al., 2005). We will extend our interpretation of the results in the next chapter.

Based on the bifactor-ESEM solution, we also decided to simultaneously examine how the dimensions predicted four important career-related outcomes for adult learners while controlling for the general emotional intelligence factor. We first demonstrated that the general factor negatively predicted emotional exhaustion, work-family conflict, and family-work conflict and positively predicted career satisfaction. We also demonstrated that emotion comprehension negatively predicted emotional exhaustion, work-family conflict, and family-work conflict. In parallel, emotion regulation negatively predicted emotional exhaustion and work-family conflict. In contrast to prior findings, the use of emotion positively predicted family-work conflict. However, emotion identification and emotion expression did not predict career-related outcomes. These results suggest a significant predictive and incremental validity of emotional intelligence dimensions while considering a general factor of emotional intelligence. We will discuss the incoherent pattern of results with regard to utilization dimension in the next chapter.

3. The emergence of emotional intelligence profiles

The objective of the doctoral thesis was also to examine emotional intelligence using a person-centered approach in order to examine the emergence of profiles. This objective was based on the assumption that most studies relied upon variable-centered approaches, omitting the possibility that emotional intelligence dimensions may interact together in different ways. This is unfortunate given that previous researchers have already demonstrated the variability across individuals (Fiori, 2009; Keefer et al., 2011). To this end, **Chapter 6** aimed to examine (1) the emergence of emotional intelligence profiles, (2) how these profiles differed between female and male students in the context of the school-to-work transition, and (3) how these profiles predicted intrapersonal and interpersonal job search self-efficacy and job search clarity. To this end, we relied upon the Rotterdam Emotional Intelligence Scale (REIS)

developed by Pekaar et al. (2018). This scale was chosen because it differentiates the intrapersonal and interpersonal emotion awareness and emotion regulation, presents good psychometric properties, but also because we observed some inconsistent results with regard to the Profile of Emotional Competence scale in **Chapter 5** (Brasseur et al., 2013).

We first demonstrated the emergence of four different profiles among male and female students. For the female students, the first profile—labeled *Low interpersonal*—showed low levels on the intrapersonal dimensions and very low levels on the interpersonal dimensions. The second profile—labeled *Below average*—displayed low levels on the four dimensions and was just below average. The third profile—labeled *Above average*—displayed moderate levels of emotional intelligence dimensions. Levels were higher for the interpersonal dimensions. The fourth profile—labeled *High interpersonal*— presented high levels on the emotional intelligence dimensions, with particularly high levels on the interpersonal dimensions.

For the male students, the first profile— labeled *Intrapersonal regulator*—presented low levels of self-focused emotion awareness, other-focused emotion awareness, and other-focused emotion regulation but a moderate and positive level of self-focused emotion regulation. The second profile—labeled *Intrapersonal*—displayed high levels on the intrapersonal dimensions, and the levels of interpersonal dimensions were below average. The third profile—labeled *Above average*—presented above-average levels of emotional intelligence dimensions. Finally, the fourth profile—labeled *High*—presented high levels on the four dimensions.

Although female students tend to differ in the interpersonal dimensions, we also emphasized some differences in the intrapersonal dimensions. In parallel, the profiles of male students were differentiated on the intrapersonal and interpersonal dimensions.

Furthermore, we demonstrated that profiles were predictors of two important career-related outcomes in the context of the school-to-work transition. First, profiles with higher levels of emotional intelligence displayed higher intrapersonal and interpersonal job search self-efficacy levels. In other words, students who are more aware and regulate better one's and others' emotions present higher levels in their beliefs to successfully realize a good resumé or present themselves in front of recruiters. These results align with Nieto-Flores et al.'s (2019) results that showed the predictive effect of emotional intelligence on active job search through the mediating effect of job search self-efficacy. No significant differences between female students' profiles were found for job search clarity. That being said, male students' profiles with higher emotional intelligence levels predicted higher job search clarity levels. These results align with prior research that showed the predictive effect of emotional intelligence on job search success through the mediating effect of career adaptability (Mittal, 2020). These results thus suggest that intrapersonal dimensions rather than interpersonal dimensions predict job search clarity.

Overall, these findings are the first empirical evidence that investigated (1) the emergence of emotional intelligence profiles in the career literature and (2) how emotional intelligence profiles predicted job search self-efficacy and job search clarity.

4. An integrative perspective of emotional intelligence with regard to career-related outcomes

A systematic review and meta-analysis were conducted to determine how the career-related outcomes were related to emotional intelligence and the magnitude of these relations. These results were presented and discussed in **Chapter 8**.

Overall, more than five thousand citations were found in the literature from our systematic review. More specifically, we retained a total of 141 studies encompassing an N = 48,862. In these studies, we identified 11 eligible career-related outcomes that fitted our inclusion criteria: (1) career adaptability (K = 12), (2) career commitment (K = 12), (3) career decision-making difficulties (K = 9), (4) career decision-making self-efficacy (K = 23), (5) salary (K = 7), (6) career satisfaction (K = 20), (7) self-perceived employability (K = 4), (8) entrepreneurial self-efficacy (K = 6), (9) entrepreneurial intentions (K = 18), (10) job search self-efficacy (K = 4), (11) turnover intentions (K = 52).

Results indicated that emotional intelligence presented a large and significant relationship with career adaptability (r_c = .57) and career decision self-efficacy (r_c = .54). Likewise, emotional intelligence presented a moderate and significant relationship with career commitment (r_c = .31), career decision-making difficulties (r_c = –.46), career satisfaction (r_c = .41), entrepreneurial self-efficacy (r_c = .38), entrepreneurial intentions (r_c = .36), and turnover intentions (r_c = –.22). However, we found no significant relationship between emotional intelligence and self-perceived employability (r_c = .04). Although the correlation coefficient was positive with job search self-efficacy (r_c = .23), the relationship was not significant. That being said, sensitivity analyses showed publication bias and statistical artifacts for these two last career-related outcomes. Indeed, a study reported negative correlations between emotional intelligence, self-perceived employability, and job search self-efficacy (Kasler et al., 2017). Overall, moderation analyses showed that gender proportion, mean age, sample type, and publication bias did not substantially moderate the correlation effect sizes.

These results offer an overarching picture of what we know about emotional intelligence in career development and highlight the beneficial influence of emotional intelligence with regard to individuals' career-related challenges. It thus brings significant theoretical and methodological contributions to the field. Such findings open new avenues for future research to extend the underlying processes involved in these relationships.

5. Concluding remarks

Through the empirical chapters, cross-lagged panel analysis first showed that emotional intelligence was a predictor of career adaptability rather than an outcome. On a total of 11 studies, the meta-analytic investigation also reported a high correlation effect size between emotional intelligence and career adaptability. However, the interventional study that aimed to enhance emotional intelligence level did not predict the development of career

adaptability. We drew the same conclusion with regard to career decision-making self-efficacy, except that we did not conduct a cross-lagged panel analysis.

The second main findings relate to the structure of emotional intelligence. Using a bifactor-ESEM framework, we showed that emotional intelligence tends to be a multidimensional concept with a strong general factor. We also showed that emotional intelligence dimensions (i.e., comprehension and regulation) predicted emotional exhaustion and work-family balance over and above the general factor.

Third, four emotional intelligence profiles that presented distinct levels and shapes of emotional intelligence dimensions emerged from latent profile analysis. These profiles differ in terms of gender. Furthermore, these profiles predicted intrapersonal and interpersonal job search self-efficacy for male and female students. However, job search clarity was only predicted by male students' profiles.

Finally, the meta-analytic investigation provided an overall picture of what we know about emotional intelligence in career development by demonstrating positive and significant relationships between emotional intelligence and career adaptability, career decision-making self-efficacy, salary, career satisfaction, entrepreneurial self-efficacy, and entrepreneurial intentions. Furthermore, emotional intelligence was negatively and significantly associated with career decision-making difficulties and turnover intentions. Due probably to publication bias and the small number of studies, we did not find significant relationships between emotional intelligence, self-perceived employability, and job search-self efficacy.

Chapter 10

Theoretical contributions

Chapter 10

Theoretical contributions

By questioning, extending, and integrating what we know about emotional intelligence in career development, the present manuscript offers a series of critical theoretical contributions to the career and vocational fields. Accordingly, we outline here four core contributions: (1) emotional intelligence as a set of interacting variables that need to be re(de)fined, (2) an empirical contribution to the career construction model of adaptation, (3) the contribution of emotional intelligence among meaningful samples and career contexts, and (4) emotional intelligence as a malleable construct.

1. Emotional intelligence as a set of interacting variables that need to be re(de)fined

Throughout **Chapter 5** and **Chapter 6**, we investigated the structure of the emotional intelligence construct with regard to the general factor and the dimensions. Still, we also examined how these dimensions interacted together. Indeed, the concept of emotional intelligence has given birth to a plethora of different measures, while the majority of these measures consider emotional intelligence as a multidimensional construct (for a review, see Bru-Luna et al., 2021). The present manuscript mainly relied upon the tripartite model of Mikolajczak et al. (2009) through the Profile of Emotional Competence questionnaire (Brasseur et al., 2013). This questionnaire comprises five core dimensions (i.e., identification, comprehension, expression, regulation, utilization) that tap into intrapersonal and interpersonal domains.

In **Chapter 5**, we found an incoherent pattern of results with regard to the utilization dimension in the structure of emotional intelligence. Prior study has already highlighted these kinds of results with regard to the utilization dimension. Indeed, Palmer et al. (2005) showed that the utilization dimension explained nothing more than the general factor. A meta-analysis also argued that the utilization dimension overlapped with the identification dimension (Fan et al., 2010). Some authors also proposed that individuals would use their emotions through other dimensions (Nozaki et al., 2019). However, our findings showed that the utilization loadings in the bifactor-ESEM model did not load on other dimensions. We also found that some items of utilization dimension loaded onto the general factor of emotional intelligence. It is thus premature to draw the conclusion that emotion utilization would be a distinct dimension with regard to the concept of emotional intelligence. The present manuscript thus fosters the necessity to reevaluate and refine its relevance in the conceptualization of emotional intelligence. To sum up, future research is needed to shed light on the structure of emotional intelligence. Recent simulation studies recommend relying upon the augmented bifactor model, in which some items are developed to tap only on the

general factor and not on specific dimensions (Eid et al., 2017; Zhang et al., 2020). These models demonstrated an improvement in statistical performance and offered a better representation of the contribution of the general factor and specific dimensions. However, the majority of scales and conceptualizations of emotional intelligence have not been developed following these representations. It, however, offers interesting avenues for future research.

In parallel, the present manuscript provided for the first time empirical and psychometric evidence to demonstrate the multidimensional nature of the emotional intelligence construct, also composed of a strong general factor. This offers critical theoretical implications with regard to meta-analysis, theoretical models, and the importance of considering bifactor models in the investigation of emotional intelligence. Indeed, this structure provided the best fit compared to unidimensional or hierarchical measurement models. Recent studies investigating other measures of emotional intelligence (i.e., Geneva Emotional Competence Test, Schlegel & Mortillaro, 2019) also corroborate our findings (Simonet et al., 2021). This structure has also been corroborated by demonstrating the predictive effects of the general factor and the dimensions with regard to emotional exhaustion, work-family conflict, family-work conflict, and career satisfaction. We insist here on the necessity for researchers to justify the use of a general factor, dimensions, or both.

Likewise, we provided a more nuanced picture of emotional intelligence by investigating and shedding light on how emotional intelligence dimensions co-occurred together. Indeed, most prior research in the emotional intelligence literature has mainly handled variable-centered approaches. Prior studies using these approaches investigated the on-average relations between emotional intelligence and career-related outcomes. Using a person-centered approach, we demonstrated the emergence of distinct profiles that differed upon their levels (i.e., quantitative differences) and shapes (i.e., qualitative differences). Indeed, person-centered approach investigations of emotional intelligence have been limited in the literature and have never been used in the context of career development (Gerits et al., 2005; Gohm & Clore, 2002; Keefer et al., 2012; McIntyre, 2010; Toyama & Mauno, 2016). To ascertain the profiles' construct validity and their relevance with regard to career development, we also showed that female and male students displayed a different pattern of profiles. These findings also provided important theoretical considerations. Indeed, many societal stereotypes disseminate the idea that women would be more empathic and interpersonally oriented, whereas men would be considered more agentic. We demonstrated that these conceptions are not so simple and highlighted the necessity to nuance our vision of gender differences with regard to emotional intelligence. In addition, we also showed that profiles with higher levels of emotional intelligence predicted job search self-efficacy. However, we showed that only male student profiles predicted job search clarity, demonstrating the complex nature of emotional intelligence and the necessity of considering its dimensions.

Overall, these results bring several theoretical contributions for future research. First, we prevent authors from considering emotional intelligence as a single factor. Second, we claim the importance of considering the added value of dimensions with regard to the general factor

of emotional intelligence. Third, we foster the importance of differentiating the effects of the intrapersonal dimensions from the interpersonal dimensions of emotional intelligence. Fourth, examining how dimensions interact together offers the possibility to detect at-risk students with regard to their preparation for upcoming transitions and to develop tailor-made interventions.

Beyond these theoretical considerations, we also think that our findings offer the opportunity to reconsider the common ideas about emotional intelligence. In line with the variable-centered approaches, an important message is spread in the literature conducting to categorizing individuals as "high emotional intelligence is good; low emotional intelligence is not good" (Fineman, 2000, 2004). These cultural and scientific claims may lead "less emotionally intelligent" individuals to perceive that they have to correct themselves. Considering emotional intelligence—through the lens of a person-centered perspective—as a set of complex dimensions in perpetual interaction allows going beyond this universal prescription. This debate is aligned with the popular beliefs claiming that positive emotions are good and negative emotions need to be avoided. As Clore and colleagues (2001) developed, emotion has an informative function that alerts about what is important for individuals. We think that there is a necessity to reevaluate and refine our conception of emotional intelligence and deepen the positive effects but also the possible negative effects of emotional intelligence. Hence, some papers have developed the idea of a "dark side" of emotional intelligence, arguing that some patterns of emotional intelligence dimensions may lead to negative intrapersonal and interpersonal outcomes (Davis & Nichols, 2016). Indeed, there is also preliminary evidence that individuals with high levels of emotional understanding may encounter an amplifying response to emotional experience (Fiori & Ortony, 2021). To sum up, we think that emotional intelligence is not a recipe that promises a wonderful life.

Future research is needed to extend these results. Accordingly, extending person-centered approaches and intensive longitudinal designs are needed to address these issues. We will come back to these propositions in **Chapter 11**.

Overall, these findings bring some important theoretical considerations with regard to the conceptualization of emotional intelligence, particularly in the context of career development. The necessity to develop more parsimonious measures and models of emotional intelligence has become essential, as well as the necessity of reconsidering the complex nature of emotional intelligence by avoiding to categorizing individuals as high or low emotionally intelligent individuals.

2. An empirical contribution to the career construction model of adaptation

Overall, the results arising from the empirical chapters provided a significant contribution to the career construction model of adaptation (Savickas, 2005) by highlighting emotional intelligence as an important meta-competency in career development. For a reminder, this model posits that individuals differ in how they are willing (i.e., adaptive readiness) and able

(i.e., adaptability) to develop beliefs and mobilize behaviors (i.e., adapting responses) that allow them to cope with career-related issues and, in the end, lead to positive career-related outcomes (i.e., adaption results; Hirschi et al., 2015). An overview of the present findings is summarized in Figure 15. Following the career construction model, we considered emotional intelligence as an indicator of adaptive readiness. Hence, **Chapter 4** first contributed to the directionality from emotional intelligence to adaptability resources, that is, career adaptability. These findings suggest that high emotional intelligence offers the self-regulatory resources and readiness for mobilizing career adapt-abilities and, more specifically, the willingness to explore, anticipate and reach personal and career goals. **Chapter 5** highlighted the contribution of the general factor of emotional intelligence and its dimensions to adult learners' adaptation results: emotional exhaustion, work-family conflict, and career satisfaction. Indeed, a higher level of adaptive readiness in terms of emotional intelligence (i.e., adaptive readiness) predicted adaptive adjustment indicators to manage the multiple roles imposed on adult learners and influenced their level of career satisfaction. Using latent profile analysis, **Chapter 6** showed the predictive effects of emotional intelligence profiles as an adaptive readiness to three adapting responses: intrapersonal job search self-efficacy, interpersonal job search self-efficacy, and job search clarity. Emotional intelligence profiles were thus associated with important preparatory beliefs to deal with the upcoming students' school-to-work transition. The findings that arised from the different empirical chapters were corroborated by the last empirical chapters that aimed to provide a summary of all quantitative effect sizes between emotional intelligence and career-related outcomes. Hence, the meta-analysis presented in **Chapter 8** demonstrated core associations between emotional intelligence and adaptability resources, that is, career adaptability. Furthermore, we also showed that emotional intelligence was related to different adapting responses such as career decision-making self-efficacy, career decision-making difficulties, job search self-efficacy, and job search clarity. Finally, we showed that emotional intelligence was related to adaptation results: career commitment, career satisfaction, salary, entrepreneurial self-efficacy, entrepreneurial intentions, and turnover intentions. However, the interventional study in **Chapter 7** did not corroborate the aforementioned results, as discussed in **Chapter 9**.

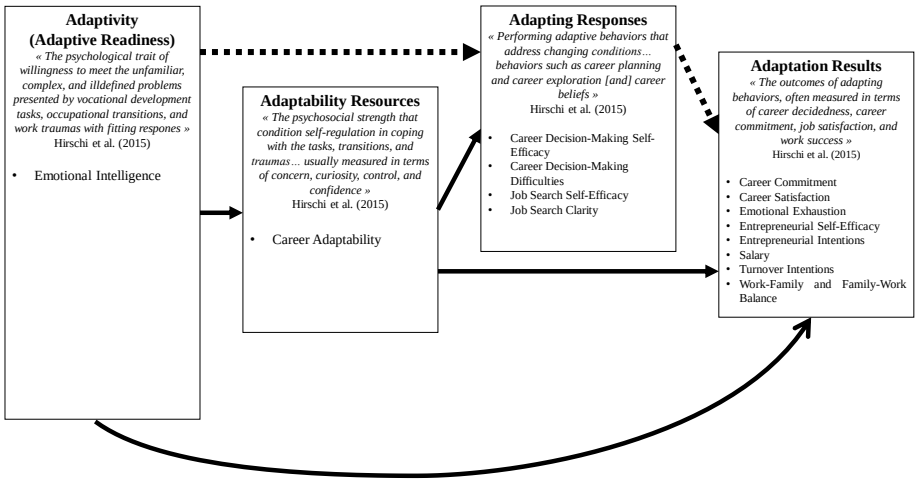


Figure 15. Findings from the present thesis adapted from Rudolph et al. (2017, p. 19) in the career construction model of adaptation

3. The contribution of emotional intelligence among meaningful samples and career contexts

Throughout the empirical chapters, this doctoral research brought a better understanding of the beneficial role of emotional intelligence among meaningful samples and transition contexts. We addressed this objective to respond to prior calls arguing that most rearch realized their studies without a clear contextualization of samples and career transitions (Akkermans et al., 2021; Rudolph et al., 2021). For a reminder, **Chapter 4** and **Chapter 5** investigated the role of emotional intelligence among different samples of adult learners, whereas **Chapter 6** and **Chapter 7** investigated the role of emotional intelligence in the context of the school-to-work transition.

