"Career Adaptability Profiles and Their Relations With Emotional and Decision-Making Correlates Among Belgian Undergraduate Students"

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ABSTRACT

This 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 six distinct profiles of career adaptability among 307 university students who differed both on their level and on 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.

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Career Adaptability Profiles and their Relations with Emotional and Decision-Making Correlates among Belgian Undergraduates Students

Abstract

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.

Keywords: career adaptability, emotional intelligence, anticipatory emotions, career decisionmaking self-efficacy, latent profile analysis

1 Emerging adulthood is a particularly crucial phase in individuals' career development 2 (Porfeli & Lee, 2012). For undergraduate students, career development tasks include the 3 crystallization of career goals, the commitment to a career choice, and the active preparation 4 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 5 6 them to navigate an ever more insecure and turbulent world of work (Koen et al., 2012). 7 Within the career construction literature, these capabilities have been referred to as career 8 adaptability (Savickas, 2013). The construct of career adaptability has gained increasing 9 attention in recent years. It has been defined as a "psychosocial construct that denotes an 10 individual's resources for coping with current and anticipated tasks, transitions, and traumas 11 in their occupational roles" (Savickas & Porfeli, 2012, p. 662). Building on the career 12 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., 13 14 adaptation results) of career adaptability (Hirschi et al., 2015; Rudolph et al., 2017). Even 15 though a vast amount of research insights has been gathered over the years, the study of 16 career adaptability has heavily relied on variable-centered approaches and has overlooked the 17 possibility that individuals may not only differ in their *mean* levels of career adaptability but 18 also in the specific combinations of career adaptability dimensions (i.e., concern, control, 19 curiosity, and confidence; Hirschi & Valero, 2015). These emerging approaches have been 20 referred to as person-centered and provide promising avenues for a complementary and more 21 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-22 23 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 24

25 (i.e., adapting). In their first sample, they found that profiles were mostly differentiated upon

26 their level (low vs. high levels of career adaptability dimensions) rather than their shape 27 (qualitative distinct combinations among career adaptability dimensions), except for a small 28 helpless-passive profile. This latter profile was characterized by very low levels of control 29 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, 30 31 above average, and high career adaptability). In both studies, they demonstrated that personality factors influenced profile membership and that profiles displaying higher levels 32 33 of career adaptability tended to report higher levels of career planning and exploration. 34 Hirschi and Valero (2015) concluded "that levels effects dominate shape effects in latent career adaptability profiles" and, therefore, "that researchers can rightfully examine career 35 36 adaptability using a variable-centered approach" (p. 227). However, the replication of profiles 37 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 38 39 light on the (in-)adequacy of person-centered approaches as well as their complementariness 40 with variable-centered methods when studying important vocational processes (Hofmans et 41 al., 2020; Spurk et al., 2020). Given that person-centered approaches are rather exploratory in 42 nature and highly sample-dependent, Morin et al. (2018) proposed the following steps to 43 address the construct validity of profiles and their generalizability: (1) demonstrating their theoretical value, (2) demonstrating meaningful relations with key covariates, and (3) 44 45 replicating profile solutions across samples and across time. Investigating the construct validity and their generalizability to different samples is not only important for theoretical 46 purposes but also for practice in order to confirm their rightful use in identifying at-risk 47 48 students as well as designing and implementing tailored interventions among university 49 students (Koen et al., 2012).

4

50 The objectives of the present study were threefold. First, we sought to replicate 51 Hirschi and Valero's (2015) findings with regards to career adaptability profiles among 52 undergraduate students in Belgium. For this purpose, we used latent profile analysis to 53 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 54 55 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 56 57 between career adaptability profiles and two important emotional correlates: emotional 58 intelligence and anticipatory emotions. On the one hand, emotional intelligence has been 59 identified as a key antecedent of career adaptability (Celik & Storme, 2017; Coetzee & Harry, 60 2014; Udayar et al., 2018). However, the number of empirical efforts regarding their relation 61 is still limited (Parmentier et al., 2019) and it remains unclear how these relations would 62 translate in a person-centered framework. On the other hand, as future graduates anticipate 63 their transition into the world of work, the various events it entails (e.g., finding a job), and 64 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 65 of a future event. These anticipatory emotions are close to constructs such as career hope or 66 career anxiety – even though the latter were mainly considered as trait or dispositions – and 67 have been identified as important correlates of career adaptability (Parmentier et al., 2021; 68 69 Santilli et al., 2017; Vignoli, 2015). Third, we investigated career decision-making selfefficacy as an additional outcome of career adaptability profiles in order to strengthen the 70 71 replication approach of our study. As such, both emotional intelligence and career 72 adaptability have been identified as antecedents of career decision-making self-efficacy (Di Fabio & Saklofske, 2014; Rudolph et al., 2017). 73

