

Examining the impact of emotional intelligence on career adaptability: a
two-wave cross-lagged study

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Abstract

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 adaptabilities (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.

Keywords: emotional intelligence, career adaptability, longitudinal study, adult learning

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, Zacher, & Feldman, 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, Klehe, Zikic, & van Vianen, 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, Ramalho, & Morin, 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, Palazzeschi, Asulin-Peretz, & Gati, 2013; Di Fabio & Saklofske, 2014), career commitment (Brown, George-Curran, & Smith, 2003), career success (de Haro García & Castejón Costa, 2014), and employability (Hodzic, Ripoll, Lira, & Zenasni, 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, Lavigne, & Zacher, 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, Pop, & Crocetti, 2015), job stress (Fiori, Bollmann, & Rossier, 2015), and employability (Udayar, Fiori, Thalmayer, & Rossier, 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, Hontangas, & Petrides, 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, Bourgeois, Nils, De Viron, & Traversa, 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 organisations, 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 ($M_{age} = 34.22$, $SD = 9.06$; 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, Grégoire, Bourdu, & Mikolajczak, 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 Procedures*

Concerning our statistical analyses, we adopted a three-step strategy using structural equation modeling techniques with Mplus 8: (1) testing measurement models at each measurement time; (2) testing the measurement invariance to check whether our factor structure hold across time; (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 1). 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 $\alpha > .85$).

[insert Table 1 here]

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 ($\chi^2 = 65.47$, $df = 26$, CFI = .94, RMSEA = .074, SRMR = .051) and Time 2 ($\chi^2 = 66.53$, $df = 26$, 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 2). 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 ($\Delta CFI < .01$) and RMSEA ($\Delta RMSEA < .015$; 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 & Bornstein, 2016).

[insert Table 2 here]

3.2. Hypotheses Testing

Several competing cross-lagged models were fitted to the data and compared in several steps (see Table 3). 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 1. 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 1 shows, T1 emotional intelligence positively predicted T2 career adaptability levels ($\beta = .241, p < .05$) while controlling for the prior levels of career adaptability ($\beta = .326, p < .001$). The causality model explained a substantial part of the variance of career adaptability ($R^2 = .23$).

[Insert Table 3 here]

When including the control variables in the analysis, results were identical and did not change the interpretation of the findings. The causality model ($\chi^2 = 368.95, df = 221, CFI = .91, TLI = .89, RMSEA = .046$) 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.

[Insert Figure 1 here]

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 quality 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, MacKenzie, Lee, & Podsakoff, 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, & Sirén, 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, Scharfen, Ripoll, Holling, & Zenasni, 2018; Koen, Klehe, & Van Vianen, 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, Galuppo, Bruno, Ivaldi, & Scaratti, 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, De Viron, Vignery, & Nils, 2018). At the same time, they have to manage the dual roles of worker and student,

290 notwithstanding family demands (Fairchild, 2003). This is in line with a lifespan perspective
291 that posits that the use of self-regulatory resources may vary at different career stages
292 (Rudolph et al., 2017). Helping adults to succeed in their learning, manage the various
293 challenges related to the work, student, and family domains, as well as to prepare for and deal
294 with career changes through the development of meta-competencies is crucial to build
295 positive and sustainable careers.

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Table 1. Means, standard deviations, reliabilities and bivariate correlations for the study variables

	M	SD	1	2	3	4	5	6	7	8	9	10
Time1												
1. Age	34.22	9.06	—									
2. Gender	—	—	-.05	—								
3. Education	—	—	.06	.05	—							
4. Tenure	9.17	7.32	.80***	-.05	-.04	—						
5. Marital 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	.36***	.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. $N_{\text{time1}} = 282$; $N_{\text{time2}} = 208$. EI = emotional intelligence. CA = career adaptability. [†] $p < .10$. * $p < .05$. ** $p < .01$. *** $p < .001$. Cronbach's alphas are reported on the diagonal in bold.

Table 2. Measurement invariance statistics.

Models	MLR χ^2 (df)	CFI	TLI	RMSEA	RMSEA 90% CI	SRMR	Δ MLR χ^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 ₂ -M ₁
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. MLR χ^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. * $p < .001$.

Table 3. Cross-lagged model fit and comparison of alternative models.

Models	MLR χ^2 (df)	CFI	TLI	RMSEA	RMSEA 90% CI	SRMR	Δ MLR χ^2 (df)	Comparison
M ₁ Stability model	244.914(137)	.927	.918	.050	.039-.059	.109	—	—
M ₂ Causality model	238.061(136)	.931	.922	.048	.038-.058	.107	7.1344(1)*	M ₁ -M ₂
M ₃ Reversed causality model	243.785(136)	.927	.918	.050	.039-.060	.109	0.4024(1)	M ₁ -M ₃
M ₄ Reciprocal causality model	237.055(135)	.931	.921	.049	.038-.059	.106	0.0610(1)	M ₂ -M ₄

Note. MLR χ^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. * $p < .01$.

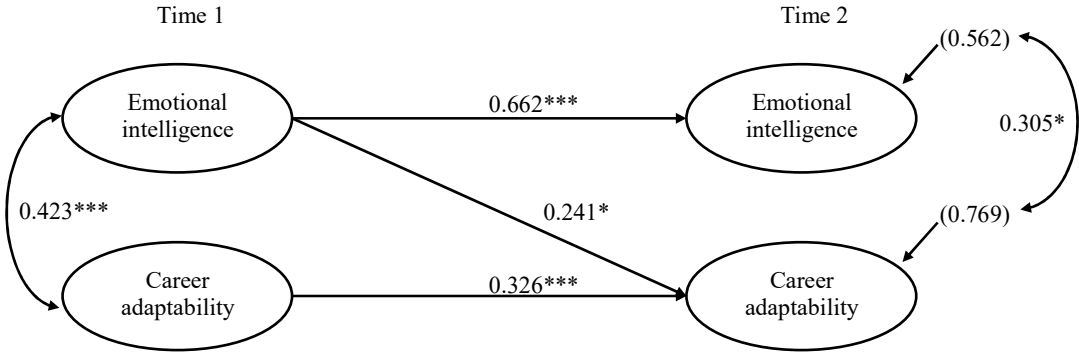


Figure 1. Cross-lagged relationships between emotional competence and career adaptability of the causality model. * $p < .05$. *** $p < .001$.