This doctoral thesis thus delineates the importance of considering the emotional experience and emotional self-regulatory resources in adult education contexts. As we developed along with the empirical chapters, beginning and attending an adult education programme involved managing a series of challenges such as new learning tasks and environment. In addition, adult learners have to cope with the different roles of worker, student, and parent (Kasworm, 2008). Finally, starting an adult education programme is not only a career transition but also a life transition. Overall, we underlined how emotional intelligence and specific dimensions (i.e., emotion comprehension and emotion regulation) predict important indicators: career adaptability, emotional exhaustion, work-family balance, and career satisfaction.

In the same vein, this doctoral thesis also enriches the comprehension of emotional self-regulatory resources in the context of the school-to-work transition. Indeed, the transition to the world of work represents the first transition to the world of work that involves important

changes for future graduates (Akkermans et al., 2021). First, we showed that emotional intelligence might help students to prepare for their transition with regard to the job search processes in terms of job search self-efficacy and job search clarity. Although we were not able to demonstrate the beneficial effects of our emotional intelligence training to the development of career adaptability and career decision-making self-efficacy in the short run, we, however, demonstrated that it is possible to enhance students' emotional intelligence. This last result allows us to move to the last theoretical contribution, the malleability of emotional intelligence.

4. Does emotional intelligence is a malleable construct?

The current manuscript showed that rigorous evidence-based and structured emotional intelligence training did not lead to the development of emotional intelligence among last year's university students. These findings are in contrast with prior studies demonstrating the plasticity of emotional intelligence (for a systematic review and meta-analysis, see Hodzic et al., 2018; Kotsou et al., 2019). Moreover, we were unable to demonstrate the beneficial effect of the training with regard to career adaptability and career decision-making self-efficacy. Accordingly, we provided a series of potential explanations to shed light on these results, such as the specificity of our sample (i.e., the majority of female students enrolled in psychological sciences), our restricted account of temporality, and the intervention period. We also think that the influence of emotional intelligence on other outcomes may take some time. Indeed, translating emotional knowledge into daily life requires repetitive and longer trainings.

Although we did not provide empirical evidence with regard to the development of the career-related outcomes, we think that our results reinforce the importance of developing experimental research designs and interventions for at least three reasons. First, it is the most robust design to determine the causal relationships between variables and avoid endogeneity bias (Antonakis et al., 2010). Second, demonstrating the efficiency of interventions provides fruitful materials for guidance counselors in order to help individuals with regard to their vocational and career development. Third, participants stressed the importance of frequent and rich interactions with other participants of the training in qualitative feedback. Indeed, prior research has already demonstrated the beneficial effects of social sharing of emotions with peers and friends aroused by a vocational transition (Vignoli et al., 2020).

Chapter 11

Limitations and future research directions

Chapter 11

Limitations and future research directions

Although the present thesis brings innovative findings, we are aware that a series of limitations could hamper our ability to generalize research findings. Therefore, we delineate here eight limitations that offer future research directions. Hence, we discuss the limitations related to (1) the heterogeneity of research designs, (2) the lack of ability-emotional intelligence measures, (3) the lack of prospective studies during career transition, (4) the restricted investigation of career transitions, (5) the lack of control variables, (6) the difficulty to understand some results, (7) the lack of interpersonal emotional intelligence dimensions investigation, (8) the absence of qualitative studies, (9) Better understanding the environmental factors in career development, and (10) the absence of investigation about career and guidance counselors.

1. The heterogeneity of research designs

In the present manuscript, we relied upon a series of various methodological research designs. This decision arose from recent recommendations that argued the necessity to triangulate multiple methodologies to build confidence and credibility with regard to research findings (see **Chapter 2**, Kuorikoski & Marchionni, 2016). In doing so, **Chapter 4** proposed a cross-lagged approach, **Chapter 5** proposed advanced measurement models, **Chapter 6** relied upon person-centered approaches, **Chapter 7** proposed an experimental research design, and **Chapter 8** proposed a meta-analytic approach. Although this heterogeneity is a core strength of the present thesis, it is also a limitation. Hence, we did not deeply investigate a specific approach, contrary to a recent thesis that aimed to apply a person-centered approach to the emotional anticipation of future vocational transitions (Parmentier, 2021). Accordingly, **Chapter 4** only investigated the directionality between emotional intelligence and career adaptability. Examining cross-lagged effects from emotional intelligence to other career-related outcomes is crucial. In **Chapter 5**, we explored the measurement models of the Profile of Emotional Competence measure (Brasseur et al., 2013) and showed the incoherent pattern of results with regard to the utilization dimension. However, we did not extend these results to other self-report measures such as the Rotterdam Emotional Intelligence Scale (Pekaar et al., 2018). In addition, we examined the predictive effects using a bifactor-ESEM measurement model on emotional exhaustion, the work-family interface, and career satisfaction. Future research should investigate other career-related outcomes using such models. For **Chapter 6**, we relied upon person-centered approaches and discussed the emergence of four profiles for male and female students. However, we did not examine

the replication of these profiles across different samples, transitions, groups, contexts, or times. As stressed by Morin et al. (2016), it is essential to evaluate the construct validity of the profile solutions to ensure that the profiles are not derived from statistical artifacts and make sense theoretically and ascertain the generalizability of profiles. **Chapter 7** proposed the first experimental research examining the causal effect of emotional intelligence on career adaptability and decision-making self-efficacy. Again, we did not evaluate whether the effects of this intervention may change in other contexts or samples. Indeed, we highlighted a series of limitations related to the sample (i.e., female students enrolled in psychological sciences) and the time point survey (i.e., before the transition). Understanding the null effects of the intervention regarding career-related outcomes and ascertaining that these non-significant results are not related to the intervention is crucial at the theoretical and practical levels. In **Chapter 8**, we provided an overall picture of the relations between emotional intelligence and career-related outcomes. However, we were not able to examine (1) the specific effects of emotional intelligence dimensions due to the low number of studies and (2) the relationship between emotional intelligence and other career-related outcomes such as career indecisiveness or objective job search indicators (e.g., number of job offers, finding a job).

The present manuscript is thus a call to extend the current research designs and results. As already developed, triangulating research methodologies has become crucial to ascertain the credibility of research findings. We thus support here a series of future research directions. First, we think that developing more longitudinal and experimental research designs is essential. Given the theoretical assumptions from the career construction model that emotional intelligence is a predictor of career-related outcomes (Savickas, 2005), better understanding the directionality and magnitude of effect sizes between emotional intelligence and career-related outcomes will be a valuable contribution to the field. It is also essential to reevaluate the effect of emotional intelligence intervention to examine the causal relationships between variables and offer relevant materials for guidance counselors. Second, we think that future research should rely upon findings that emerged in **Chapter 5**. More specifically, ESEM measurement models and bifactor-ESEM seem better to evaluate the factorial structure and complexity of emotional intelligence. Better justifying the use of the general factor or the dimensions of emotional intelligence is also welcome for future research. Finally, we also call for the replication of emotional intelligence profiles. As developed in **Chapter 6**, very few studies relied upon person-centered approaches. As a consequence, we have to date no clear evidence with regard to how emotional intelligence dimensions co-occur together. We bring a first idea of how emotional intelligence profiles predict job search-related processes. The present manuscript is also a call to replicate emotional intelligence profiles across different transitions, samples, contexts, and times. We also claim the necessity to understand better how these profiles predict career-related outcomes and determine the at-risk profiles. Finally, we encourage researchers to reiterate meta-analytic efforts to disentangle better how emotional intelligence relates to career outcomes. To this end, living systematic review provides a new approach to continuously updating results from meta-analytic investigations (Elliott et al., 2017).

2. The lack of ability-emotional intelligence measures

In its initial conceptualization, emotional intelligence has been developed as a set of abilities to perceive, use, understand, and manage emotional information (Mayer & Salovey, 1990). This ability approach has given rise to the famous MSCEIT instrument that evaluates the individuals' performance with regard to their emotional intelligence (Mayer et al., 2002). However, this manuscript solely relied on self-report questionnaires of emotional intelligence rather than performance-based instruments. As a consequence, we mainly investigated what individuals typically do rather than what there are able to do. As reported in **Chapter 8** (i.e., meta-analysis), few studies have demonstrated the beneficial effects of ability-emotional intelligence on career-related outcomes. For example, Di Fabio and colleagues (2012, 2014) showed that ability-based and self-reported trait-emotional intelligence seem to present different relationships with decisional styles. Thus, we lack information regarding how individuals process the emotion information in specific situations. That being said, self-report measures have the merit to be used. First, it offers a fast administration to participants. Second, self-report measures offer the possibility in **Chapter 6** to differentiate the intrapersonal from the interpersonal dimensions of emotional intelligence.

The present manuscript first claims to understand better how ability-emotional intelligence predicts career-related outcomes. Second, as developed in **Chapter 1**, the present manuscript was primarily focused on the trait level of emotional intelligence. Although ability-emotional intelligence and trait-emotional intelligence have been considered as separate components (Cardoso-Seixas, 2016; Lumley et al., 2005), recent frameworks foster the necessity to understand how these components interact with each other. Accordingly, the PAT framework presented in **Chapter 1** (Maillefer et al., 2018) posits emotional intelligence competence as a set of three interacting components: ability-emotional intelligence (AEI), trait-emotional intelligence (TEI), and emotion information processing (EIP). We think that future research should benefit from this model in order to address the aforementioned issues. Moreover, even if **Chapter 5** demonstrated that the global level of emotional intelligence did not tend to be the overall effect of a method factor, combining different type of measures are recommended to reduce common method bias that may be attributed to self-report measures (B. Cooper et al., 2020). Finally, according to this model, scholars should unravel the automaticity component of ability-emotional intelligence from the conscious component. Indeed, there is a number of limitations in the MSCEIT, including its propensity to evaluate how individuals would respond in a hypothetical situation rather than a concrete situation (Fiori, 2009). Emotion information processing is one component that has been added to the model to address this issue.

3. The lack of long-term effects and enactment investigation of emotional intelligence

Career transitions refer to the transitions that are experienced during individuals' professional careers (Arthur et al., 1989). Following this definition, career development is thus a *dynamic* rather than a static phenomenon. Indeed, transitions encompass significant

life events that modify individuals' life roles, social relationships, and routines that may arise before the transition itself (Schlossberg et al., 2012). Accordingly, multiple theoretical models and empirical research have shown that career transitions begin before the transition event, such as Schlossberg's (1984) 4S's model or Nicholson's model of transition cycle support (Nicholson, 1990). In parallel, a recent thesis demonstrated the importance of emotional anticipation in preparing individuals for upcoming transitions (Parmentier, 2022).

In the present manuscript, we realized different studies among adult learners and university students at the end of their studies. Although the **Chapter 4** and **Chapter 5** did not investigate a specific time period among adult learners (e.g., at the prospect of their transition to an adult education programme), **Chapter 6** and **Chapter 7** studies were framed to investigate processes at play at the prospect of the transition to the world of work. A major limitation of this doctoral thesis was our inability to examine the long-term effects of emotional intelligence before, during, and after the transition. However, some empirical findings, such as Parker et al.'s study (2005), examined emotional intelligence's impact on the successful transition to higher education. They specifically examined whether emotional intelligence predicted academic achievement over one year.

According to Rossier (2015), self-regulatory resources (e.g., emotional intelligence and career adaptability) are crucial in helping individuals to fit with their environment, cope with external demands, and build a flourishing career path over their life. This author also argues that these self-regulatory resources are an accumulation of resources that will be activated during specific challenging periods or events. Hence, there is a need to better understand how emotional intelligence evolves before and during the transition. Longitudinal studies are thus good candidates to investigate the development of emotional intelligence in career development. Indeed, prior research has already shown the natural decreasing tendency of career adaptability over time among graduate students (Koen et al., 2012). They also showed that training career adaptability may take some time and does not immediately influence the development of these resources.

In the same vein, there is a necessity to investigate the enactment of emotional intelligence from a process-based perspective. In other words, we did not investigate how emotional intelligence influences daily life functioning with regard to vocational and career processes. Hence, this line of research has emerged from recent studies that aimed to examine the underlying behavioral mechanisms that may explain why emotional intelligence predicts positive outcomes (for a meta-analysis, see Pena-Sarrionandia et al., 2015). According to Pekaar et al. (2020), these approaches are relevant given their relations to the dynamic of daily life emotional functioning and the theory demonstrating the dynamic experience of emotions. This approach is also innovative because it offers the possibility to examine under which circumstances individuals mobilize or not their emotional intelligence. These claims are in line with the development of Rossier (2015) on the enactment of self-regulatory resources. Accordingly, Pekaar and colleagues have demonstrated in a series of research that emotional intelligence dimensions tend to fluctuate across events, depending on the nature of the events, and these fluctuations have a direct effect on how individuals feel and perform at work (Pekaar et al., 2017, 2019; Pekaar, Bakker, van der Linden, Born, et al., 2018). In

addition, recent research has demonstrated that emotional intelligence predicted daily career decision self-efficacy through the mediating effect of daily positive affect (Park et al., 2019).

The present manuscript is thus a call to develop longitudinal studies that will examine how emotional intelligence evolves before and after the transition and how emotional intelligence may be beneficial during career transitions. We also think that the development of (intensive) longitudinal research designs such as ecological momentary assessments or experiencing sampling studies will offer the possibility to examine the enactment of emotional intelligence during specific transitions, how emotional intelligence fluctuates, and how these fluctuations predict preparatory and *in situ* career-related behaviors (Gabriel et al., 2019). In doing so, future research will catch the dynamic nature of career and address prior limitations mentioned in careers science (Akkermans et al., 2021).

4. Our restricted investigation of career transitions

As developed in Point 3, we mainly investigated the preparation for the school-to-work transition and the challenges of an adult education programme. Although these transitions involved a large number of challenges and brought interesting evidence to this thesis, developing a lifespan perspective on the role of emotional intelligence with regard to career transitions has become essential. Prior research has already examined the role of emotional intelligence during other transitions. For example, as developed in the previous point, Parker et al. (2005) examined how emotional intelligence predicted academic achievement with regard to the transition to higher education. However, no variables related to career-related or vocational outcomes were examined. In parallel, Hodzic et al. (2015) investigated the role of emotional intelligence during unemployment. Future research should develop our understanding of the beneficial role of emotional intelligence in various transitions, such as the entrance to an organization (Bauer et al., 2007; Ellis et al., 2015; Fang et al., 2011). In addition, extending our understanding of emotional intelligence with regard to job search process is also essential. For example, studies should focus on the beneficial role of emotional intelligence after a job loss (Gowan, 2014; Wanberg et al., 2016) or during job search (Kanfer et al., 2001; Liu et al., 2014; van Hooft et al., 2021). Finally, future research should also focus on the role of emotional intelligence at the prospect of retirement (Beehr & Bennett, 2015; Topa et al., 2018).

5. The lack of control variables

Even if we controlled for sociodemographic variables such as age, gender, sociodemographic status (i.e., Chapter 4, Chapter 5, and Chapter 6), and how emotional intelligence dimensions predicted a series of career-related outcomes over and above the general factor of emotional intelligence (i.e., Chapter 5), we did not evaluate how emotional intelligence predicted career-related outcomes over and above personality traits and cognitive abilities. This is unfortunate, as we mentioned in Chapter 2, the importance of examining the incremental and predictive validity of emotional intelligence on vocational processes. As developed in Chapter 8 (i.e., the meta-analysis), future research should investigate the added

value of emotional intelligence in comparison to the Big Five personality traits (e.g., Austin, Saklofske, & Minski, 2003) and cognitive intelligence (e.g., Udayar et al., 2018).

6. Our difficulty to understand some results

Along with the doctoral thesis, we were confronted, to a certain measure, with unexpected results that were difficult to discuss. First, we observed that the utilization dimension of emotional intelligence displayed an incoherent pattern of results, such as negative relationships with the general factor of emotional intelligence. Using one's emotions also positively predicted family-work conflict. Despite increasing evidence arguing the necessity to redefine the utilization dimension regarding the emotional intelligence construct (Fan et al., 2013; Joseph & Newman, 2010; Nozaki et al., 2019; Palmer et al., 2005), we were not able to explain a clear rationale about these results. Hence, there is an urgent need to discuss and redefine the utilization dimension in the conceptualization of emotional intelligence. In parallel, we want to draw attention with regard to gender differences in the emotional intelligence profiles. Indeed, we mainly explained that female students were differentiated upon their interpersonal levels of emotional intelligence, whereas male students were mainly differentiated on their intrapersonal levels. Based on self-report questionnaires, some research has shown that it is difficult to determine whether we evaluate an objective level of emotional intelligence or whether these responses are biased by social role expectancies (Lopez-Zafra & Gartzia, 2014; Martínez-Marín et al., 2020). Indeed, future research may take advantage of examining the strength of stereotypes regarding the concept of emotional intelligence. Finally, we proposed a series of hypotheses to discuss the non-significant effects of emotional intelligence intervention on career adaptability and career decision-making self-efficacy. Notably, a series of important questions remain unclear with regard to the mutual development of emotional intelligence and career adaptability. To date, we do not know whether it is more relevant to develop emotional intelligence to enhance career adaptability or whether it is more relevant to develop these two meta-competencies independently, given their differential effects on career-related outcomes. The necessity to replicate and extend experimental research designs in different contexts is thus needed.

7. Better unraveling the differential effects of the interpersonal from the intrapersonal emotional intelligence dimensions

Another important limitation in the present manuscript that has also received little attention in the career literature is the importance of differentiating the intrapersonal dimensions (i.e., self-focused) from the interpersonal dimensions (i.e., other-focused) of emotional intelligence. Indeed, emotional intelligence literature has pointed out the differential predictive effects between these two dimensions (Nozaki et al., 2019; Pekaar et al., 2020). Although the global level of emotional intelligence may provide an interesting and valuable contribution to understanding how it influences career-related behaviors, it is also

essential to examine the specific processes at play between the intrapersonal and interpersonal dimensions of emotional intelligence regarding career-related outcomes.