74 In doing so, the present study offers several contributions to the field. First, it provides 75 a direct replication in another sample of previous research on career adaptability profiles. 76 Such replication efforts are important to assess and ascertain the utility of person-centered 77 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 78 79 of relations between adaptivity (i.e., emotional intelligence), adaptability, and adapting responses (i.e., anticipatory emotions and career decision-making self-efficacy). Investigating 80 81 the broader career construction model of adaptation using a person-centered approach is 82 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 83 84 calls for more research on the role of emotional processes in career development (Hartung, 85 2011; Kidd, 2004).

86 **Profiles of Career Adaptability**

87 Career adaptability has been defined as a set of psychosocial self-regulatory, 88 transactional, and malleable resources that allow individuals to prepare for, cope with, and 89 manage career transitions and the associated career- or work-related issues (Savickas & 90 Porfeli, 2012). Career adaptability is a multidimensional construct composed of four 91 dimensions: concern (i.e., being future-oriented and prepare for the future), control (i.e., 92 being responsible in constructing one's own career), curiosity (i.e., exploring possible selves 93 and fit between oneself and the environment), and confidence (i.e., beliefs of own capacities 94 to manage career goals). Meta-analytic findings have confirmed that career adaptability was 95 related to a wide range of career-related outcomes such as job and career satisfaction, career 96 identity, lower job stress, and employability (Rudolph et al., 2017), among other outcomes. 97 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 98

work and career changes, proactively plan their career, develop new skills, engage in career
behaviors, and ultimately build sustainable careers (Buyken et al., 2015).

101 Even though substantial empirical evidence has now demonstrated the role of career 102 adaptability in individuals' careers (see Johnston, 2018, for a review), the existing stream of 103 research is mainly dominated by variable-centered approaches. This focus overlooked the 104 possibility that individuals may differ in their intraindividual *combinations* on the specific dimensions of career adaptability. In other words, while variable-centered approaches study 105 106 the extent to which variables are related to each other *on average* for the entire sample, they 107 fail to describe how the specific dimensions of career adaptability combine together, that is, 108 the patterns and the relative intensity of their combinations. These arguments gave rise to 109 calls for the use of person-centered approaches in vocational research (Hofmans et al., 2020; 110 Spurk et al., 2020).

111 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 112 113 sample of university students. In LPA, profiles are described based on their level and shape. 114 While level differentiates profiles on their mean level for each specific dimension (e.g., low 115 vs. high concern), shape refers to the different forms displayed by the specific combination of 116 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 117 118 advantages, such as the availability of fit indices to choose the best profile solution, the 119 consideration of measurement errors, and the inclusion of covariates (Hofmans et al., 2020; 120 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?

7

123 Consistent with Hirschi and Valero (2015), we expected the emergence of at least five 124 profiles differentiated mainly according to level (from low to high levels on all dimensions). 125 However, theoretical arguments cast doubt on the ubiquity of such profiles only differentiated 126 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 127 128 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 129 predictive validity of career adaptability dimensions, independently of the broad construct of 130 131 career adaptability, with several antecedents and outcomes (Rudolph et al., 2017 for a metaanalysis). The second line of argument stems from the theoretical conceptualization of the 132 133 career adaptability dimensions that explicitly theorize the presence of different profiles 134 (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 135 likely to intervene in the development of these dimensions, sometimes leading to regressions 136 137 or fixations (Savickas, 2013). Consequently, significant intraindividual differences between the four dimensions are likely to emerge depending on their development trajectories. As 138 such, counselors are invited to assess potential career-related problems associated with each 139 140 specific dimension finely: indifference (low concern) or anxiety (high concern), indecision (low control) or impulsivity (high control), unrealism (low curiosity) or overstimulation (high 141 142 curiosity), and inhibition (low confidence) or overconfidence (high confidence). According to Savickas (2013), investigating these differences with regards to the four dimensions could be 143 144 crucial for understanding the antecedents and consequences of individuals' career-related 145 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 146

the research question relatively open. This is consistent with the inductive and exploratorynature of person-centered approaches (Hofmans et al., 2020).