To this end, only **Chapter 6** proposed a latent profile analysis to elucidate how intrapersonal and interpersonal dimensions interact together and how these profiles predicted intrapersonal and interpersonal job search processes (i.e., job search self-efficacy). We also showed that it is possible to have high levels of intrapersonal dimensions and low levels of interpersonal dimensions. To the best of our knowledge, it is one of the first studies that aimed to examine profiles of emotional intelligence and how the intrapersonal and interpersonal dimensions co-occur together. Based on variable-centered approaches, a handful of other research has already investigated the interpersonal dimensions of emotional intelligence in career development. For example, Di Fabio and Palazzeschi (2009) showed that the interpersonal dimension of emotional intelligence was inversely associated with the inconsistent information dimension. In the same vein, Di Fabio and Blustein (2010) showed that the interpersonal dimension of emotional intelligence predicted avoidance decisional conflict style. That being said, it is important to stress the lack of contextual and interpersonal variables related to the study of emotional intelligence in career development.

This doctoral thesis is thus a call for better disentangling the underlying mechanisms between the intrapersonal from the interpersonal dimensions of emotional intelligence in vocational and career processes. To this end, person-centered approaches and intensive longitudinal studies are good candidates to extend what we know about emotional intelligence in career development. First, as demonstrated in **Chapter 6**, person-centered approaches offer the possibility to examine the combinations of intrapersonal and interpersonal emotional intelligence dimensions. Regarding intensive longitudinal designs, this method offers the possibility of examining the enactment and fluctuation of emotional episodes and how emotional intelligence dimensions influence emotional functioning (Gabriel et al., 2019; Pekaar et al., 2019). Accordingly, some research has pointed out that intrapersonal emotional intelligence was more related to well-being outcomes, whereas interpersonal emotional intelligence was more related to job performance (Pekaar et al., 2017, 2018). We thus may speculate that intrapersonal and interpersonal emotional intelligence would predict differential outcomes with regard to career-related outcomes. Indeed, Emmerling and Cherniss (2003) support the idea that individuals that are more aware of their emotions are more able to communicate them during guidance counseling sessions. It has also been demonstrated that emotionally intelligent individuals receive more social support (Lopes et al., 2003).

Arising from psychopathology and personality fields, we also think that future career sciences research should benefit from network analysis. This approach aims to graphically model different components (e.g., items or indicators) as a dynamic system of interacting variables, that is, a network (for a review, see Borsboom et al., 2021). A specific kind of network labeled temporal network analysis offers the possibility of examining how variables (or indicators) interact and predict another variable longitudinally. In network analysis, the different components are represented as nodes. Central nodes refer to nodes that can activate and link other nodes. By using network analysis, it would thus be possible to examine how

emotional intelligence dimensions (i.e., intrapersonal and interpersonal domains) interact and how this network activates and predicts career-decision processes. Accordingly, prior research argued that network analysis also offers the possibility of disentangling the stable and trait parts of the personality (Cramer et al., 2012).

8. The absence of qualitative studies

The present manuscript was primarily based on quantitative studies that aimed to evaluate the magnitude of effect sizes between emotional intelligence and career-related outcomes. In doing so, we omitted to examine the subjective experience of individuals before or during their transitions. As developed in the recent constructivist approach, individuals elaborate on and revise their self and possibilities to rearrange story elements regarding their career development (Savickas, 2012). The lack of qualitative studies is not restricted to the concept of emotional intelligence and is also a significant issue in career sciences. Indeed, Stead et al. showed in 2012 that most research was mainly based on quantitative study designs or theoretical/conceptual articles (i.e., 91.4%). However, career literature would benefit from qualitative research. Qualitative studies offer the possibility of investigating specific situations with an in-depth description. In contrast, quantitative studies blur the possibility to catch the nuances and specificities of how individuals mobilize their emotional intelligence during or at the prospect of career transition. Thus, relying solely upon quantitative approaches does not provide sufficient information to understand the influence of emotional intelligence on individuals functioning deeply.

We thus support the necessity to develop research using qualitative or mixed-method approaches. In using it, we argue that researchers may offer a more nuanced picture and diversity on how individuals identify, understand, or regulate their emotions at the prospect of, or during important career events. In parallel, it may also provide fruitful material to develop and adapt emotional intelligence interventions for guidance counselors, clients, and individuals.

9. Better understanding the environmental factors in individuals' career development

Over recent years, the literature that emerged in careers science delineates in a substantive manner the increasing complexity and unpredictability of new career trajectories (Sullivan & Al Arriss, 2021). As a result, most authors have mainly focused on the individual level by highlighting the necessity to develop agency and control of one's career. Extending our understanding of emotional intelligence in career development is such a form of individual-centered approach. However, according to Akkermans et al. (2021), focusing only on the individual factors is quite problematic as career ecosystems recognize for individuals the probability of facing unexpected career events such as the COVID-19 pandemic also defined as so-called "career shocks." Career shocks refer to as “disruptive and extraordinary events that are, at least to some degree, caused by factors outside the focal individual's control and that trigger a deliberate thought process concerning one's career” (Akkermans et al., 2018, p.

4). The necessity to integrate individual-level, organizational-level and societal factors has thus become crucial as career transitions are complex and multi-factorial processes.

10. On the other side of career transition experience: what do we know about the role of emotional intelligence among guidance counselors?

Throughout the empirical chapters and the present manuscript, we demonstrated the importance of emotional intelligence with regard to career-related outcomes. Indeed, our research of interest focused on individuals or beneficiaries who realize or anticipate career transitions. However, we did not provide any information about guidance counselors. Hence, the counseling sessions are developed as a space where the clients realize meaningful narrations regarding their lives, past, and present, to anticipate and prepare for the upcoming career-related challenges (Savickas, 2005). The importance of self-disclosure and the social sharing of emotion is thus inherent to counseling activities (Olry-Louis, 2018). Indeed, guidance counselors are led to identify, understand, and manage the emotions of beneficiaries (Ivey et al., 2006). They are also invited to demonstrate attending behavior, reflecting feelings, and empathy. Hill et al. (2009) support the importance of emotion reflection for counseling skills, referring to the ability to understand the client's feelings and reflect that emotion to the beneficiaries.

A handful of research has examined the importance of emotional intelligence among guidance counselors in the literature. First, Easton et al. (2008) demonstrated positive correlations between emotional intelligence and perceived counseling self-efficacy among a sample of counselors-in-training. Second, Odaci et al. (2017) also showed among a sample of university students attending guidance counseling studies that emotional intelligence was associated with higher competencies in counselors' abilities to distinguish and apply basic counseling skills such as reflecting emotion. In a recent study, Değerli and Odaci (2020) showed that a structured intervention in emotional intelligence developed counseling skills among a sample of 28 prospective psychological counselors.

The present manuscript is thus a call for more research on the role of emotional intelligence in guidance counseling activities. Accordingly, Pekaar and colleagues demonstrated that emotional intelligence can be differentiated regarding the different types of intrapersonal (i.e., treating one's own emotions) and interpersonal (i.e., treating others' emotions) processes. Indeed, Pekaar and colleagues showed that the interpersonal dimension of emotional intelligence relates specifically to work performance (2017, 2019). In contrast, the intrapersonal dimension related more to well-being and experienced stress. Hence, developing or integrating emotional intelligence training in the training program of guidance counselors could be helpful for at least two reasons. First, it may help practitioners to better identify, understand and manage clients' emotional difficulties. Second, it may help practitioners to develop self-care in a profession that requires a lot of interpersonal demands (Baker, 2003). In addition, prior research has shown that supervises and supervisors with high levels of emotional intelligence tend to perceive the supervisory working alliance more

positively (J. B. Cooper & Ng, 2009). Thus, in addition to the beneficial effect of emotional intelligence on the clients, we hypothesize that emotional intelligence would also benefit guidance counselors' well-being. Indeed, prior research has demonstrated that emotional intelligence was negatively related to job burnout (Szczygiel & Mikolajczak, 2018). Interventional studies also demonstrated that a structured intervention in emotional intelligence decreased burn-out levels (Karahan & Yalcin, 2009). Thus, authors support the idea that emotional intelligence is a protective factor against job burn-out and emotional demands (for a review, see Pirsoul, 2020).

Table 21. Synthesis of limitations and future research directions of the present thesis

Limitations	Future research directions
#1: The heterogeneity of research designs	- Extend longitudinal and experimental research designs - Use ESEM and Bifactor-ESEM measurement models - Replicate emotional intelligence profiles through person-centered approaches
#2: The Lack of ability-emotional intelligence measures	- Use performance-based measures of emotional intelligence - Better understand the conscious and automatic processes related to emotional intelligence - Disentangle the effects between knowledge, ability, of trait levels of emotional intelligence - Apply the PAT framework
#3: The lack of long-term effects and enactment investigation of emotional intelligence	- Investigate the development effects of emotional intelligence - Develop intensive longitudinal studies to investigate the enactment and fluctuation of emotional intelligence
#4: Restricted investigation of career transitions	- Develop our understanding of the role of emotional intelligence in career transition using a lifespan perspective
#5: The lack of control variables	- Examining the incremental and predictive validity of emotional intelligence over and above personality traits and cognitive intelligence
#6: Difficulty to understand some results	- Shed light on the utilization dimension of emotional intelligence - Better understand the role of gender with regard to emotional intelligence - Replicate interventional studies
#7: The Lack of interpersonal emotional intelligence dimensions investigation	- Develop studies that aim to differentiate the effects of the intrapersonal from the interpersonal emotional intelligence dimensions - Use network analysis to examine the differential and interaction effects between the intrapersonal and interpersonal emotional intelligence dimensions with regard to career-related outcomes
#8: The absence of qualitative studies	- Develop qualitative and mixed design studies - Investigate the individuals' perception and subjective experience about emotional intelligence processes in career development
#9: Better understanding the environmental factors in career development	- Extend our comprehension of external factors and career shocks - Propose alternative investigation than the individual-level
#10: The lack of emotional intelligence investigation with regard to guidance counselors	- Understand the role of emotional intelligence in guidance counseling activities - Test the effectiveness of intervention among guidance counselors

Chapter 12

Practical implications

Chapter 12

Pratical implications

Emotions provide the fulcrum for revising the self during counseling. Before meaning may be reorganised and action engaged, feelings must change.

Mark L. Savickas

Besides the theoretical implications that we described in **Chapter 10**, the current thesis also brings some important practical implications for guidance counselors and individuals. Here, we outline four main practical implications: (1) informing guidance counselors about the beneficial effects of emotional intelligence, (2) developing emotional intelligence in a preventive approach, (3) developing and adapting more structured intervention in emotional intelligence to career transitions, and (4) developing emotional intelligence to foster beneficiaries' vocational interests clarity.

1. Informing guidance counselors about the beneficial effects of emotional intelligence

Overall, our findings shed light on the beneficial effect of emotional intelligence with regard to career-related outcomes. In line with prior meta-analytic evidence that showed the malleability of emotional intelligence (Hodzic et al., 2018), training guidance counselors to develop clients' emotional intelligence would be beneficial in various ways. In their interventions, guidance counselors may first help clients to identify and differentiate one's emotions. For example, clients may experience fear at the prospect of transitioning into the world of work. Recognizing the fear from the sadness is one example of the first step. To this end, practitioners may help clients to enrich their emotional vocabulary, allowing them to nuance their different emotional experiences. To this end, Plutchik's (2001), as well as Feldman-Barrett and Russell's tools (1998), are particularly useful. On the one hand, Plutchik's (1980) wheel proposed a cone-shaped model which delineates a wide range of emotions with different intensities that clients may use to identify their emotions. On the other hand, the circumplex model of emotion developed by Feldman-Barett and Russel posits that emotions may be identified in a two-dimensional planes: the valence and the arousal. Based on the third-wave cognitive-behavioral therapies, developing an acceptance of emotional experience and recognizing every emotion as a source of information may also help individuals in the next dimension: emotion understanding. Hence, guidance counselors may help clients to understand the underlying needs and values conveyed by one's emotions. For example, clients may experience fear, but what are the antecedents and the needs that underline this emotion? According to different authors, emotions are generally related to the importance of individuals' significance (Clore et al., 2001; Ortony et al., 1988). Thus,

emotion offers individuals access to what is essential for them. In parallel, guidance counselors may help clients to share and express their emotions. Indeed, prior research has already shown the beneficial role of teachers, parents, peers, and counselors as sources of social support to share their emotions at the prospect of an anticipated transition (Vignoli et al., 2020). Developing a secure and warm counseling environment is key to successful counseling activities. Finally, guidance counselors may help the clients to regulate their emotions. To this end, two forms of emotion regulation may be provided: instrumental support and giving information. On the one hand, instrumental support may refer to developing a repertoire of adaptive emotion regulation strategies (for a meta-analysis, see Peña-Sarrionandia et al., 2015b). On the other hand, guidance counselors play an important role in bringing specific information with regard to the labour market. To this end, Rochat (2015) has highlighted the necessity of encouraging clients' dreams while considering the reality of the labour market. This author thus suggests the importance of specific methods such as the motivational interviewing (W. R. Miller & Rollnick, 2012) to guide clients in their professional projects. Indeed, identifying the motives that support unrealistic aspirations could also help clients to preserve their motivation to pursue career objectives. Overall, results from the bifactor-ESEM model in **Chapter 5** indicated that there is an advantage to developing all dimensions with a specific focus on the comprehension and regulation dimensions among adult learners.

In this line, we think there is a necessity to implement emotional intelligence modules and courses on the importance of emotion in the training of guidance counselors.

2. Developing a preventive approach of career transitions: a sustainable perspective of emotional intelligence

Career transitions represent complex and dynamic processes that involve the integration of past, current, and future experiences (Akkermans et al., 2021). In addition, a growing corpus of research has shown that individuals tend to anticipate future transitions with complex patterns of multiple emotions (Parmentier, 2022). Hence, developing individuals' ability to identify and deal with one's emotions with regard to career development could help individuals at different levels of prevention.

First, it could be useful to develop emotional intelligence from a primary level perspective. Hence, as Mikolajczak et al. (2015) proposed, it could be relevant to integrate the development of emotional intelligence into the school curriculum. Indeed, Vignoli (2015) has already fostered the importance of counselors in managing adolescents' anxiety and guiding them with regard to their decision-making processes. Including emotional intelligence at school may help children to better identify, understand, and manage one's emotions in the long run. As a result, we may hope that developing emotional intelligence in childhood will help individuals with regard to vocational development and other life spheres.

Second, it could also be relevant to propose emotional intelligence training as secondary prevention. Hence, the intervention presented in **Chapter 7** is such a form of secondary prevention intervention. This form of intervention may help individuals with regard to

specific transitions, such as the school-to-work transition. Indeed, Fouad et al. (2006) also fostered the necessity to develop career services to alleviate university students' difficulties with regard to career decisions, psychological distress, and well-being. Developing preventive services may also decrease upcoming costs due to difficulties in successfully adapting to career transitions (Swisher et al., 2004).

Third, developing emotional intelligence among clients could benefit counselors, as already discussed in Point 1 of the present chapter.

The present manuscript is thus a call for developing emotional intelligence through the lens of a preventive approach. Accordingly, we also demonstrated in another study that emotional intelligence was positively related to positive anticipatory emotions and negatively related to negative anticipatory emotions at the prospect of the transition to the labour market (see Appendix A; Parmentier et al., 2021). Anticipatory emotions refer to one's emotions that individuals experience here and now at the prospect of desirable and undesirable events. In the same vein, prior studies have shown that emotional intelligence tends to enhance affective forecasting (Hoerger et al., 2012; Pena-Sarronandia et al., 2015), that is, the accuracy of individuals' expectations about their future emotional reactions (i.e., anticipated emotions, Gilbert et al., 1998). In parallel, a recent thesis demonstrated how combinations of future-oriented emotions (i.e., anticipatory and anticipated emotions; H. Baumgartner et al., 2008) influence vocational planning and effort at the prospect of vocational transitions (Parmentier, 2022). Thus, if emotional anticipation plays an important role in how individuals prepare for their transition and that emotional intelligence is a predictor of emotional anticipation, enhancing clients' emotional intelligence may better prepare them for upcoming transitions and career-related challenges. We thus encourage guidance counselors to help clients to better identify, understand and manage their emotions, but also to anticipate how they will experience future emotions and how they will be able to manage these emotions.

These recommendations can be understood in light of the recent conceptual model of sustainable careers developed by De Vos, Van der Heijden, and Akkermans (2020), depicted in Figure 16. These authors define a sustainable career as a form of human sustainability, that is, the ability to create, test, and maintain one’s adaptability capability. The sustainable career is thus a concept that encloses a systemic part and dynamic part. On the one hand, the systematic part reflects the person's dependence in a specific context, that is, all factors that may influence its behavior, emotions, or decisions. On the other hand, a sustainable career is also a dynamic process because individual and organizational factors influence the person and its career while evolving over time. In this conceptualization, the person-career fit is also essential: it involves the ability to adapt and influence the environment all career-long. Finally, this interdependent adaptation between the individual and career environment influences three core indicators: well-being, health, and productivity. Accordingly, we foster here emotional intelligence as an essential factor that may facilitate individuals to develop sustainable careers. Indeed, the ability to identify, understand and manage one’s and others’ emotions may help individuals to anticipate the emotional consequences of their choices, adapt to new situations and environments, and develop qualitative relationships. Hence, the current thesis has shown the positive relationships between emotional intelligence and work-

family balance (see **Chapter 5**). In addition, meta-analytic efforts have demonstrated the beneficial impact of emotional intelligence on individuals' well-being, physical and psychological health, and job performance (O'Boyle et al., 2011; Sánchez-Álvarez et al., 2016; Sarrionandia & Mikolajczak, 2020). This framework is also interesting as it aligned our eighth recommendation in **Chapter 11**, indicating the necessity to understand better the complex interactions between individuals, organizations, and society.

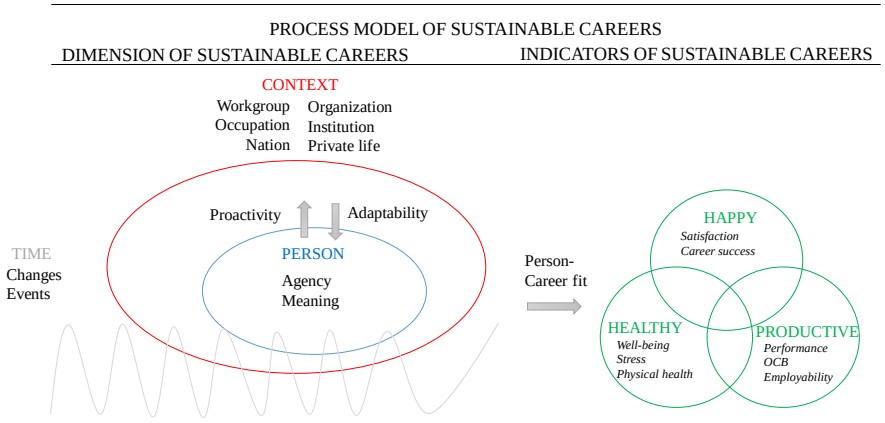


Figure 16. Conceptual model of sustainable careers (De Vos et al., 2020, p. 3)

3. Developing and adapting more structured intervention in emotional intelligence to specific career transitions

As described throughout the manuscript, emotional intelligence seems to have a beneficial impact in different contexts. We demonstrated in the present thesis the beneficial effects of emotional intelligence in the contexts of the school-to-work transition and in an adult education programme. There is thus a necessity to develop more interventions in emotional intelligence that are adapted to different contexts. Even if we did not demonstrate significant changes in **Chapter 7**, we think that the intervention based on the tripartite model of emotional intelligence (Mikolajczak et al., 2009) that gives rise to structured training in emotional intelligence (Kotsou et al., 2011; Nelis et al., 2011) is as an efficient intervention to enhance emotional intelligence. This intervention is composed of five modules that aim to enhance each of the dimensions of the tripartite model of emotional intelligence: emotion identification, emotion comprehension, emotion expression, emotion regulation, and emotion utilization. We think that an adaptation of this training is needed given the incoherent pattern of results found in **Chapter 5** with regard to the utilization dimension. As a reminder, this intervention is based on videos, role play, exercises, and theory. That being said, we think that it is also essential to adapt this material to other transitions. Prior research has already

realized such efforts as Hodzic et al. (2015) applied these interventions in the context of unemployment. These interventions may also be beneficial for secondary students. Accordingly, Di Fabio and Kenny (2011) have already shown that a structured training in emotional intelligence decreased indecisiveness and career decision difficulties.