149 Correlates of Career Adaptability Profiles

150 The second and third goals of this study were to explore the relationships of distinct 151 career adaptability profiles with antecedents and outcomes. Building on the career 152 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 153 154 intelligence would predict profile membership. This is consistent with previous variable-155 centered research evidence considering emotional intelligence as an important factor of adaptive functioning in individuals' careers. Previous research has already shown that 156 157 emotional intelligence was an antecedent of career adaptability (Coetzee & Harry, 2014; 158 Parmentier et al., 2019) and that career adaptability mediated the impact of emotional 159 intelligence on several outcomes such as academic satisfaction, academic engagement, 160 employability, and career decision-making (Celik & Storme, 2017; Udayar et al., 2018). We 161 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-162 163 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 164 165 confidence in overcoming emotional situations (i.e., confidence). We therefore hypothesized 166 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. 167

168

Hypothesis 1. *High levels of emotional intelligence will be related to higher*

169 *likelihood of membership into profiles characterized by high levels of concern,*

170 *control, curiosity, and confidence.*

9

171 Furthermore, we explored the relations between career adaptability profiles and 172 anticipatory emotions at the prospect of the school-to-work transition and career decision-173 making self-efficacy. Building upon the career construction model, these two variables are 174 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 175 176 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 177 178 adapting responses are considered as outcomes of career adaptability: individuals are more 179 likely to display adapting responses in response to career-related tasks when they feel that 180 they have career adaptability resources in terms of concern, control, curiosity, and confidence 181 to prepare for and face these tasks.

182 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; 183 184 Parmentier et al., 2021; Santilli et al., 2017; Vignoli, 2015). Related research also showed 185 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; 186 Urbanaviciute et al., 2018). On the other hand, self-beliefs in making career-related decisions 187 are a core ingredient of the career decision-making process (Di Fabio & Saklofske, 2014). 188 189 Building upon social cognitive theory, career decision-making self-efficacy beliefs have been 190 developed to account for individuals' confidence in their ability to successfully complete the 191 tasks required to make a career decision (Betz et al., 1996). Previous research has 192 consistently shown that higher levels of career adaptability were associated with higher levels 193 of career decision-making self-efficacy (Rudolph et al., 2017). According to Savickas 194 (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 195

10

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 decisionmaking 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

- 204 higher levels of concern, control, curiosity, and confidence will display more positive
 205 and less negative anticipatory emotions.
- 206 **Hypothesis 3.** *Career adaptability profiles will display significant differences in*
- 207 terms of career decision-making self-efficacy such as profiles characterized by higher
- 208 *levels of concern, control, curiosity, and confidence will display more career*

209 *decision-making self-efficacy.*

210

203

Method

211 *Participants and procedure*

212 Data were collected among 307 university students from various programs in Belgium.

213 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,
- 216 78.8% were girls and mean age was 22.33 years (SD = 4.19). With regard to year of study,
- 217 140 participants were bachelor students (47.3%), while 156 participants were master students
- 218 (52.7%). Proportions of study programs were as follows: Social Sciences (69.2%), Health
- 219 Sciences (25.7%), and Science and Technology (5.1%).
- 220 *Measures*

Career adaptability

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222 Career adaptability was investigated with the short version of the Career Adapt-223 Abilities Scale (Maggiori et al., 2017). This instrument consists of 12 items ranging from 1 224 ("Not one of my strengths") to 5 ("My greatest strength") and is composed of 4 separate dimensions: concern ($\alpha = .73$; e.g., "Preparing for the future"), control ($\alpha = .74$; e.g., 225 226 "Making decisions by myself"), curiosity ($\alpha = .63$; e.g., "Observing different ways of doing things"), and confidence ($\alpha = .70$; e.g., "Taking care to do things well"). 227 228 Emotional Intelligence 229 We measured emotional intelligence using the intrapersonal dimension of the Profile 230 of Emotional Competence ($\alpha = .89$; Brasseur et al., 2013). The measure includes 25 items 231 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,

236 *Anticipatory Emotions*

regulation dimension).