As argued by Hodzic et al. (2018), we also think that emotional intelligence training mainly develop declarative knowledge and factual information about emotions rather than the natural tendency of individuals to manage one's emotions. Likewise, personal sessions could follow training in emotional intelligence to examine how individuals applied their knowledge to their real life. Repetitive, follow-up and longer training are thus also needed to examine how individuals use their emotional intelligence to enhance their career adaptability.

4. Developing emotional intelligence to foster beneficiaries' vocational interests clarity

As developed in Point 1 of the current chapter, emotions are always a source of information about what is important for individuals in terms of psychological needs, values, and objectives (Clore et al., 2001). Overall, so-called "positive" emotions arise when our objectives or values are filled, whereas so-called "negative" emotions arise when our objectives or values are threatened. Thus, in a preventive approach, we think that developing emotional intelligence may lead to a better understanding of how individuals describe themselves but also which values drive their behaviors. Furthermore, by identifying and understanding one's emotions in relation to their career, individuals may develop and find their vocational interests with the help of guidance counselors. Prior authors have already claimed that individuals with high emotional intelligence are more aware of their own vocational interests and have more ability to express their interests during counseling sessions (Emmerling & Cherniss, 2003). To this end, it would be relevant for beneficiaries to develop a clear idea about the emotional demands of the different jobs and how they anticipate their (emotional) reactions. Accordingly, Puffer (2011) examined the influence of emotional intelligence on collegians' career decision-making and showed that individuals with a high level of emotional intelligence were more explicit about their career interests, preferences, and skills.

5. Concluding remarks

Overall, we think that there is an urgent need to develop the importance of emotion in guidance counseling activities to assist and help individuals in their vocational development. Beyond prior interesting empirical findings, this doctoral thesis stresses the relevance of emotion and emotional intelligence in career counseling activities. We also think that guidance counseling activities vocational and career literature would benefit from the psychotherapy field. For instance, the emotion-focused therapy developed by Greenberg (2002) is a complementary intervention to emotional intelligence training presented in the current thesis. According to this author, emotion plays a central role in the construction and in the organization of the self. The emotion-focused therapy encompasses three main steps:

(1) increasing emotion awareness by accepting and making sense of their emotional experience, (2) enhancing emotion regulation by developing adaptive emotion regulation strategies, and (3) transforming emotion, that is, changing the relation to the emotional experience. Although this intervention has been primarily developed to help clients with emotional difficulties, we think this intervention should be applied to the guidance counseling activities or enrich existing training in emotional intelligence.

In line with Puffer (2011), we hope that future research will develop an emotion-focused career framework and therapeutic model to assist individuals in their vocational and career development.

General conclusion

General conclusion

As Vincent Van Gogh said, "*Let's not forget that the little emotions are the great captains of our lives and we obey them without realizing it.*" Indeed, if one's emotions may lead to enjoyable experiences, they may also lead to painful experiences. The human ability to identify and manage emotional information—labeled emotional intelligence—has thus been claimed as an important adaptive self-regulatory resource that helps individuals in their decision-making, social relationships, and daily life functioning. Moreover, the concept of emotional intelligence has also grasped researchers' interest in the context of career development. Despite the emergence of a growing corpus of research devoted to emotional intelligence in the context of vocational transitions and career development, we delineated in the present manuscript a series of unanswered questions and limitations with regard not only to *what* we know but also to *how* we know what we know about emotional intelligence in career development. Accordingly, we proposed new approaches to ***question***, ***extend***, and ***integrate*** the role of emotional intelligence with regard to the career literature. Throughout the doctoral thesis, we thus first proposed an original review of the main limitations that hamper the credibility of research findings. Next, we proposed a series of empirical chapters that encompassed innovative research designs in the investigation of emotional intelligence. First, we relied upon longitudinal and experimental research designs that gave rise to interesting significant and non-significant results, highlighting the necessity to foster a preventive approach in the development of emotional intelligence and better understand the underlying process involved in developing self-regulatory resources. In doing so, we also brought new empirical evidence to most of the previous cross-sectional studies. Second, the introduction of bifactor and ESEM measurement models brought important contributions to the structure and conceptualization of emotional intelligence. To the best of our knowledge, we provided one of the first empirical pieces of evidence with advanced psychometric indices that support emotional intelligence as a multidimensional construct composed of a strong general factor. Third, by highlighting the emergence of emotional intelligence profiles, we also stressed the necessity of not only considering emotional intelligence as high or low but also as a set of complex and interacting dimensions. Finally, we proposed an overall picture of what we know about emotional intelligence with regard to career-related outcomes by conducting a meta-analytic investigation. Overall, this doctoral thesis offered an integrative effort to enrich the linkages between emotional intelligence and career theories.

Throughout this doctoral thesis, we hope that we have provided a critical and nuanced view of emotional intelligence that goes beyond the simplistic social prescription and managerial discourse ascribing positive value to people with high emotional intelligence. Our outlook aims to align with the following Adam Grant's quote, "*Instead of assuming that emotional intelligence is always useful, we need to think more carefully about where and when it matters."* We also hope that we contributed—and will contribute—to providing new insights to conceive and study the concept of emotional intelligence in career development.

Building on the present findings, we also hope that the current manuscript will help individuals and guidance counselors to help themselves and others to apprehend better emotional experiences and develop meaningful careers.

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List of tables

Table 1. Meta-analytic correlations of EI with life outcomes 44
Table 2. Overview of recommendations for enhancing the credibility of emotional intelligence investigation in career development adapted from Rudolph (2021). 64
Table 3. Summary of empirical chapters 77
Table 4. Summary of how each chapter responds to the nine limitations 78
Table 5. Means, standard deviations, reliabilities and bivariate correlations for the study variables. 87
Table 6. Measurement invariance statistics 88
Table 7. Cross-Lagged model fit and comparison of alternative models 89
Table 8. Goodness-of-fit indices of alternative measurement models of emotional intelligence 106
Table 9. Goodness-of-fit indices of alternative measurement models of emotional intelligence 106
Table 10. factor loadings (λ), item residuals (δ) and psychometric indices for bifactor-ESEM 108
Table 11. Structural equation modeling results with the bifactor-ESEM predicting emotional exhaustion, work-family conflict, family-work conflict, and career satisfaction by emotional intelligence 110
Table 12. Group-specific latent profile enumeration fit statistics 126
Table 13. Multigroup similarity fit statistics 127
Table 14. Differences of outcomes between emotional intelligence profiles for female students 131
Table 15. Differences of outcomes between emotional intelligence profiles for male students 131
Table 16. Means, standard deviations and bivariate correlations for the study variables 144
Table 17. Means, standard deviations, and significance of differences between training and control groups prior to emotional intelligence intervention 145
Table 18. Means, standard deviations, and significance of differences between Time 1 and Time 2 for each variable and each group 146
Table 19. Means, standard deviations, and significance of differences between training and control groups after the emotional intelligence intervention (Time 2) 147
Table 20. Summary of meta-analytic relationships between emotional intelligence and career-related outcomes 169
Table 21. Synthesis of limitations and future research directions of the present thesis 211

Table A1. Correlation matrix 270
Table A2. Latent profile enumeration fit statistics 272
Table A3. Means of indicators of career adaptability profiles 274
Table A4. Differences of outcomes between career adaptability profiles 275

Table C1. Descriptive statistics for each item of the intrapersonal emotional subscale of the Profile of Emotional Competence (Brasseur et al., 2013) 286
Table C2. Standardized factor loadings (λ) and item residuals (δ) for H-CFA solution 287
Table C3. Standardized factor correlations for the H-CFA solution 288
Table C4. Standardized factor loadings (λ) and item residuals (δ) for the CFA solution 289
Table C5. Standardized factor loadings (λ) and item residuals (δ) for ESEM solution 290
Table C6. Standardized factor loadings (λ), item residuals (δ) and psychometric indices for bifactor-CFA solution 291
Table C7. Psychometric indices for bifactor-CFA 292
Table C8. Psychometric indices for bifactor-ESEM 292
Table C9. Psychometric indices for bifactor models and their cut-off values 293
Table C10. Factor correlation matrix 295

Table D1. Factor Correlation Matrix 297

Table E1. Most frequently used emotional intelligence conceptualizations and operationalizations. 300

Figure captions

Figure 1. The integrated model for the development of emotional intelligence (Zeidner et al., 2003, p. 90).....32
Figure 2. The different components of the dual-process model (Fiori, 2009, p. 34).....34
Figure 3. The cascading model of emotional intelligence (Joseph & Newman, 2010, p. 56) 36
Figure 4. PAT integrated framework for the prediction of emotional intelligence behavior (Vesely-Maillefer et al., 2018) 38
Figure 5. The process model of dynamic self- and other-focused emotional intelligence (Pekaar et al., 2020, p. 4).....40
Figure 6. Career construction model of adaptation (adapted from Rudolph et al., 2017, p. 19) 56
Figure 7. Cross-lagged relationships between emotional intelligence and career adaptability of the causality model. *p<.05. ***p<.001 89
Figure 8. Graphical representation of the alternative measurement models.....97
Figure 9. Final LPA solution for female students 128
Figure 10. Finale LPA solution for male students.....129
Figure 11. Graphic representation of intrapersonal emotional intelligence before (Time 1) and after (Time 2) the intervention for the training and the control group.....146
Figure 12. The overall model of the relationships between emotional intelligence and career-related outcomes investigated in the present meta-analysis 161
Figure 13. PRISMA Flow Diagram 166
Figure 14. Forest plot showing the results of the meta-analysis.....170
Figure 15. Findings from the present thesis adapted from Rudolph et al. (2017, p. 19) in the career construction model of adaptation 197
Figure 16. Conceptual model of sustainable careers (De Vos et al., 2020, p. 3).....218

Figure A1. Final 6-profile solution of career adaptability.....273
Figure A2. Outcomes for the final 6-profile solution of career adaptability 276

Figure B1. Full cross-lagged model depicting the relationships between emotional intelligence and career adaptability of the causality model.....283

Appendices

Appendix A

Career adaptability profiles and their relations with emotional and decision-making correlates among Belgian undergraduate students

The present study used a person-centered approach to investigate university students' profiles of career adaptability and determine whether different combinations of concern, control, curiosity, and confidence could be identified. We also explored the relations of these profiles with emotional intelligence, anticipatory emotions, and career decision-making self-efficacy. We found 6 distinct profiles of career adaptability among 307 university students that differed both on their level and shape. Emotional intelligence was associated with profiles displaying higher levels of career adaptability. Furthermore, profiles of career adaptability significantly displayed differences in terms of positive anticipatory emotions at the prospect of the school-to-work transition and career decision-making self-efficacy, but not in terms of negative anticipatory emotions. These results highlight that differentiating profiles of career adaptability provide insights for the design and the implementation of career-related interventions among university students.

Pirsoul, T., Parmentier, M. & Nils, F. (2021). Career Adaptability Profiles and Their Relations With Emotional and Decision-Making Correlates Among Belgian Undergraduate Students. *Journal of Career Development*. https://doi.org/10.1177/08948453211005553

Appendix A

Career adaptability profiles and their relations with emotional and decision-making correlates among Belgian undergraduate students

1. Introduction

Emerging adulthood is a particularly crucial phase in individuals' career development (Porfeli & Lee, 2012). For undergraduate students, career development tasks include the crystallization of career goals, the commitment to a career choice, and the active preparation for a chosen career path and the job market entry. Understanding undergraduates' capabilities to prepare for and deal with these tasks and challenges is therefore crucial to sustain and help them to navigate an ever more insecure and turbulent world of work (Koen et al., 2012). Within the career construction literature, these capabilities have been referred to as career adaptability (Savickas, 2013). The construct of career adaptability has gained increasing attention in recent years. It has been defined as a "psychosocial construct that denotes an individual's resources for coping with current and anticipated tasks, transitions, and traumas in their occupational roles" (Savickas & Porfeli, 2012, p. 662). Building on the career construction model of adaptation, vocational research has sought to identify the antecedents (i.e., adaptivity), individual responses (i.e., adapting responses), and outcomes (i.e., adaptation results) of career adaptability (Hirschi et al., 2015; Rudolph et al., 2017). Even though a vast amount of research insights has been gathered over the years, the study of career adaptability has heavily relied on variable-centered approaches and has overlooked the possibility that individuals may not only differ in their *mean* levels of career adaptability but also in the specific combinations of career adaptability dimensions (i.e., concern, control, curiosity, and confidence; Hirschi & Valero, 2015). These emerging approaches have been referred to as person-centered and provide promising avenues for a complementary and more thorough understanding of vocational processes (Hofmans et al., 2020; Spurk et al., 2020).

In the first study investigating the profiles of career adaptability using a person-centered approach, Hirschi and Valero (2015) found, and partially replicated, five profiles that were meaningfully related to antecedents (i.e., adaptivity) and career-related outcomes (i.e., adapting). In their first sample, they found that profiles were mostly differentiated upon their level (low vs. high levels of career adaptability dimensions) rather than their shape (qualitative distinct combinations among career adaptability dimensions), except for a small *helpless-passive* profile. This latter profile was characterized by very low levels of control and curiosity dimensions, and average levels of concern and confidence. In the second sample, five profiles were differentiated upon their level (very low, low, below average,

above average, and high career adaptability). In both studies, they demonstrated that personality factors influenced profile membership and that profiles displaying higher levels of career adaptability tended to report higher levels of career planning and exploration. Hirschi and Valero (2015) concluded "that levels effects dominate shape effects in latent career adaptability profiles" and, therefore, "that researchers can rightfully examine career adaptability using a variable-centered approach" (p. 227). However, the replication of profiles in different populations and (educational) contexts, as well as the investigation of additional theoretically-driven antecedents and outcomes is an important prerequisite in order to shed light on the (in-)adequacy of person-centered approaches as well as their complementariness with variable-centered methods when studying important vocational processes (Hofmans et al., 2020; Spurk et al., 2020). Given that person-centered approaches are rather exploratory in nature and highly sample-dependent, Morin et al. (2018) proposed the following steps to address the construct validity of profiles and their generalizability: (1) demonstrating their theoretical value, (2) demonstrating meaningful relations with key covariates, and (3) replicating profile solutions across samples and across time. Investigating the construct validity and their generalizability to different samples is not only important for theoretical purposes but also for practice in order to confirm their rightful use in identifying at-risk students as well as designing and implementing tailored interventions among university students (Koen et al., 2012).

The objectives of the present study were threefold. First, we sought to replicate Hirschi and Valero's (2015) findings with regards to career adaptability profiles among undergraduate students in Belgium. For this purpose, we used latent profile analysis to examine the emergence of distinct profiles with different combinations of the dimensions of concern, control, curiosity, and confidence. In order to address the emotional nature of career transitions and to respond to calls for a better inclusion of emotional processes in vocational research (Hartung, 2011; Kidd, 2004), our second objective was to investigate the relations between career adaptability profiles and two important emotional correlates: emotional intelligence and anticipatory emotions. On the one hand, emotional intelligence has been identified as a key antecedent of career adaptability (Celik & Storme, 2017; Coetzee & Harry, 2014; Udayar et al., 2018). However, the number of empirical efforts regarding their relation is still limited (Parmentier et al., 2019) and it remains unclear how these relations would translate in a person-centered framework. On the other hand, as future graduates anticipate their transition into the world of work, the various events it entails (e.g., finding a job), and how they will cope with these challenges, they experience what has been called *anticipatory* emotions (Baumgartner et al., 2008), that is, emotions currently experienced at the prospect of a future event. These anticipatory emotions are close to constructs such as career hope or career anxiety – even though the latter were mainly considered as trait or dispositions – and have been identified as important correlates of career adaptability (Parmentier et al., 2021; Santilli et al., 2017; Vignoli, 2015). Third, we investigated career decision-making self-efficacy as an additional outcome of career adaptability profiles in order to strengthen the replication approach of our study. As such, both emotional intelligence and career adaptability have been identified as antecedents of career decision-making self-efficacy (Di Fabio & Saklofske, 2014; Rudolph et al., 2017).

In doing so, the present study offers several contributions to the field. First, it provides a direct replication in another sample of previous research on career adaptability profiles. Such replication efforts are important to assess and ascertain the utility of person-centered approaches in vocational research (Hofmans et al., 2020; Spurk et al., 2020). Second, we contribute to the existing evidence about career construction theory by testing a broad model of relations between adaptivity (i.e., emotional intelligence), adaptability, and adapting responses (i.e., anticipatory emotions and career decision-making self-efficacy). Investigating the broader career construction model of adaptation using a person-centered approach is important to provide insights into how different profiles are related to different antecedent and outcomes variables (Hofmans et al., 2020; Spurk et al., 2020). Third, we echo previous calls for more research on the role of emotional processes in career development (Hartung, 2011; Kidd, 2004).

1.1 Profiles of career adaptability

Career adaptability has been defined as a set of psychosocial self-regulatory, transactional, and malleable resources that allow individuals to prepare for, cope with, and manage career transitions and the associated career- or work-related issues (Savickas & Porfeli, 2012). Career adaptability is a multidimensional construct composed of four dimensions: concern (i.e., being future-oriented and prepare for the future), control (i.e., being responsible in constructing one's own career), curiosity (i.e., exploring possible selves and fit between oneself and the environment), and confidence (i.e., beliefs of own capacities to manage career goals). Meta-analytic findings have confirmed that career adaptability was related to a wide range of career-related outcomes such as job and career satisfaction, career identity, lower job stress, and employability (Rudolph et al., 2017), among other outcomes. Accordingly, career adaptability is considered as a key career meta-competency that individuals may rely upon when anticipating and preparing for major career events, deal with work and career changes, proactively plan their career, develop new skills, engage in career behaviors, and ultimately build sustainable careers (Buyken et al., 2015).

Even though substantial empirical evidence has now demonstrated the role of career adaptability in individuals' careers (see Johnston, 2018, for a review), the existing stream of research is mainly dominated by variable-centered approaches. This focus overlooked the possibility that individuals may differ in their intraindividual *combinations* on the specific dimensions of career adaptability. In other words, while variable-centered approaches study the extent to which variables are related to each other *on average* for the entire sample, they fail to describe *how* the specific dimensions of career adaptability combine together, that is, the patterns and the relative intensity of their combinations. These arguments gave rise to calls for the use of person-centered approaches in vocational research (Hofmans et al., 2020; Spurk et al., 2020).

In this study, we used latent profile analysis (LPA) to investigate the combinations of the career adaptability dimensions of concern, control, curiosity, and confidence among a sample of university students. In LPA, profiles are described based on their level and shape. While level differentiates profiles on their mean level for each specific dimension (e.g., low vs. high

concern), shape refers to the different forms displayed by the specific combination of the dimensions taken together (e.g., low concern with high curiosity). Contrary to classical clustering, LPA lies within the structural equation modeling framework and thus have several advantages, such as the availability of fit indices to choose the best profile solution, the consideration of measurement errors, and the inclusion of covariates (Hofmans et al., 2020; Spurk et al., 2020), among other advantages.

Research question 1. Do distinct profiles of career adaptability emerge, and do they vary both quantitatively and qualitatively?

Consistent with Hirschi and Valero (2015), we expected the emergence of at least five profiles differentiated mainly according to level (from low to high levels on all dimensions). However, theoretical arguments cast doubt on the ubiquity of such profiles only differentiated according to their mean levels. While the higher-order construct of career adaptability has attracted most of researchers' attention, there are several arguments in investigating the specific contributions of each dimension separately (see also Hirschi & Valero, 2015). A first argument stems from the numerous empirical efforts that showed the unique explanatory and predictive validity of career adaptability dimensions, independently of the broad construct of career adaptability, with several antecedents and outcomes (Rudolph et al., 2017 for a meta-analysis). The second line of argument stems from the theoretical conceptualization of the career adaptability dimensions that explicitly theorize the presence of different profiles (Savickas, 2013). Actually, the four dimensions of career adaptability do not necessarily develop at the same rates, and experienced career-related tasks, transitions, and traumas are likely to intervene in the development of these dimensions, sometimes leading to regressions or fixations (Savickas, 2013). Consequently, significant intraindividual differences between the four dimensions are likely to emerge depending on their development trajectories. As such, counselors are invited to assess potential career-related problems associated with each specific dimension finely: indifference (low concern) or anxiety (high concern), indecision (low control) or impulsivity (high control), unrealism (low curiosity) or overstimulation (high curiosity), and inhibition (low confidence) or overconfidence (high confidence). According to Savickas (2013), investigating these differences with regards to the four dimensions could be crucial for understanding the antecedents and consequences of individuals' career-related problems, and implementing tailor-made interventions. Consequently, while we expected the emergence of specific profiles following Hirschi and Valero's (2015) findings, we still left the research question relatively open. This is consistent with the inductive and exploratory nature of person-centered approaches (Hofmans et al., 2020).

1.2 Correlates of career adaptability profiles

The second and third goals of this study were to explore the relationships of distinct career adaptability profiles with antecedents and outcomes. Building on the career construction model of adaptation, we considered emotional intelligence as a facet of adaptivity (Hirschi et al., 2015; Rudolph et al., 2017) and hypothesized that emotional intelligence would predict profile membership. This is consistent with previous variable-centered research evidence considering emotional intelligence as an important factor of adaptive functioning in

individuals' careers. Previous research has already shown that emotional intelligence was an antecedent of career adaptability (Coetzee & Harry, 2014; Parmentier et al., 2019) and that career adaptability mediated the impact of emotional intelligence on several outcomes such as academic satisfaction, academic engagement, employability, and career decision-making (Celik & Storme, 2017; Udayar et al., 2018). We expected that emotionally intelligence individuals would be more aware of their career aspirations and more future-oriented (i.e., concerned), perceive better control over career-related tasks (i.e., control), evaluate career-related tasks positively and more able to anticipate the emotional consequences of their choices and behaviors (i.e., curiosity), and build confidence in overcoming emotional situations (i.e., confidence). We therefore hypothesized that individuals with a high level of emotional intelligence would be more likely to belong in profiles with high levels of the four career adaptability dimensions.

Hypothesis 1. *High levels of emotional intelligence will be related to higher likelihood of membership into profiles characterized by high levels of concern, control, curiosity, and confidence.*

Furthermore, we explored the relations between career adaptability profiles and anticipatory emotions at the prospect of the school-to-work transition and career decision-making self-efficacy. Building upon the career construction model, these two variables are both considered as adapting responses. Adapting, or adapting responses, refers to the display of adaptive behaviors or reactions and the development of adaptive attitudes that help when addressing changing career conditions and dealing with career development tasks (Savickas, 2013). Within the career construction model of adaptation (Hirschi et al., 2015), adapting or adapting responses are considered as outcomes of career adaptability: individuals are more likely to display adapting responses in response to career-related tasks when they feel that they have career adaptability resources in terms of concern, control, curiosity, and confidence to prepare for and face these tasks.

On the one hand, previous research has highlighted the impact of career adaptability on positive and negative future-oriented affect and emotions (Buyukgoze-Kavas, 2014; Parmentier et al., 2021; Santilli et al., 2017; Vignoli, 2015). Related research also showed that career adaptability was a key predictor of positive and negative affect, and well-being (Celen-Demirtas et al., 2015; Fiori et al., 2015; Konstam et al., 2015; Maggiori et al., 2013; Urbanaviciute et al., 2018). On the other hand, self-beliefs in making career-related decisions are a core ingredient of the career decision-making process (Di Fabio & Saklofske, 2014). Building upon social cognitive theory, career decision-making self-efficacy beliefs have been developed to account for individuals' confidence in their ability to successfully complete the tasks required to make a career decision (Betz et al., 1996). Previous research has consistently shown that higher levels of career adaptability were associated with higher levels of career decision-making self-efficacy (Rudolph et al., 2017). According to Savickas (2013), concerned individuals develop plans to achieve their career goals and are more future oriented. Individuals with a high level of control are more able to shape their environment and to develop adaptive behaviors towards their future career goals. Curious individuals explore their environment as well as their future self. Finally, confident individuals in regard

to their career develop a form of confidence in their abilities to overcome career difficulties. We therefore predicted that individuals with high levels of the four career adaptability dimensions would display higher levels of positive anticipatory emotions and career decision-making self-efficacy levels and lower level of negative anticipatory emotions.

Hypothesis 2. *Career adaptability profiles will display significant differences in terms of positive and negative anticipatory emotions such as profiles characterized by higher levels of concern, control, curiosity, and confidence will display more positive and less negative anticipatory emotions.*

Hypothesis 3. *Career adaptability profiles will display significant differences in terms of career decision-making self-efficacy such as profiles characterized by higher levels of concern, control, curiosity, and confidence will display more career decision-making self-efficacy.*

2. Method

2.1 Participants and procedure

Data were collected among 307 university students from various programs in Belgium. Students were contacted and invited to participate to an online survey which was approved by the Institutional Review Board of the university. Students were assured of both the anonymity and the confidentiality of the study and gave their informed consent. Of the participants, 78.8% were girls and mean age was 22.33 years (*SD* = 4.19). With regard to year of study, 140 participants were bachelor students (47.3%), while 156 participants were master students (52.7%). Proportions of study programs were as follows: Social Sciences (69.2%), Health Sciences (25.7%), and Science and Technology (5.1%).

2.2 Measures

2.2.1 Career adaptability

Career adaptability was investigated with the short version of the Career Adapt-Abilities Scale (Maggiori et al., 2017). This instrument consists of 12 items ranging from 1 ("*Not one of my strengths"*) to 5 ("*My greatest strength"*) and is composed of 4 separate dimensions: concern (α = .73; e.g., "*Preparing for the future")*, control (α = .74; e.g., "*Making decisions by myself"*), curiosity (α = .63; e.g., "*Observing different ways of doing things"*), and confidence (α = .70; e.g., "*Taking care to do things well"*).

2.2.2 Emotional intelligence

We measured emotional intelligence using the intrapersonal dimension of the Profile of Emotional Competence (α = .89; Brasseur et al., 2013). The measure includes 25 items rated from 1 ("*Strongly disagree"*) to 7 ("*Strongly agree*") and provides separate sub-scores for 5 dimensions (i.e., identification, comprehension, expression, regulation and utilization). Examples of items are "*When I am touched by something, I immediately know what I feel"*

(identification dimension) or "*I find it difficult to handle my emotions*" (reverse scoring, regulation dimension).

2.2.3 Anticipatory emotions

We assessed positive anticipatory emotions with the 5 following items: excited, strong, enthusiastic, proud, determined (α = .85). Negative anticipatory emotions were assessed with the 5 following ones: jittery, upset, scared, nervous, and afraid (α = .87). For both subscales, response scales ranged from 1 ("*Not at all*") to 5 ("*A great deal"*). The instructions for the emotional induction were as follows: "*Stop for a moment and think about your situation at the end of your studies and the entry on the labor market. Please indicate how do you feel right now at the prospect of your transition from university to the job market using the following statements."*

2.2.4 Career decision-making self-efficacy

Career decision-making self-efficacy was assessed with a validated French version of the Career Decision Self-Efficacy Scale–Short Form (α = .84; Betz et al., 1996; Gaudron, 2013). Previous research has demonstrated the good psychometric properties of the French version (Storme, Celik &, Myszkowski, 2019). This scale consists of 18 items ranging from 0 ("*No confidence at all*") to 5 (*"Complete confidence*"). Sample items are "*Determine what your ideal job would be"* and *"Identify employers, firms, institutions relevant to your career possibilities."*

Table A1. Correlation matrix

		1	2	3	4	5	6	7	8	9	10	11	12
1.	Gender	–											
2.	Age	–.04	–										
3.	Study year	–.06	.43**	–									
4.	Study program	.03	–.03	.04	–								
5.	Emotional intelligence	–.17**	.15*	.12	.10	–							
6.	Concern	.06	.10	–.02	–.09	.31***	–						
7.	Control	–.05	.17**	.11	–.02	.35***	.42***	–					
8.	Curiosity	.03	.16**	.18**	–.16*	.19**	.33***	.27***	–				
9.	Confidence	.01	.15*	.17**	–.06	.15*	.31***	.36***	.44***	–			
10.	Positive anticipatory emotions	.00	–.02	–.11	–.09	.16*	.54***	.40***	.19**	.26***	–		
11.	Negative anticipatory emotions	.09	–.01	.14*	.05	–.19**	–.05	–.15*	–.01	.01	.09	–	
12.	Career decision-making self-efficacy	–.05	.07	.04	–.02	.36***	.58***	.38***	.28***	.30***	.45***	–.15*	–
	M	–	22.33	–	–	4.50	3.54	3.84	3.69	3.89	3.33	2.69	3.37
	SD	–	4.19	–	–	0.85	0.78	0.79	0.68	0.64	0.83	0.94	0.55

Note. Gender was coded 1 = male and 2 =female; study program was coded 1 = medicine and health sciences, 2 = life and technology sciences and 3 = human and social sciences. EI = emotional intelligence. PAE = positive anticipatory emotions. NAE = negative anticipatory emotions. CDSE = career decision-making self-efficacy. * Significant at the .05 level. ** Significant at the .01 level. *** Significant at the .001 level.

3. Results

3.1 Preliminary analyses

All statistical analyses were conducted using M*plus* 8 with the robust maximum likelihood estimator. The means, standard deviations, and bivariate correlations are displayed in Table A1. Second, we performed confirmatory factor analyses to assess the measurement reliability and discriminant validity of our constructs. All construct-specific measurement models for career adaptability, emotional intelligence, anticipatory emotions, and career decision-making self-efficacy, respectively, demonstrated satisfactory to excellent fit to the data (RMSEAs $\leq .09$; CFIs $\geq .95$; TLIs $\geq .92$; SRMR $\leq .07$). Our theoretical model in which all constructs and their respective items were modeled altogether fitted the data satisfactorily (χ^2 (406) = 685.57; RMSEA = .05; CFI = .91; TLI = .89; SRMR = .07) and was superior to all more constrained models. Factor scores were saved from this theoretical measurement model to be used as profile indicators in the subsequent analyses (Morin et al., 2016).

3.2 Latent profile analyses

We performed several LPA in a stepwise procedure from 1 up to 8 profiles. Besides the availability of fit statistics, issues of parsimony, theoretical adequacy, substantive meaning, profile redundancy, and profile size also drive the profile enumeration process (Nylund et al., 2007). LPA were performed using 5,000 random sets of starting values and 1,000 iterations, while retaining the 100 best solutions for optimization. Several fit statistics were used to evaluate each profile solution: Akaike Information Criterion (AIC), Consistent AIC (CAIC), Bayesian Information Criterion (BIC), sample-size adjusted BIC (SABIC), adjusted Lo-Mendell-Rubin likelihood ratio test (aLMR), Bootstrap Likelihood Ratio test (BLRT), and entropy. The best profile solution should display smaller AIC, CAIC, BIC, and SABIC values, an entropy greater than .70, and significant aLMR and BLRT statistics. Recommendations from simulation studies encourage researchers to favor the CAIC, BIC, SABIC, and BLRT (Nylund et al., 2007). Means and variances of each indicator were allowed to vary during the enumeration process, providing a more realistic parameterization and less biased parameter estimates (Morin et al., 2011).

Table A2. Latent profile enumeration fit statistics

# of profiles	LL	fp	SCF	AIC	BIC	SABIC	CAIC	aLMR (*p*)	BLRT (*p*)	Entropy
1	–1546.38	8	1.11	3108.77	3138.58	3113.21	3146.58	–	–	1
2	–1365.04	17	1.15	2764.09	2827.44	2773.53	2844.44	.000	.000	.77
3	–1265.45	26	1.07	2582.89	2679.79	2597.33	2705.79	.000	.000	.87
4	–1214.53	35	1.10	2499.07	2629.51	2518.50	2664.51	.080	.000	.81
5	–1173.57	44	1.08	2435.14	2599.13	2459.58	2643.13	.052	.000	.88
6	–1141.33	53	1.10	2388.66	2586.19	2418.09	2639.19	.151	.000	.82
7	–1118.35	62	1.15	2360.70	2591.77	2395.13	2653.77	.415	.014	.87
8	–1095.81	71	1.01	2333.62	2598.23	2373.05	2669.23	.194	.483	.89

Note. LL = log likelihood ; fp = free parameters ; SCF = scaling correction factor; AIC = Akaike information criteria; BIC = Bayesian information criteria; SABIC = sample-size adjusted BIC; CAIC = consistent AIC; aLMR = adjusted Lo-Mendell-Rubin likelihood ratio test; BLRT = Bootstrap Likelihood Ratio test.

The fit indices associated with the profile enumerations are displayed in Table A2. The AIC and SABIC kept on decreasing and suggested the continuing addition of profiles. However, they tended to reach a plateau after the 6-profile solution. Values for the BIC and CAIC are more informative as they reached a plateau after 4 profiles and both reached their lowest point at 6 profiles and increased afterwards. The values associated with aLMR and BLRT supported a 3- and a 7-profile solution, respectively. However, aLMR is known to underestimate the number of profiles (Nylund et al., 2007) and the results of the BLRT were inconsistent and regularly failed to converge for the 7- and the 8-profile solution. These results thus supported the 6-profile solution as the best description of our data. In order to check the theoretical adequacy and meaning carried out by the different profile solutions, we carefully examined the solutions from 4 up to 6 profiles. These qualitative investigations brought further support for the 6-profile solution as additional profiles were systematically qualitatively distinct and meaningful. The 6-profile model was thus retained as the best description of the data and is graphically represented in Figure A1 (see Table A3 for means levels of the indicators).

Given the balanced proportions between bachelor and master students and the significant correlations between age, study year, and several dimensions of career adaptability, we performed additional analyses to investigate the replicability of the 6 profiles between bachelor and master students. Following a procedure developed by Morin et al. (2016), our analyses revealed that the profiles in both groups were equivalent in terms of their shape (structural similarity), their within-profile variance (dispersion similarity), as well as the relative size of each profile (distributional similarity), as demonstrated by decreasing AIC, BIC, SABIC, and CAIC fit statistics.

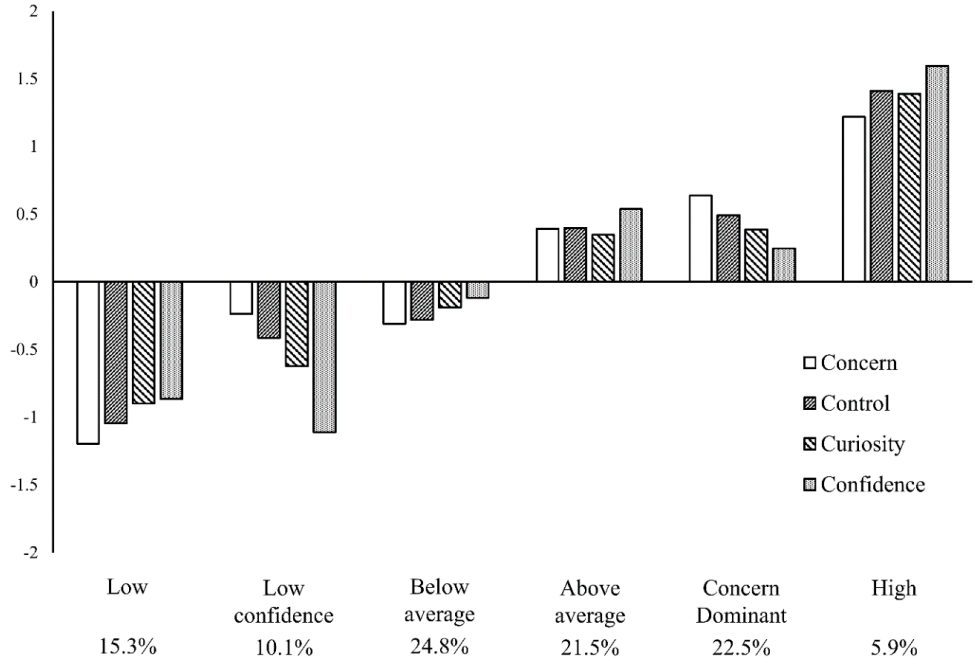


Figure A1. Final 6-profile solution of career adaptability

3.3 Interpretation of profiles

Profile 1 encompassed students with very low levels on the four dimensions of career adaptability. This *low* profile was composed of 15.3% of the total sample. Profile 2 was composed of students exhibiting low levels on the four dimensions but the confidence dimension was especially low compared to the other dimensions. To reflect this pattern and differentiate it from the *low* profile, this profile was labeled the *low confidence* profile. The third profile was the largest (24.8%) and displayed levels of career adaptability dimensions moderately *below average*. The fourth and the fifth profiles were both composed of a substantial proportion of students (21.5% and 22.5%, respectively) and displayed above average levels of career adaptability dimensions. The main difference between these two profiles lied in the dominance of the concern dimension for the fifth profile compared to the fourth one. To reflect these differences and consistent with previous results (Hirschi & Valero, 2015), we used the following labels: the *above average* and the *concern dominant* profiles. Finally, the smallest and last profile (5.9% of the sample) was composed of students displaying high levels of career adaptability dimensions.