237 We assessed positive anticipatory emotions with the 5 following items: excited, strong, enthusiastic, proud, determined ($\alpha = .85$). Negative anticipatory emotions were 238 239 assessed with the 5 following ones: jittery, upset, scared, nervous, and afraid ($\alpha = .87$). For 240 both subscales, response scales ranged from 1 ("Not at all") to 5 ("A great deal"). The 241 instructions for the emotional induction were as follows: "Stop for a moment and think about 242 your situation at the end of your studies and the entry on the labor market. Please indicate 243 how do you feel right now at the prospect of your transition from university to the job market using the following statements." 244 Career Decision-Making Self-Efficacy 245

246	Career decision-making self-efficacy was assessed with a validated French version of
247	the Career Decision Self-Efficacy Scale–Short Form ($\alpha = .84$; Betz et al., 1996; Gaudron,
248	2013). Previous research has demonstrated the good psychometric properties of the French
249	version (Storme, Celik &, Myszkowski, 2019). This scale consists of 18 items ranging from 0
250	("No confidence at all") to 5 ("Complete confidence"). Sample items are "Determine what
251	your ideal job would be" and "Identify employers, firms, institutions relevant to your career
252	possibilities."
253	[INSERT TABLE 1 ABOUT HERE]
254	Results
255	Preliminary analyses
256	All statistical analyses were conducted using Mplus 8 with the robust maximum
257	likelihood estimator. The means, standard deviations, and bivariate correlations are displayed
258	in Table 1. Second, we performed confirmatory factor analyses to assess the measurement
259	reliability and discriminant validity of our constructs. All construct-specific measurement
260	models for career adaptability, emotional intelligence, anticipatory emotions, and career
261	decision-making self-efficacy, respectively, demonstrated satisfactory to excellent fit to the
262	data (RMSEAs \leq .09; CFIs \geq .95; TLIs \geq .92; SRMR \leq .07). Our theoretical model in which
263	all constructs and their respective items were modeled altogether fitted the data satisfactorily
264	$(\chi^2 (406) = 685.57; RMSEA = .05; CFI = .91; TLI = .89; SRMR = .07)$ and was superior to
265	all more constrained models. Factor scores were saved from this theoretical measurement
266	model to be used as profile indicators in the subsequent analyses (Morin et al., 2016).
267	Latent profile analyses
268	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

271	(Nylund et al., 2007). LPA were performed using 5,000 random sets of starting values and
272	1,000 iterations, while retaining the 100 best solutions for optimization. Several fit statistics
273	were used to evaluate each profile solution: Akaike Information Criterion (AIC), Consistent
274	AIC (CAIC), Bayesian Information Criterion (BIC), sample-size adjusted BIC (SABIC),
275	adjusted Lo-Mendell-Rubin likelihood ratio test (aLMR), Bootstrap Likelihood Ratio test
276	(BLRT), and entropy. The best profile solution should display smaller AIC, CAIC, BIC, and
277	SABIC values, an entropy greater than .70, and significant aLMR and BLRT statistics.
278	Recommendations from simulation studies encourage researchers to favor the CAIC, BIC,
279	SABIC, and BLRT (Nylund et al., 2007). Means and variances of each indicator were
280	allowed to vary during the enumeration process, providing a more realistic parameterization
281	and less biased parameter estimates (Morin et al., 2011).
282	[INSERT TABLE 2 ABOUT HERE]
283	The fit indices associated with the profile enumerations are displayed in Table 2. The
284	AIC and SABIC kept on decreasing and suggested the continuing addition of profiles.
285	However, they tended to reach a plateau after the 6-profile solution. Values for the BIC and
286	CAIC are more informative as they reached a plateau after 4 profiles and both reached their
287	lowest point at 6 profiles and increased afterwards. The values associated with aLMR and
288	BLRT supported a 3- and a 7-profile solution, respectively. However, aLMR is known to
289	underestimate the number of profiles (Nylund et al., 2007) and the results of the BLRT were
290	inconsistent and regularly failed to converge for the 7- and the 8-profile solution. These
291	results thus supported the 6-profile solution as the best description of our data. In order to
292	check the theoretical adequacy and meaning carried out by the different profile solutions, we
293	carefully examined the solutions from 4 up to 6 profiles. These qualitative investigations
294	brought further support for the 6-profile solution as additional profiles were systematically
295	qualitatively distinct and meaningful. The 6-profile model was thus retained as the best

description of the data and is graphically represented in Figure 1 (see Table 3 for meanslevels of the indicators).