Table A3. Means of indicators of career adaptability profiles

	Low	*Low confidence*	*Below average*	*Above average*	*Concern Dominant*	*High*
Concern	–1.20 (.19)	–0.24 (.11)	–0.31 (.12)	0.39 (.13)	0.64 (.07)	1.22 (.14)
Control	–1.05 (.16)	–0.41 (.14)	–0.28 (.12)	0.40 (.10)	0.49 (.11)	1.41 (.05)
Curiosity	–0.90 (.19)	–0.62 (.11)	–0.19 (.08)	0.35 (.12)	0.39 (.10)	1.38 (.08)
Confidence	–0.86 (.19)	–1.11 (.03)	–0.12 (.06)	0.54 (.11)	0.25 (.03)	1.59 (.02)

Note. Reported indices refer to the means and standard errors of profile indicators.

3.4 Antecedents of career adaptability profiles

First, when comparing a model in which the control variables were allowed to predict profile membership to a model which constrained their effects, our results showed that the impact of control variables was negligible. Second, using the R3STEP function in M*plus*, we conducted the multinomial logistic regression analyses. Overall, higher levels of emotional intelligence were consistently associated with profiles characterized by higher levels of the career adaptability dimensions. High levels of emotional intelligence were associated with a higher probability to belong to the *high* compared to the other profiles ($B = –2.96$, $p < .001$, $B = –2.08$, $p < .001$, $B = –1.82$, $p < .001$, $B = –1.77$, $p < .001$, and $B = –0.96$, $p < .05$, for the *low*, *low confidence*, *below average*, *above average*, and *concern dominant* profiles, respectively). Similar results were found for the *concern dominant* profiles compared to the other profiles ($B = –2.00$, $p < .001$, $B = –1.12$, $p < .01$, $B = –0.86$, $p < .01$, $B = –0.81$, $p < .01$, for the *low*, *low confidence*, *below average*, and *above average* profiles, respectively). High levels of emotional intelligence were associated with a higher probability to belong to the *below average* and *above average* profile compared to the *low* profile ($B = –1.15$, $p < .01$ and $B = –1.19$, $p < .01$, respectively). However, no significant effects were found between the *above average* profile and the *low confidence*. In addition, no significant effects were neither found between the *low confidence* and the *below average* profiles, nor between the *low* and the *low confidence* profiles. Emotional intelligence also discriminated profiles with rather high levels of career adaptability but with varying patterns (i.e., the *above average* and *concern dominant* profiles). However, emotional intelligence did not differentiate profiles with low levels of career adaptability but with different patterns (e.g., *below average*, *low*, and *low confidence* profiles). Overall, these results brought support for Hypothesis 1.

Table A4. Differences of outcomes between career adaptability profiles

	Low	Low confidence	Below average	Above average	Concern dominant	High	Overall χ^2
Positive anticipatory emotions	$-1.09_{a,b,c,d,e}$	$-0.19_{a,b,c,e}$	$-0.35_{a,b,c,d}$	0.50_{c}	0.55_{b}	0.83_{a}	167.51***
Negative anticipatory emotions	0.16	0.02	−0.08	0.21_{b}	-0.23_{b}	−0.29	7.76
Career decision-making self-efficacy	$-1.17_{a,b,c,d,e}$	$-0.23_{a,b,c,e}$	$-0.30_{a,b,c,d}$	$0.31_{a,b,c}$	0.74_{b}	1.11_{a}	267.52***

Note. Overall chi-square tests were performed with 5 degrees of freedom. Subscripts indicate significant differences between profiles at the .05 level. Subscripts from *a* to *e* refer to significant pairwise comparisons with the High, Concern Dominant, Above average, Below average, and Low confidence, respectively.

3.5 Outcomes of career adaptability profiles

Differences between profiles in terms of anticipatory emotions and career decision-making self-efficacy were performed using the BCH function in M*plus.* Results are displayed in Table A4 and graphically represented in Figure A2. Significant differences between career adaptability profiles could be found for positive anticipatory emotions and career decision-making self-efficacy. However, no significant differences were found between profiles with regards to negative anticipatory emotions. Overall, profiles with higher levels of career adaptability dimensions displayed higher levels of positive anticipatory emotions and career decision-making self-efficacy. However, profiles displaying similar levels of career-adaptabilities but with different shape hardly displayed significant differences. For example, while the *low* profile displayed much lower levels of career adaptability and career decision-making self-efficacy compared to the *low confidence* and the *below average* profiles, these two last profiles did not statistically differ. A similar pattern was found for the profiles displaying higher mean levels of career adaptability but with varying shapes (i.e., the *below average, concern dominant,* and *high* profiles). These results supported our third hypothesis and partially our second hypothesis.

4. Discussion

The objectives of the present study were to investigate career adaptability profiles using a person-centered approach and examine their relations with emotional intelligence, anticipatory emotions at the prospect of the school-to-work transition, and career decision-making self-efficacy in a sample of university students in Belgium. In doing so, we sought to replicate Hirschi and Valero's (2015) findings and extend the investigation of antecedents and outcomes to emotional processes in a different national and educational context. The present paper therefore aimed to expand existing knowledge pertaining to the profiles of career adaptability within the career construction model of adaptation. Due to the rather exploratory and inductive nature of person-centered approaches, such endeavors are important in order to ascertain that profiles are useful for practice and interventions (Hofmans et al., 2020; Spurk et al., 2020). The present study also aimed to address previous calls for

the inclusion of emotional processes in career development whose importance is stressed out in stressful and emotional career events such as the school-to-work transition.

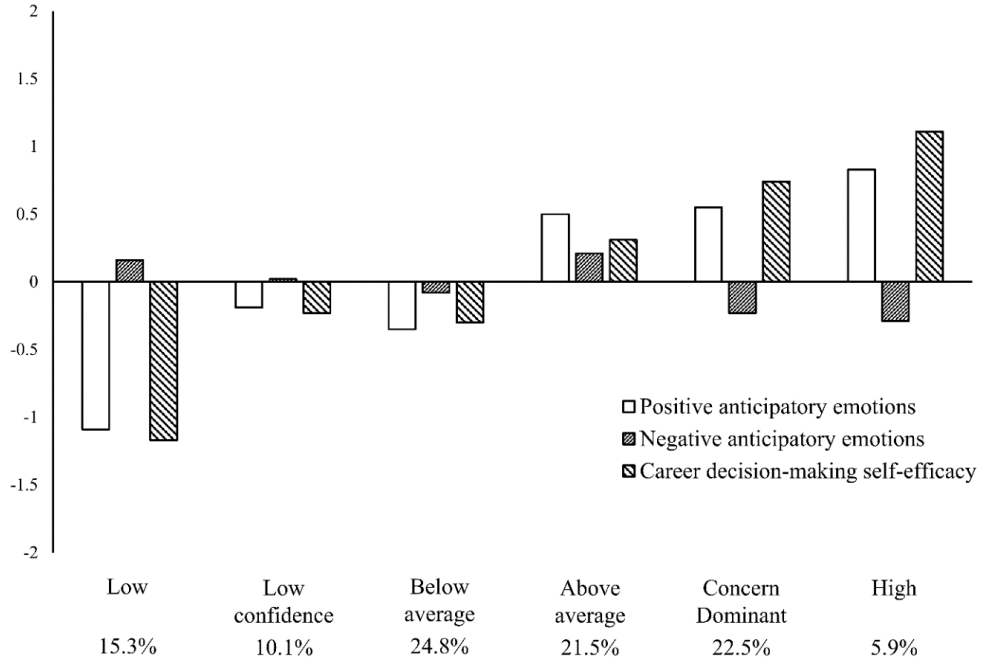


Figure A2. Outcomes for the final 6-profile solution of career adaptability

First, our results yielded six distinct and meaningful career adaptability profiles. Three profiles encompassed rather low levels of career adaptability, and, together, were composed of the half of the sample. The *low* profile described students that displayed low levels on all dimensions. The *low confidence* profile displayed low levels on all dimensions but specifically on the confidence dimension. The *below average* profile was composed of almost a quarter of the total sample with levels on all dimensions somewhat below average. The other three profiles exhibited students with rather high levels of career adaptability. Two profiles displayed moderately high levels of career adaptability but were qualitatively differentiated especially with regards to the concern dimension. The last profile was the smallest and encompassed students that had higher levels on all dimensions. Finally, these profiles were found to be similar in number, in shape, within-person variance, and size among bachelor and master students. These results are partially consistent with Hirschi and Valero's (2015) findings as our results yielded a 6-profile solution, instead of a 5-profile solution. However, most profiles were differentiated upon their level (the *low*, *above average*, and *high* profiles), which is consistent with Hirschi and Valero (2015). Having said that, several differences between Hirschi and Valero's study and ours are noteworthy with regards to the sample (e.g., different country, different educational context, sample size) and analytical procedure (e.g., operationalization of the indicators, underlying assumptions, fit statistics) that could potentially account for the differences between the two studies. Still, we did

observe the emergence of two qualitatively differentiated profiles: the *low confidence* and the *concern dominant* profiles. The emergence of profiles that display qualitative different patterns in terms of shape is critical and suggest that level does not always dominate the investigation of career adaptability profiles. In addition, while profile sizes were relatively similar for the *low* and *below average*, the proportion of students in the *high* profile was smaller in our study (5%) compared to Hirschi and Valero's (2015) study (15%). While we agree with Hirschi and Valero's (2015) conclusions that level effects are generally predominant, our results bring more nuance with regards to this important issue and provide evidence that, in specific contexts, shape differences may occur. Especially, these two qualitatively distinct profiles accounted for approximately a third of our sample and emerged early in the enumeration process, precluding the emergence of spurious profiles due to violations of the model's distributional assumptions (Bauer & Curran, 2003). Actually, the present study sheds light on the complementariness of both approaches in that they provide distinct but equally useful information to the study of career adaptability (Collins & Lanza, 2010). As such, the reliance on either a variable- or a person-centered approach is directly dependent upon the research question or the practical issue at hand (Hofmans et al., 2020). When adopting a variable-centered approach, one is able to study the relations, on average, between career adaptability and key covariates, establishing these relations for the entire sample. The person-centered approach is well suited to bring nuance in these relationships and investigate whether subpopulations with distinct patterns of these relations exist.

Emotional intelligence was found to be a strong and consistent predictor of profile membership. As hypothesized, individuals with higher levels of emotional intelligence had a higher probability to belong to profiles with higher levels of career adaptability. Interestingly, not only emotional intelligence differentiated profile membership between profiles with varying *levels* of career adaptability but emotional intelligence also differentiated profiles with varying *shapes* of career adaptability dimensions. Actually, this was only true for profiles with high levels of career adaptability as high levels of emotional intelligence was associated with a higher probability to belong to the *concern dominant* compared to the *above average* profile. However, emotional intelligence did not predict differences in profile membership between the *low confidence* and the *above average* or the *low* profile. Importantly, the examination of predictors of profile membership is of great importance in order to address the construct validity of the profiles and show that they reflect substantial and valid different populations (Hofmans et al., 2020). Nonetheless, these results are largely in line with previous research highlighting the predictive effect of emotional intelligence on career adaptability in cross-sectional and longitudinal studies (Celik & Storme, 2017; Coetzee & Harry, 2014; Parmentier et al., 2019; Udayar et al., 2018). This suggests that disposing of a high level of general adaptive functioning, particularly in emotional situations, stimulates the use and the development of career adapt-abilities.

The examination of differences between profiles with regards to anticipatory emotions at the prospect of the school-to-work transition and career decision-making self-efficacy also brought critical insights. Consistent with our hypotheses, we found significant differences with regard to positive anticipatory emotions and career decision-making self-efficacy.

Profiles with higher levels of career adaptability displayed consistently higher levels on these two variables. Contrary to the effects found for emotional intelligence, the impact on outcomes was mainly an effect of the *levels* as results failed to distinguish profiles with similar levels of career adaptability but varying shapes (i.e., the *above average* and *concern dominant* profiles or the *low confidence* and *below average* profiles). This is nonetheless consistent with previous research highlighting the positive impact of career adaptability on positive future-oriented affect and career decision-making self-efficacy (Rudolph et al., 2017). Surprisingly, no significant differences were found for negative anticipatory emotions. This is rather inconsistent with existing evidence showing the important protective role that career adaptability plays with regards to career anxiety or negative affect. Additional research efforts are certainly needed to disentangle this pattern of results as these previous studies offer only limited value as they mainly relied on trait and dispositional approaches to affective processes in career development.

4.1 Limitations and future directions

The present study is not without limitations. First, we relied on a cross-sectional design, limiting our ability to make any inferences about the causal relations between the antecedents and outcomes of career adaptability profiles. Future research could focus on longitudinal studies in order to better investigate the temporal precedence between the variables of interest and further address the construct validity and replicability of career adaptability profiles (Morin et al., 2018). Second, our sample was mainly composed of women, limiting our ability to generalize our findings to other samples or populations. This issue should especially be addressed as the samples used in Hirschi and Valero's (2015) studies shared similar sample characteristics. Replication efforts could bring additional support for the profiles found in these studies. Third, our sample size may be considered as small with regards to latent profile analyses standards (Tein et al., 2013). This issue would be important to address in subsequent replication efforts.

4.2 Practical implications

Besides the theoretical contributions brought about by the present study, several implications for practice could be raised. Differentiating profiles of career adaptability provides a more realistic representation that goes beyond the impact of a single construct and is useful for the development of typologies which can be used for counseling and interventions. Actually, the classification into career adaptability typologies is appealing for counselors and naturally aligned to their efforts to tailor their interventions based on the type of client they are trying to help (Hofmans et al., 2020). Our study highlights, for example, that counselors should pay attention to students showing profiles with low levels on the four career adaptability dimensions and profiles with low level on one specific dimension (e.g., *low confidence*), as they represented a quarter of the entire sample. Following Savickas (2013), a lack of career confidence, for example, can lead to career inhibition and threaten the ability for students to achieve career goals. With students in the *low confidence* profile, counselors are invited to primarily focus on improving clients' confidence and self-esteem

through emotional support, but also the engagement in activities whose successful attainment will strengthen their sources of self-efficacy and confidence. Finally, emotional intelligence and career adaptability have been demonstrated as reflecting malleable self-regulatory processes that can be taught and improved (Hodzic et al., 2018; Koen et al., 2012). Our findings thus offer important avenues in the development and the use of tailor-made interventions specifically designed to increase both global levels of career adaptability alongside with its specific dimensions.

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Appendix B

Supplementary materials for Chapter 4

Examining the impact of emotional intelligence on career adaptability

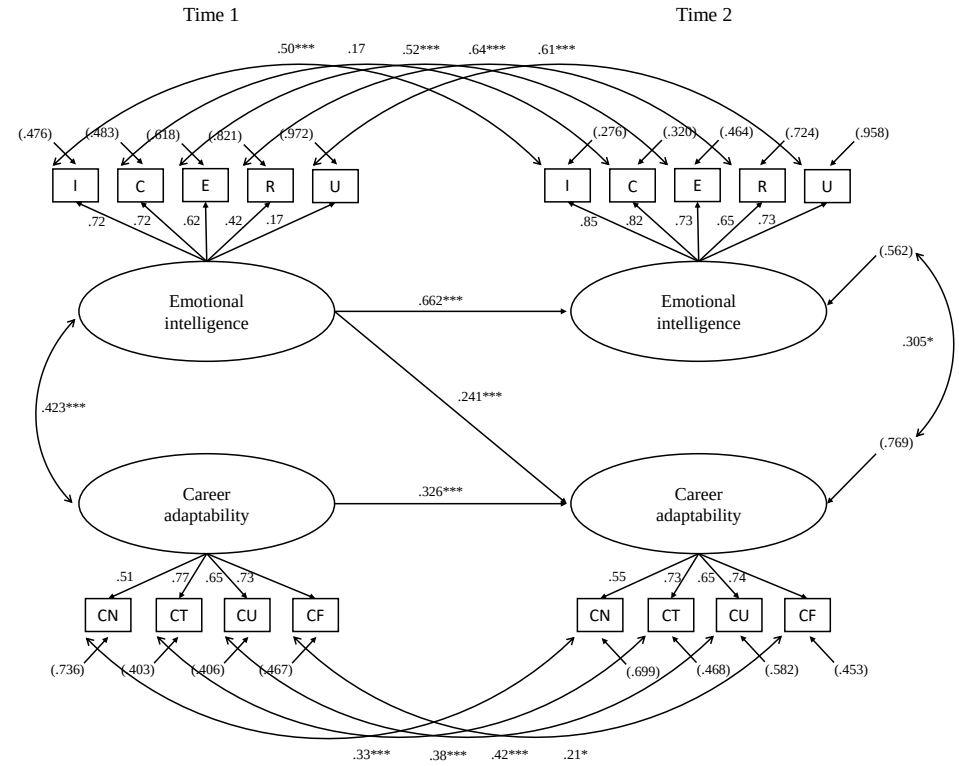


Figure B1. Full cross-lagged model depicting the relationships between emotional intelligence and career adaptability of the causality model. * p < .05. *** p < .001. I = identification, C = comprehension, E = expression, R = regulation, U= utilization, CN = concern, CT = control, CU = curiosity, CF = confidence.