298 Given the balanced proportions between bachelor and master students and the 299 significant correlations between age, study year, and several dimensions of career adaptability, we performed additional analyses to investigate the replicability of the 6 profiles 300 301 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 302 303 shape (structural similarity), their within-profile variance (dispersion similarity), as well as 304 the relative size of each profile (distributional similarity), as demonstrated by decreasing AIC, BIC, SABIC, and CAIC fit statistics. 305

306

[INSERT FIGURE 1 ABOUT HERE]

307 Interpretation of profiles

308 Profile 1 encompassed students with very low levels on the four dimensions of career 309 adaptability. This *low* profile was composed of 15.3% of the total sample. Profile 2 was 310 composed of students exhibiting low levels on the four dimensions but the confidence 311 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 312 313 third profile was the largest (24.8%) and displayed levels of career adaptability dimensions 314 moderately *below average*. The fourth and the fifth profiles were both composed of a 315 substantial proportion of students (21.5% and 22.5%, respectively) and displayed above 316 average levels of career adaptability dimensions. The main difference between these two 317 profiles lied in the dominance of the concern dimension for the fifth profile compared to the 318 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 319

profiles. Finally, the smallest and last profile (5.9% of the sample) was composed of studentsdisplaying high levels of career adaptability dimensions.

322

[INSERT TABLE 3 ABOUT HERE]

323 Antecedents of career adaptability profiles

First, when comparing a model in which the control variables were allowed to predict 324 325 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 Mplus, we 326 327 conducted the multinomial logistic regression analyses. Overall, higher levels of emotional 328 intelligence were consistently associated with profiles characterized by higher levels of the career adaptability dimensions. High levels of emotional intelligence were associated with a 329 330 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 the331 332 low, low confidence, below average, above average, and concern dominant profiles, 333 respectively). Similar results were found for the *concern dominant* profiles compared to the 334 other profiles (B = -2.00, p < .001, B = -1.12, p < .01, B = -0.86, p < .01, B = -0.81, p < .01, p <335 for the low, low confidence, below average, and above average profiles, respectively). High 336 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 337 B = -1.19, p < .01, respectively). However, no significant effects were found between the 338 339 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 340 341 the low confidence profiles. Emotional intelligence also discriminated profiles with rather 342 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 343

344	with low levels of career adaptability but with different patterns (e.g., below average, low,
345	and low confidence profiles). Overall, these results brought support for Hypothesis 1.
346	[INSERT TABLE 4 ABOUT HERE]
347	Outcomes of career adaptability profiles
348	Differences between profiles in terms of anticipatory emotions and career decision-
349	making self-efficacy were performed using the BCH function in Mplus. Results are displayed
350	in Table 4 and graphically represented in Figure 2. Significant differences between career
351	adaptability profiles could be found for positive anticipatory emotions and career decision-
352	making self-efficacy. However, no significant differences were found between profiles with
353	regards to negative anticipatory emotions. Overall, profiles with higher levels of career
354	adaptability dimensions displayed higher levels of positive anticipatory emotions and career
355	decision-making self-efficacy. However, profiles displaying similar levels of career-
356	adaptabilities but with different shape hardly displayed significant differences. For example,
357	while the low profile displayed much lower levels of career adaptability and career decision-
358	making self-efficacy compared to the low confidence and the below average profiles, these
359	two last profiles did not statistically differ. A similar pattern was found for the profiles
360	displaying higher mean levels of career adaptability but with varying shapes (i.e., the below
361	average, concern dominant, and high profiles). These results supported our third hypothesis
362	and partially our second hypothesis.

363

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 decisionmaking 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 369 370 present paper therefore aimed to expand existing knowledge pertaining to the profiles of 371 career adaptability within the career construction model of adaptation. Due to the rather 372 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 373 374 et al., 2020; Spurk et al., 2020). The present study also aimed to address previous calls for the 375 inclusion of emotional processes in career development whose importance is stressed out in 376 stressful and emotional career events such as the school-to-work transition.

377 First, our results yielded six distinct and meaningful career adaptability profiles. Three profiles encompassed rather low levels of career adaptability, and, together, were composed 378 379 of the half of the sample. The low profile described students that displayed low levels on all 380 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 381 382 a quarter of the total sample with levels on all dimensions somewhat below average. The 383 other three profiles exhibited students with rather high levels of career adaptability. Two profiles displayed moderately high levels of career adaptability but were qualitatively 384 385 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 386 387 profiles were found to be similar in number, in shape, within-person variance, and size 388 among bachelor and master students. These results are partially consistent with Hirschi and 389 Valero's (2015) findings as our results yielded a 6-profile solution, instead of a 5-profile 390 solution. However, most profiles were differentiated upon their level (the low, above average, 391 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 392 393 to the sample (e.g., different country, different educational context, sample size) and

394 analytical procedure (e.g., operationalization of the indicators, underlying assumptions, fit 395 statistics) that could potentially account for the differences between the two studies. Still, we 396 did observe the emergence of two qualitatively differentiated profiles: the low confidence and 397 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 398 399 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 400 401 smaller in our study (5%) compared to Hirschi and Valero's (2015) study (15%). While we 402 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 403 404 evidence that, in specific contexts, shape differences may occur. Especially, these two 405 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 406 407 violations of the model's distributional assumptions (Bauer & Curran, 2003). Actually, the 408 present study sheds light on the complementariness of both approaches in that they provide 409 distinct but equally useful information to the study of career adaptability (Collins & Lanza, 410 2010). As such, the reliance on either a variable- or a person-centered approach is directly 411 dependent upon the research question or the practical issue at hand (Hofmans et al., 2020). 412 When adopting a variable-centered approach, one is able to study the relations, on average, 413 between career adaptability and key covariates, establishing these relations for the entire 414 sample. The person-centered approach is well suited to bring nuance in these relationships 415 and investigate whether subpopulations with distinct patterns of these relations exist. 416 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 417 higher probability to belong to profiles with higher levels of career adaptability. Interestingly, 418

419 not only emotional intelligence differentiated profile membership between profiles with varying *levels* of career adaptability but emotional intelligence also differentiated profiles 420 421 with varying shapes of career adaptability dimensions. Actually, this was only true for 422 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* 423 424 average profile. However, emotional intelligence did not predict differences in profile membership between the low confidence and the above average or the low profile. 425 Importantly, the examination of predictors of profile membership is of great importance in 426 427 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 428 429 in line with previous research highlighting the predictive effect of emotional intelligence on 430 career adaptability in cross-sectional and longitudinal studies (Celik & Storme, 2017; Coetzee 431 & 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 432 433 use and the development of career adapt-abilities.

434 The examination of differences between profiles with regards to anticipatory emotions at 435 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 436 with regard to positive anticipatory emotions and career decision-making self-efficacy. 437 438 Profiles with higher levels of career adaptability displayed consistently higher levels on these 439 two variables. Contrary to the effects found for emotional intelligence, the impact on 440 outcomes was mainly an effect of the *levels* as results failed to distinguish profiles with 441 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 442 consistent with previous research highlighting the positive impact of career adaptability on 443

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.

451 *Limitations and future directions*

452 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 453 454 antecedents and outcomes of career adaptability profiles. Future research could focus on 455 longitudinal studies in order to better investigate the temporal precedence between the 456 variables of interest and further address the construct validity and replicability of career 457 adaptability profiles (Morin et al., 2018). Second, our sample was mainly composed of 458 women, limiting our ability to generalize our findings to other samples or populations. This 459 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 460 support for the profiles found in these studies. Third, our sample size may be considered as 461 small with regards to latent profile analyses standards (Tein et al., 2013). This issue would be 462 463 important to address in subsequent replication efforts.

464 *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

469 interventions. Actually, the classification into career adaptability typologies is appealing for 470 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, 471 472 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., 473 474 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 475 476 ability for students to achieve career goals. With students in the low confidence profile, 477 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 478 479 will strengthen their sources of self-efficacy and confidence. Finally, emotional intelligence 480 and career adaptability have been demonstrated as reflecting malleable self-regulatory 481 processes that can be taught and improved (Hodzic et al., 2018; Koen et al., 2012). Our 482 findings thus offer important avenues in the development and the use of tailor-made 483 interventions specifically designed to increase both global levels of career adaptability 484 alongside with its specific dimensions.

485

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Tables

612

613 Table 1

614 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 .01 level. *** Significant at the .001 level.

616 Table 2

# 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

617 Latent Profile Enumeration Fit Statistics

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.

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619 Table 3

620 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)									
<i>Note.</i> Reported indices refer to the means and standard errors of profile indicators.									

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622 Table 4

623 Differences of Outcomes between Career Adaptability Profiles

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

Note. PAE = positive anticipatory emotions. NAE = negative anticipatory emotions. CDSE = career decision-making 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 *e* refer to significant pairwise comparisons with the High, Concern Dominant, Above average, Below average, and Low confidence, respectively.

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Figures

629 Figure 1. Final 6-profile Solution of Career Adaptability



631 Figure 2. Outcomes for the Final 6-profile Solution of Career Adaptability