Appendix C

Supplementary materials for Chapter 5

One step beyond emotional intelligence measurement in the career development of adult learners

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Table C1. Descriptive statistics for each item

Table C2. Standardized factor loadings and items residuals for H–CFA solution

Table C3. Standardized factor correlations for the H-CFA solution

Table C4. Standardized factor loadings and items residuals for CFA solution

Table C5. Standardized factor loadings and items residuals for ESEM solution

Table C6. Standardized factor loadings and items residuals for bifactor–CFA solution

Table C7. Psychometric indices for bifactor–CFA

Table C8. Psychometric indices for bifactor–ESEM

Table C9. Psychometric indices for bifactor models and their cut-off values

Table C10. Factor correlations matrix

Appendix C11. Hypotheses between emotional intelligence and career-related outcomes

Table C1. Descriptive statistics for each item of the intrapersonal emotional subscale of the Profile of Emotional Competence (Brasseur et al., 2013)

Items	***# of items***	***M***	***SD***	***Skewness***	***Kurtosis***
A1	6	5.27	1.32	-1.00	1.32
A2	16	4.82	1.41	-.49	-.20
A3	20	4.55	1.64	-.28	-.81
A4	48	4.93	1.24	-.60	.35
A5	49	4.76	1.45	-.26	-.75
B1	1	4.61	1.76	-.23	-.95
B2	2	4.52	1.75	-.26	-1.02
B3	10	5.16	1.30	-.78	.80
B4	26	4.20	1.83	-.07	-1.11
B5	43	5.11	1.45	-.61	-.22
C1	8	4.80	1.44	-.66	-.05
C2	17	4.25	1.62	-.25	-.79
C3	25	4.28	1.70	-.10	-.92
C4	38	4.53	1.91	-.29	-1.01
C5	42	4.85	1.45	-.35	-.51
D1	12	4.03	1.57	-1.01	.75
D2	15	4.03	1.56	-.73	-.48
D3	37	4.00	1.69	.06	-.91
D4	39	4.13	1.64	-1.58	-.79
D5	50	4.07	1.49	-.46	-.42
E1	9	4.34	1.62	-.40	-.56
E2	21	4.07	1.61	-.25	-.64
E3	22	5.36	1.33	-.96	1.12
E4	24	4.57	1.49	-.45	-.11
E5	41	4.80	1.38	-.39	-.09

Note. M = mean; *SD* = standard error. A = identification, B = comprehension, C = expression, D = regulation, E = utilization.

Table C2. Standardized factor loadings (λ) and item residuals (δ) for H-CFA solution

Items	# of items	λ					δ
		Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	
1. Identification							.80***
Item A1	6	**.43*** **					.56***
Item A2	16	**.65*** **					.80***
Item A3	20	**.45*** **					.63***
Item A4	48	**.60*** **					.37***
Item A5	49	**.81*** **					
ω		**.73**					
2. Comprehension							.26***
Item B1	1		**.43*** **				.22***
Item B2	2		**.65*** **				.93***
Item B3	10		**.45*** **				.69***
Item B4	26		**.60*** **				.62***
Item B5	43		**.81*** **				
ω			**.73**				
3. Expression							.50***
Item C1	8			**.69*** **			.79***
Item C2	17			**.45*** **			.52***
Item C3	25			**.71*** **			.79***
Item C4	38			**.48*** **			.85***
Item C5	42			**.40*** **			
ω				**.68**			
4. Regulation							.43***
Item D1	12				**.76*** **		.49***
Item D2	15				**.72*** **		.68***
Item D3	37				**.55*** **		.48***
Item D4	39				**.72*** **		.88***
Item D5	50				**.35*** **		
ω					**.76**		
5. Utilization							.84***
Item E1	9					**.40*** **	.54***
Item E2	21					**.69*** **	.77***
Item E3	22					**.47*** **	.41***
Item E4	24					**.77*** **	.45***
Item E5	41					**.74*** **	
ω						**.76**	
6. Emotional intelligence							
Identification	–	**.97*** **					.05
Comprehension	–		**.73*** **				.47***
Expression	–			**.81*** **			.34***
Regulation	–				**.50*** **		.75***
Utilization	–					**.10**	.99***
ω		**.93**					

Note. *** $p < 0.001$

Table C3. Standardized factor correlations for the H-CFA solution

	1	2	3	4	5
1. Identification	–				
2. Comprehension	.71***	–			
3. Expression	.79***	.59***	–		
4. Regulation	.49***	.37***	.27***	–	
5. Utilization	.10	.08	–.01	–.09	–
6. Emotional intelligence	.97***	.73***	.81***	.50***	.01

Note.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.

Table C4. Standardized factor loadings (λ) and item residuals (δ) for the CFA solution

Items	# of items	λ Factor 1	λ Factor 2	λ Factor 3	λ Factor 4	λ Factor 5	δ
1. Identification							.80***
Item A1	6	**.45*** **					.56***
Item A2	16	**.66*** **					.80***
Item A3	20	**.44*** **					.63***
Item A4	48	**.61*** **					.37***
Item A5	49	**.79*** **					
ω		**.73**					
2. Comprehension							.26***
Item B1	1		**.86*** **				.22***
Item B2	2		**.88*** **				.93***
Item B3	10		**.26*** **				.69***
Item B4	26		**.56*** **				.62***
Item B5	43		**.62*** **				
ω			**.79**				
3. Expression							.50***
Item C1	8			**.71*** **			.79***
Item C2	17			**.46*** **			.52***
Item C3	25			**.69*** **			.79***
Item C4	38			**.46*** **			.85***
Item C5	42			**.39*** **			
ω				**.68**			
4. Regulation							.43***
Item D1	12				**.75*** **		.49***
Item D2	15				**.71*** **		.68***
Item D3	37				**.57*** **		.48***
Item D4	39				**.72*** **		.88***
Item D5	50				**.35*** **		
ω					**.76**		
5. Utilization							.84***
Item E1	9					**.41*** **	.54***
Item E2	21					**.67*** **	.77***
Item E3	22					**.48*** **	.41***
Item E4	24					**.77*** **	.45***
Item E5	41					**.74*** **	
ω						**.76**	

Note. *** $p < 0.001$

Table C5. Standardized factor loadings (λ) and item residuals (δ) for ESEM solution

Items	# of items	λ					δ
		Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	
1. Identification							
Item A1	6	**.53*** **	–.04	.02	.02	.17***	.64***
Item A2	16	**.43*** **	*.17***	.12*	.14**	.13**	.54***
Item A3	20	**.25*** **	.10	.18**	.07	–.11*	.79***
Item A4	48	**.61*** **	*.09**	.07	–.06	.06	.54***
Item A5	49	**.48*** **	*.34***	.21***	<.01	–.12**	.35***
ω		**.65**					
2. Comprehension							
Item B1	1	–.01	**.95*** **	–.12***	–.01	.06*	.20***
Item B2	2	–.01	**.91*** **	–.05	–.03	.01	.20***
Item B3	10	*.49***	**.07**	–.05	.01	.17***	.68***
Item B4	26	.16**	**.28*** **	*.33***	.07	–.14**	.56***
Item B5	43	.23***	**.41*** **	.15**	.05	–.03	.57***
ω			**.76**				
3. Expression							
Item C1	8	*.42***	–.01	**.32*** **	.15***	.07	.52***
Item C2	17	.08	.02	**.24*** **	.33***	.08	.74***
Item C3	25	.09	.04	**.68*** **	.04	–.05	.43***
Item C4	38	–.05	*–.10**	**.71*** **	–.10**	.16***	.56***
Item C5	42	–.13*	*.19***	**.34*** **	.12*	.04	.79***
ω				**.63**			
Regulation							
Item D1	12	–.05	.06	–.14***	**.82*** **	.01	.36***
Item D2	15	.01	*–.08*	.05	**.71*** **	–.04	.50***
Item D3	37	.07	***.25****	.22***	**.33*** **	–.18***	.55***
Item D4	39	–.11*	–.07	.15**	**.76*** **	.00	.42***
Item D5	50	.07	*.11**	–.07	**.32*** **	.09	.82***
ω					**.76**		
Utilization							
Item E1	9	–.24***	.09	.22***	–.29***	**.45*** **	.68***
Item E2	21	–.14***	.07	.03	.08*	**.75*** **	.48***
Item E3	22	*.30****	–.05	.03	–.01	**.40*** **	.70***
Item E4	24	.08	*–.07**	.01	.04	**.74*** **	.42***
Item E5	41	.09*	.04	–.01	–.01	**.71*** **	.46***
ω						**.77**	

Note. Loadings of items on their target factor(s) are in bold. Three items have a non-target factor loading (underscored) which is higher than their target loadings. For each factor, significant non-target loadings which are higher than at least one target loadings are in italic.
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$

Table C6. Standardized factor loadings (λ), item residuals (δ) and psychometric indices for bifactor-CFA solution

Items		λ						δ	I-ECV
	# of items	General factor	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5		
1. Identification									
Item A1	6	**.38*** **	**.19**					.82***	.80
Item A2	16	**.60*** **	**.24**					.59***	.86
Item A3	20	**.46*** **	**.01**					.78***	.99
Item A4	48	**.49** **	**.83***					.07	.26
Item A5	49	**.80*** **	**.12****					.34***	.98
2. Comprehension									
Item B1	1	**.58*** **		**.75*** **				.10	.38
Item B2	2	**.63*** **		**.58*** **				.27*	.54
Item B3	10	**.37*** **		**-.04**				.86***	.99
Item B4	26	**.65*** **		**.04**				.57***	.99
Item B5	43	**.70*** **		**.15****				.54***	.95
3. Expression									
Item C1	8	**.59*** **			**.24*** **			.50****	.86
Item C2	17	**.41*** **			**.11**			.82***	.94
Item C3	25	**.56*** **			**.56*** **			.37***	.50
Item C4	38	**.28*** **			**.58*** **			.58***	.19
Item C5	42	**.36*** **			**.17****			.84***	.81
4. Regulation									
Item D1	12	**.32*** **				**.73*** **		.37***	.16
Item D2	15	**.35*** **				**.63*** **		.48***	.23
Item D3	37	**.59*** **				**.26*** **		.58***	.84
Item D4	39	**.35*** **				**.63*** **		.48***	.23
Item D5	50	**.28*** **				**.25*** **		.88***	.50
5. Utilization									
Item E1	9	**–.10***					**.40*** **	.83***	.06
Item E2	21	**.00**					**.69*** **	.53***	.00
Item E3	22	**.19*** **					**.46*** **	.75***	.14
Item E4	24	**–.03**					**.77*** **	.40***	.00
Item E5	41	**.07**					**.25*** **	.46***	.01

Note.
* $p < 0.05$.
** $p < 0.01$.
***$p < 0.001$.

Table C7. Psychometric indices for bifactor-CFA

	General factor	Identification	Comprehension	Expression	Regulation	Utilization
ω/ω_S	.89	.78	.82	.70	.78	.76
ω_H/ω_{HS}	.73	.16	.17	.26	.50	.76
Relative ω	.81	.21	.21	.36	.64	.99
ECV	.47	.07	.08	.07	.13	.18
PUC	.83	–	–	–	–	–

Note. ω = omega; ω_S = omega subscale; ω_H omega hierarchical; ω_{HS} omega hierarchical subscale; ECV = explained common variance; PUC = percentage of uncontaminated correlations.

Table C8. Psychometric indices for bifactor-ESEM

	General factor	Identification	Comprehension	Expression	Regulation	Utilization
ω/ω_S	.90	.90	.90	.90	.90	.90
ω_H/ω_{HS}	.74	.00	.02	.03	.04	.07
Relative ω	.82	.00	.02	.03	.05	.08
ECV	.43	.05	.11	.08	.14	.18
PUC	.83	–	–	–	–	–

Note. ω = omega; ω_S = omega subscale; ω_H omega hierarchical; ω_{HS} omega hierarchical subscale; ECV = explained common variance; PUC = percentage of uncontaminated correlations.

Table C9. Psychometric indices for bifactor models and their cut-off values

Indices	Definition	Cut-off value
Explained common variance (ECV)	ECV is the proportion of variance explained by the general factor	>.70 supports the unidimensionality of the construct (Rodriguez et al., 2016b)
Explained common variance for specific factor (ECV-S)	ECV-S computes the strength of a specific factor relative to all explained variance of all items, even those not loading on the specific factor (Stucky & Edelen, 2015)	No empirically-derived statistical guidelines
Item-Explained common variance (I-ECV)	I-ECV is the proportion of common variance that can be ascribed to the latent general dimension alone (Stucky et al., 2013)	>.80 or .85 reflects that the item reflects the content of the general dimension (Stucky & Edelen, 2015).
Percentage of uncontaminated correlations (PUC)	PUC reflects the percentage of correlations not contaminated by multidimensionality (Rodriguez et al., 2016a).	A value >.80 reflects that the common variance can be interpreted as essentially unidimensional (Rodriguez et al., 2016a).
Omega/Omega$_S$	Omega is a factor analytic model-based reliability estimate and refers to the proportion of variance in observed total score attributable to all sources of common variance (Reise et al., 2013). For the general factor, all items are considered; for the specific factors, only items loading on that factor are computed to Omega$_S$	A value >.70 refers to a good reliability.
Omega$_H$	Omega Hierarchical reflects to the proportion of the total score variance that can be attributed to the general factor (Reise et al., 2013)	A value >.80 of total scores can be attributable to unidimensionality.
Omega$_{HS}$	Omega Hierarchical Subscale reflects the unique proportion of reliable variance of a subscale score that can attributed to the specific factor after partitioning out variability attributed of the general factor (Reise et al., 2013)	No empirically-derived statistical guidelines
Relative Omega	Relative Omega is OmegaH divided by Omega. For the general factor, it refers to the proportion of reliable variance in the multidimensional composite due to the general factor. For specific factors, relative omega represents the proportion of	No empirically-derived statistical guidelines

	reliable variance in the subscale composite that is independent of the general factor (Reise et al., 2013)	
Construct replicability (H)	H represents how well a set of items represents a latent variable (Hancock & Mueller, 2001)	A value >.80 suggests a well-defined latent variable.
Factor Determinacy (FD)	Factor determinacy is the correlation or the common variance between the factor score and the corresponding factor (Gorush, 1983, p. 260)	A value >.90 is recommended to use the factor score (Gorush, 1983, p.260)

Note. All indices can be computed with a Microsoft Excel-based tool developed by Dueber (2017). It is important to differentiate $Omega_H$ and ECV. ECV is a better index in the investigation of unidimensionality because it investigates the dimensionality of the data, that is not the case for $Omega_H$..

Table C10. Factor correlation matrix

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Gender	–														
2. Age	–.07	–													
3. Marital status	–.07	.25**	–												
4. Nb. of children	–.01	.63**	.36**	–											
5. Tenure	–.06	.78**	.24**	.47**	–										
6. Identification	–.09*	.21**	–.01	.14**	.16**	–									
7. Comprehension	–.19**	.24**	–.01	.15**	.15**	.79**	–								
8. Expression	–.06	.17**	.03	.11*	.12*	.88**	.69**	–							
9. Regulation	–.24**	.20**	.08	.17**	.08	.58**	.49**	.56**	–						
10. Utilization	.32**	.02	.01	.03	-.04	.11*	–.02	.11*	–.60	–					
11. Emotional intelligence	–.12*	.22**	.01	.15**	.15**	.98**	.85**	.92**	.64**	.08	–				
12. Emotional exhaustion	.04	.06	.02	-.01	-.01	–.35**	–.37**	–.31**	–.40**	.04	–.40**	–			
13. Work–family conflict	.04	.02	–.03	.04	.05	–.21**	–.24**	–.19**	–.22**	.03	–.25**	.60**	–		
14. Family–work conflict	.01	–.10	–.05	–.04	–.04	–.32**	–.31**	–.33**	–.28**	.06	–.38**	.27**	.28**	–	
15. Career satisfaction	.08	.15**	.04	.19**	.13*	.30**	.20**	.26**	.22**	.05	.31**	–.34**	.01	–.12*	–
M	–	31.08	–	.86	6.88	4.87	4.72	4.54	4.05	4.65	4.57	3.72	5.12	4.06	2.90
SD	–	8.67	–	1.22	7.07	.98	1.18	1.08	1.13	1.05	0.73	1.27	.97	1.51	1.51

Note. M = mean; SD = standard error; * $p < .05$; ** $p < .01$

Appendix C11. Hypotheses for the general factor of emotional intelligence and each dimension

General predictions about emotional intelligence

H1a. A high level of emotional intelligence would predict a lower level of emotional exhaustion

H1b. A high level of emotional intelligence would predict a lower level of work-family conflict

H1c. A high level of emotional intelligence would predict a lower level of family-work conflict

H1d. A high level of emotional intelligence would predict a higher level of career satisfaction

Identification of emotions

H2a. A high level of emotion identification would predict a lower level of emotional exhaustion

H2b. A high level of emotion identification would predict a lower level of work-family conflict

H2c. A high level of emotion identification would predict a lower level of family-work conflict

H2d. A high level of emotion identification would predict a higher level of career satisfaction

Comprehension of emotions

H3a. A high level of emotion comprehension would predict a lower level of emotional exhaustion

H3b. A high level of emotion comprehension would predict a lower level of work-family conflict

H3c. A high level of emotion comprehension would predict a lower level of family-work conflict

H3d. A high level of emotion comprehension would predict a higher level of career satisfaction

Expression of emotions

H4a. A high level of emotion expression would predict a lower level of emotional exhaustion

H4b. A high level of emotion expression would predict a lower level of work-family conflict

H4c. A high level of emotion expression would predict a lower level of family-work conflict

H4d. A high level of emotion expression would predict a higher level of career satisfaction

Emotion regulation

H5a. A high level of emotion regulation would predict a lower level of emotional exhaustion

H5b. A high level of emotion regulation would predict a lower level of work-family conflict

H5c. A high level of emotion regulation would predict a lower level of family-work conflict

H5d. A high level of emotion regulation would predict a higher level of career satisfaction

Appendix D

Supplementary materials for Chapter 6

Emotional intelligence profiles and job search-related outcomes in the context of the school-to-work transition

Table D1. Factor Correlation Matrix

	1	2	3	4	5	6	7	8	9	10
7. Gender	–									
8. Age	.01	–								
9. Study year	.03	.16**	–							
10. SFEA	.09**	.03	.01	–						
11. SFER	–.12**	.01	.01	.17**	–					
12. OFEA	.39**	.01	–.03	.29**	.04	–				
13. OFER	.02	.01	–.01	.25**	.17**	.56**	–			
14. Intra-JSSE	.01	.03	–.01	.19**	.10**	.16**	.21**	–		
15. Inter-JSSE	.20**	.03	–.01	.23**	.26**	.20**	.34**	.76**	–	
16. Clarity	.09**	.07**	.11**	.28**	.14**	.13**	.13**	.20**	.39**	–
Sample female students										
M	–	21.65	3.8	3.38	3.01	3.75	3.44	3.27	3.82	3.14
SD	–	4.61	.78	.66	.74	.58	.58	.68	.62	.97
Sample male students										
M	–	21.70	3.85	3.47	3.47	3.59	3.48	3.47	3.85	3.28
SD	–	6.41	.79	.69	.68	.66	.65	.61	.59	.90

Note. Gender was coded 0 = female student and 1 = male student; study year was coded 3 = third year of bachelor's degree, 4 = first year of master's degree and 5 = second year of master's degree; SFEA = self-focused emotion awareness; SFER = self-focused emotion regulation; OFEA = other-focused emotion awareness; OFER = other-focused emotion regulation; JSSE = job search self-efficacy.

** $p < .01$

Appendix E

Supplementary materials for Chapter 8

Emotional intelligence in career development: A meta-analysis

Table E1. Most frequently used emotional intelligence conceptualizations and operationalizations

Short Citation	EI Conceptualization	EI Definition	EI Dimensions	EI Dimension Definitions	Example Items
Mayer & Salovey (1990)	Ability-Emotional Intelligence (performance-based measure)	*Ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions* (Mayer & Salovey, 1990, p. 239)	Perceiving emotions	Identifying, differentiating, and expressing one's emotions	–[a]
			Using emotions	Using emotions as information to guide behaviors	–[a]
			Understanding emotions	Determine the antecedents, meanings, and consequences of emotions	–[a]
			Managing emotions	Managing one's and others' emotions to achieve a desired outcome	–[a]
Petrides, Perez-Gonzalez, & Furnham (2007)	Trait-Emotional Intelligence (self-report measure)	*The construct of trait emotional intelligence (trait EI or trait emotional self-efficacy) refers to a constellation of emotion-related self-perceptions and dispositions located at the lower levels of*	Emotionality	Reflects a wide range of emotion-related skills (e.g., perceiving and expressing emotions)	I'm usually able to influence the way other people feel

		personality hierarchies (p. 26)			
			Self-control	Reflects a healthy degree of control over urges and desires	Controlling my urges is not a big problem for me
			Sociability	Reflect positive relationships and a form of social influence	Expressing my emotions with words is not a problem for me.
			Well-being	Reflects a generalized sense of well-being	I generally don't find life enjoyable (reverse)
Bar-On (2006)	Mixed Models of Emotional Intelligence (self-report measure)	*Emotional-social intelligence is a cross-section of interrelated emotional and social competencies, skills and facilitators that determine how effectively we understand and express ourselves, understand others and relate with them, and cope with daily demands* (p. 14)	Intrapersonal competence	Self-awareness and self-expression	It's fairly easy for me to express my feelings
			Interpersonal competence	Social awareness and interpersonal relationship	I care what happens to other people
			Stress management	Emotional management and regulation	I know how to deal with upsetting problems
			Adaptability	Change management	I'm able to change old habits

			General Mood	Self-motivation	I am satisfied with my life
Mikolajczak, Kotsou, Quoidbach, & Nelis (2009)	Integrative Models of Emotional Intelligence (self-report measure)	*Individuals' differences in the extent to which individuals identify, express, understand, regulate, and use one's own and others' emotions*	Identification	Identifying and differentiating one's and others' emotions	When I feel good, I can easily tell whether it is due to being proud of myself, happy or relaxed
			Comprehension	Understanding the causes and consequences of one's and others' emotions	When I am feeling low, I easily make a link between my feelings and a situation that affected me
			Expression	Expressing one's emotions in a socially acceptable manner	I find it difficult to explain my feelings to others even if I want to (reversed)
			Regulation	Developing adaptive emotion regulation strategies	I easily manage to calm myself down after a difficult experience

			Utilization	Using one's own and others' emotions to enhance thoughts and actions	I use my feelings to improve my choices in life
Pekaar, van der Linden, Bakker, & Born (2020)	Dynamic Models of Emotional Intelligence (self-report measure)	Emotional intelligence can generally be described as the ability or knowledge to perceive, understand, and manage emotions (p. 1)	Self-focused emotion awareness	Draw one's own attention to the emotion without altering its impact	I always know how I feel
			Self-focused emotion regulation	Regulate one's own emotion to facilitate mood and social interaction	Even when I am angry, I can stay calm
			Other-focused emotion awareness	Draw attention to others' emotions without altering its impact	I am aware of the emotions of the people around me
			Other-focused emotion regulation	Regulate others' emotions to facilitate others' mood and social interaction	I can make someone else feel differently

Note. a = the ability-emotional approach is a performance-based test and does not include self-report items. EI = emotional intelligence.

1. Appendix E2. Search equation 1

"School guidance" OR "Vocational High School*" OR "Vocational Education" OR "Vocational Adjustment" OR "Reemployment" OR "Occupational Preference" OR "Occupational Adjustment" OR "Unemployment" OR "Retirement" OR "Occupational Choice" OR "Professional Development" OR "Career Development" OR "Career Change" OR "Occupational Guidance" OR "Job Search" OR "Occupational Aspirations" OR "Occupational Mobility" OR "Vocational Maturity" OR "Professional Development" OR "Career Education" OR "School to Work Transition" OR "Vocational Rehabilitation" OR "School transition" OR "School Counselor*" OR "Vocational Counselor*" OR "Career" OR "Reemploy*" OR "Occupational Preferenc*" OR "Occupational Adjustment" OR "Unemploy*" OR "Retirement" OR "Occupational Choic*" OR "Professional Develop*" OR "Career Develop*" OR "Career Chang*" OR "Occupational Guidance" OR "Job Search" OR "Occupational Aspiration*" OR "Occupational Mobilit*" OR "Vocational Maturity" OR "Career maturity" OR "Career Education" OR "School to Work Transition" OR "Vocational Rehabilitation" OR "Return to work" OR "Job reentry" OR "Career maturity" OR "Job maturity" OR "Back to work" OR "Job mobility" OR "Secondary to higher education transition*" OR "Work transition*" OR "School transition*" OR "Career transition*" OR "Job transition*" OR "Transition to retirem*" OR "Career" OR "Reemploy*" OR "Occupational Preferenc*" OR "Occupational Adjustment" OR "Unemploy*" OR "Retirement" OR "Occupational Choic*" OR "Professional Develop*" OR "Career Develop*" OR "Career Chang*" OR "Occupational Guidance" OR "Job Search" OR "Occupational Aspiration*" OR "Occupational Mobilit*" OR "Vocational Maturity" OR "Career maturity" OR "Career Education" OR "School to Work Transition" OR "Vocational Rehabilitation" OR "Return to work" OR "Job reentry" OR "Career maturity" OR "Job maturity" OR "Back to work" OR "Job mobility" OR "Secondary to higher education transition*" OR "Work transition*" OR "School transition*" OR "Career transition*" OR "Job transition*" OR "Transition to retirem*.” Finally, for capturing emotional intelligence concept, we entered the terms "Emotion Recognition" OR "Emotional Regulation" OR "Emotional Intelligence" OR "Emotional intelligence" OR "Emotion* Recognition" OR "Emotion* Regulation" OR "Emotional compet*" OR "emotional skill*" OR "Emotional abilit*" OR "Emotion* perception" OR "Emotion* identification" OR "Emotion* comprehension" OR "Emotion* understanding" OR "Emotion* management" OR "Emotion* facilitation" OR "Emotion* utilization" OR "Emotional intelligence" OR "Emotion* Recognition" OR "Emotion* Regulation" OR "Emotional compet*" OR "emotional skill*" OR "Emotional abilit*" OR "Emotion* perception" OR "Emotion* identification" OR "Emotion* comprehension" OR "Emotion* understanding" OR "Emotion* management" OR "Emotion* facilitation" OR "Emotion* utilization."

2. Appendix E3. The 49 eligible career-related outcomes that emerged from the Search equation 1

Career adaptability, career adjustment, career anchors, career aspiration, career attitudes, career barriers, career certainty, career choice, career commitment, career decision difficulties, career decision making self-efficacy, career decision-making process, career decisiveness, career engagement, career future perception, career growth, career indecision, career intentions, career interests, career longevity, career maturity, career mentality, career opportunities, career orientation, career outcome, career performance, career plateau, career preparation, career preparation behavior, career progress, career prospect, career readiness, career resilience, career satisfaction, career search self-efficacy, career stress, career success, career thoughts, employability, entrepreneurial intention, intention to pursue a career, job search attitudes, job search behaviors, job search intensity, job search self-efficacy, perceived job mobility, salary, turnover intentions, intent to leave, intention to stay and vocational interests. Based on these results, we observed that some career-related outcomes citations were underrepresented, such as entrepreneurial outcomes or turnover intentions.

3. Appendix E4. Search equation 2

((“Emotional Intelligence”) OR (“Emotional compet*”) OR (“Emotional skill*”) OR (“Emotion* abilit*”) OR (“Emotion* Recognition”) OR (“Emotion* perception”) OR (“Emotion* identification”) OR (“Emotion* comprehension”) OR (“Emotion* understanding”) OR (“Emotion* management”) OR (“Emotion* Regulation”) OR (“Emotion* facilitation”) OR (“Emotion* utilization”)) AND ((“career outcome*”) OR (“career preparation*”) OR (“career adaptabilit*”) OR (“career readiness”) OR (“career certaint*”) OR (“career resilienc*”) OR (“career maturity”) OR (“career adjustment”) OR (“career opportunit*”) OR (“perceived job mobilit*”) OR (“job mobilit*”) OR (“career performance”) OR (“career success*”) OR (“career satisfaction*”) OR (“salar*”) OR (“career progress”) OR (“career growth*”) OR (“vocational interest*”) OR (“career interest*”) OR (“career future perception”) OR (“career orientation”) OR (“career mentalit*”) OR (“career thought*”) OR (“career aspiration*”) OR (“career commitment”) OR (“career interest*”) OR (“career engagement”) OR (“career decision*”) OR (“career decision-making”) OR (“career decision making”) OR (“career decision-making difficult*”) OR (“career decision making difficult*”) OR (“career decision-making self-efficacy”) OR (“career decision-making self-efficacy”) OR (“career decision self-efficacy”) OR (“career decisiveness”) OR (“career indecisiveness”) OR (“career search self-efficacy”) OR (“career indecision*”) OR (“career choice*”) OR (“turnover”) OR (“turnover intention*”) OR (“intention* to quit”) OR (“intention* to stay”) OR (“withdrawal intention*”) OR (“intention* to leave”) OR (“intent* to pursue”) OR (“job search”) OR (“job search attitude*”) OR (“job search self-efficacy”) OR (“job search behavior*”) OR (“career search*”) OR (“career preparation behavior*”) OR (“job search intensity”) OR (“entrepreneurial intention*”) OR (“entrepreneurial”) OR (“entrepreneurial intent*”) OR (“entrepreneurship*”) OR (“intent* to start”) OR (“career

attitude*") OR ("career plateau*") OR ("career barrier*") OR ("career prospect*") OR ("career longevit*") OR ("career anchor*") OR ("employabilit*")).

4. Appendix E5. Meta-analytic regression models

The second main objective of the present meta-analysis was to investigate the presence of moderators that may affect the results of the current correlation effect sizes. We thus performed, when the information was available, a set of meta-regressions to examine the effect of four moderators: (1) the mean age, (3) the proportion of female participants, (3) the sample type (i.e., students vs. workers), and (4) the publication type (i.e., published vs. unpublished).

4.1 Career adaptability

Age did not moderate the relationship between career adaptability and emotional intelligence (B = –.003, SE = .007, p = .701). Moreover, female participants proportion did not moderate the relationship between career adaptability and emotional intelligence (B = .001, SE = .001, p = .594). In the same vein, sample type did not moderate the relationship between career adaptability and emotional intelligence (B = .019, SE = .020, p = .707). Finally, publication did not seem to moderate the correlation effect size (B = .106, SE = .115, p = .353). It is important to note that only one citation was unpublished.

4.2 Career commitment

Age did not moderate the relationship between career commitment and emotional intelligence (B = –.003, SE = .006, p = .619). Female participants proportion did not moderate the relationship between career adaptability and emotional intelligence (B = –.001, SE = .002, p = .927). In the same vein, sample type did not moderate the relationship between career adaptability and emotional intelligence (B = –.098, SE = –.627, p = .537). Publication type was not tested as a moderator as all citations were published studies.

4.3 Career decision processes

Age did not moderate the relationship between career decision-making difficulties and emotional intelligence (B = –.005, SE = .022, p = .813). Female participants proportion positively moderate the relationship between career decision making difficulties and emotional intelligence (B = .008, SE = .003, p < .01). It thus indicated that a higher percentage of female participants related to higher effect size. In the same vein, sample type moderated the relationship between career decision-making difficulties and emotional intelligence (B = .290, SE = .145, p < .05). It thus indicated that a higher level of students related to higher effect size. Finally, publication did not seem to moderate the correlation effect size (B = .092, SE = .186, p = .618).

Regarding the second career decision process, age did not moderate the relationship between career decision self-efficacy and emotional intelligence (B = –.082, SE = .075, p =

.276). Female participants proportion did not moderate the relationship between emotional intelligence and career decision self-efficacy (*B* = –.001, *SE* = .002, *p* = .956). In the same vein, publication type did not affect the relationship between emotional intelligence and career decision self-efficacy (*B* = –.082, *SE* = .075, *p* = .276). Sample type was not tested as a moderator as all citations realized their studies among students.

4.4 Career success

Age positively moderated the relationship between salary and emotional intelligence (*B* = .009, *SE* = .004, *p* < .05). In other words, higher mean age was associated with a higher effect size. In contrast, female participants proportion did not moderate the relationship between career adaptability and emotional intelligence (*B* = .006, *SE* = .007, p = .389). The publication and sample types were not tested as moderators as all citations were published studies realized among worker participants.

Regarding the link between career satisfaction and emotional intelligence, age did not moderate the relationship (*B* = .001, *SE* = .005, *p* = .928). Female participants proportion did not moderate the relationship between career satisfaction and emotional intelligence (*B* = –.001, *SE* = .002, *p* = .394). In the same vein, publication type did not moderate the relationship between career satisfaction and emotional intelligence (*B* = .005, *SE* = .090, *p* = .954). Sample type was not tested as a moderator as all participants were workers.

4.5 Self-perceived employability

Age did not moderate the relationship between self-perceived employability and emotional intelligence (*B* = –.008, *SE* = .028, *p* = .771). In contrast, female participants proportion moderated the relationship between career satisfaction and emotional intelligence (*B* = –.013, *SE* = .004, *p* < .01). It thus indicated that a higher percentage of female participants related to smaller effect size. Sample type did not moderate the relationship between self-perceived employability and emotional intelligence (*B* = .031, SE = .385, *p* = .935) as well as publication type (*B* = –.051, *SE* = .385, *p* = .935).

4.6 Entrepreneurship

Female participants proportion did not moderate the relationship between entrepreneurial self-efficacy and emotional intelligence (*B* = –.004, *SE* = .005, *p* = .451). In the same vein, publication type did not moderate the relationship between entrepreneurial self-efficacy and emotional intelligence (*B* = –.090, *SE* = .116, *p* = .436). Age was not tested as a moderator as the number of studies reporting mean age was less than three. In parallel, sample type was not tested as moderator as samples were only composed of student participants.

Regarding the relationship between entrepreneurial intentions and emotional intelligence, age did not influence the effect size (*B* = –.017, *SE* = .018 *p* = .352). however, female participants proportion moderate the relationship between entrepreneurial intentions and emotional intelligence (*B* = –.006, *SE* = .003 *p* = .018). In other words, It thus indicated that a higher percentage of female participants related to smaller effect size. However, no

moderating effects were found for sample type (B = –.093, SE = .159, p = .557), and publication type (B = .061, SE = .150, p = .682).

4.7 Job search self-efficacy

Age did not influence the relationship between job search self-efficacy and emotional intelligence (B = .015, SE = .026, p = .565). We drew the same conclusions for female participants proportion (B = –.013, SE = .010, p = .184), sample type (B = .466, SE = .302, p = .123), and publication type (B = –.208, SE = .386, p = .591).

4.8 Turnover intentions

Age did not influence the relationship between turnover intentions and emotional intelligence (B = –.001, SE = .005, p = .801). We draw the same conclusions for female participants proportion (B = –.001, SE = .001, p = .879), and publication type (B = –.053, SE = .076, p = .486). Sample type was not tested as a moderator as all participants were workers.

5. Appendix E6. Additional sensitivity analyses using cumulative meta-analysis

Regarding career adaptability, the cumulative meta-analysis included a total of 12 studies. The study comprising the higher sample size reported a correlation of r = .550 [95% CI: .559; .684], whereas the last overall cumulative correlation effect size was r = .503 [95% CI: .518; .619]. Hence, no significant publication bias seemed to be present.

For career commitment, the cumulative meta-analysis included 12 studies. The correlation of the most precise study was r = .280 [95% CI: .239; .439], whereas the last overall cumulative correlation effect size was r = .257 [95% CI: .218; .405]. Hence, no significant publication bias seemed to be present.

Likewise, the total number of studies for career decision self-efficacy was 23. The correlation of the most precise study was r = .345 [95% CI: .329; .466], whereas the last overall cumulative correlation effect size was r = .469 [95% CI: .471; .608]. Hence, no significant publication bias seemed to be present.

For career decision difficulties, the cumulative meta-analysis included 9 studies. The correlation of the most precise study was r = –.390 [95% CI: –.522; –.351], whereas the last overall cumulative correlation effect size was r = –.415 [95% CI: –.594; –688]. Hence, no significant publication bias seemed to be present.

Regarding objective career success (i.e., salary), the cumulative meta-analysis included 7 studies. The correlation of the most precise study was r = .260 [95% CI: .207; .345], whereas the last overall cumulative correlation effect size was r = .183 [95% CI: .100; .288]. Hence, no significant publication bias seemed to be present.

In parallel, the cumulative meta-analysis investigating subjective career success (i.e., career satisfaction) included 20 studies. The correlation of the most precise study was *r* = .230 [95% CI: .181; .353], whereas the last overall cumulative correlation effect size was *r* = .354 [95% CI: .340; .482]. Hence, no significant publication bias seemed to be present.

Regarding self-perceived employability, the cumulative meta-analysis included 4 studies. The correlation of the most precise study was *r* = –.290 [95% CI: .–.438; –.260], whereas the last overall cumulative correlation effect size was *r* = .032 [95% CI: .–.550; .626]. These results thus indicated an important publication bias. It is not surprising given that one study reported a negative correlation coefficient compared to the three other studies.

For entrepreneurial self-efficacy, the cumulative meta-analysis included 6 studies. The correlation of the most precise study was *r* = .369 [95% CI: .353; .495], whereas the last overall cumulative correlation effect size was *r* = .334 [95% CI: .240; .527]. Hence, no significant publication bias seemed to be present.

In the same vein, the total number of studies performed on the cumulative meta-analysis investigating entrepreneurship intentions was 18. The correlation of the most precise study was *r* = .393 [95% CI: .386; .526], whereas the last overall cumulative correlation effect size was *r* = .314 [95% CI: .239; .489]. Hence, no significant publication bias seemed to be present.

For job search self-efficacy, the cumulative meta-analysis included 5 studies. The correlation of the most precise study was *r* = .280 [95% CI: .276; .380], whereas the last overall cumulative correlation effect size was *r* = .199 [95% CI: –.175; .642]. Although the change in correlation coefficient was not considered problematic, we observed a negative change with regard to the confidence interval, which suggests a significant bias. As for self-perceived employability, one citation reported a negative correlation that contrasted with other citations.

Finally, turnover intentions variable included 32 studies in the cumulative meta-analysis. The correlation of the most precise study was *r* = –.018 [95% CI: –.077; .035], whereas the last overall cumulative correlation effect size was *r* = –.192 [95% CI: –.284; –.155]. Hence, no significant publication bias seemed to be present.

6. Appendix E7. References of the citations included in the meta-analysis

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