Career adaptability mediates the effect of trait emotional intelligence on academic engagement

La adaptabilidad a la carrera media el efecto de la inteligencia emocional rasgo sobre el compromiso académico

Enrique Merino-Tejedor[a*], Pedro M. Hontangas[b] y K. V. Petrides[c]

[a] *Universidad de Valladolid, Spain*
[b] *Universidad de Valencia, Spain*
[c] *University College London, United Kingdom*

ABSTRACT

Introduction: The present study tested the mediating role of career adaptability on the existing relation between trait emotional intelligence (EI) and academic engagement. Method: The sample consisted of 590 Spanish university students with a mean age of 21.66 years. Results: The results confirmed the positive relations of trait EI with career adaptability, as well as with academic engagement. A key finding concerns the confirmation of the mediating role of career adaptability on the relation between trait EI and academic engagement, supporting a model of total mediation. In confirming the existence of total mediation, this study makes a new and valuable contribution that allows for better and more precise clarification of the links between trait EI, career adaptability, and academic engagement. The discussion focuses on issues concerning the relation between these variables and the possibility of developing interventions to improve career adaptability and academic engagement in undergraduate populations.

Keywords: career adaptability, trait emotional intelligence, academic engagement, university students.

RESUMEN

En el presente estudio se comprueba el papel mediador de la adaptabilidad a la carrera en la relación existente entre la inteligencia emocional (IE) rasgo y el compromiso académico. La muestra comprende 590 estudiantes universitarios españoles con una edad media de 21.66 años. En los resultados se confirman las relaciones positivas entre la IE rasgo, la adaptabilidad a la carrera y el compromiso académico. Un hallazgo clave es la confirmación del papel mediador de la adaptabilidad a la carrera, modelo de mediación total, en la relación entre la EI rasgo y el compromiso académico. Este estudio aporta una valiosa contribución científica que permite una mejor y más precisa aclaración de los vínculos entre la IE, la adaptabilidad profesional y el compromiso académico. La discusión se centra en las cuestiones relativas a la relación entre estas variables y la posibilidad de desarrollar intervenciones para mejorar la adaptabilidad profesional y el compromiso académico entre estudiantes universitarios.

Palabras clave: Adaptabilidad a la carrera, inteligencia emocional rasgo, compromiso académico, estudiantes universitarios.

* Correspondencia: Enrique Merino-Tejedor, Departamento de Psicología, Universidad de Valladolid, Dirección: Facultad de Educación, Campus María Zambrano, Plaza de la Universidad, 1, 40.005 Segovia, Spain. E-mail: enrique.merino@uva.es
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Introduction

The aim of the present study was to explore the associations between trait emotional intelligence (trait EI), career adaptability, and academic engagement. Specifically, the study tested the mediating role of career adaptability on the relationship between trait EI and academic engagement in a sample of Spanish university students.

Trait EI and career development

Trait EI is defined as a constellation of emotional perceptions assessed via questionnaires and rating scales (Petrides, Pita, & Kokkinaki, 2007). There is evidence, including behavioral genetic investigations (Vernon, Villani, Schermer, & Petrides, 2008), supporting the conceptualization of trait EI as an aspect of personality. At the same time, the construct shows incremental validity over the Giant Three, the Big Five, and other personality variables (e.g., Andrei, Siegling, Aloe, Baldaro, & Petrides, 2016). One study carried out work on the Managing the Emotions of Others Scale (MEOS) by examining its associations with the personality traits considered in the six-factor model of personality structure HEXACO: Honesty-Humility (H), Emotionality (E), Extraversion (X), Agreeableness (A), Conscientiousness (C), and Openness to Experience (O), and with the factors and facets of the trait EI measured with the Trait Emotional Intelligence Questionnaire (TEIQue). The first component of the MEOS, enhance, includes approaches to interpersonal emotion management, whilst the second, divert, includes approaches such as the use of humour to increase another's mood (Austin & Vahle, 2016). Among the most important findings of this study, it was found that at the factor level of the TEIQue, regression models showed that trait EI-emotionality and trait EI-sociability were significant predictors for both components of the MEOS, enhance and divert, defined as the prosocial pair. Another study showed that perfectionistic concerns, which are related to a solid conviction that being perfect is important to others, correlate negatively with trait EI; in contrast, the same study proved that perfectionistic strivings, which are related to a conviction that being perfect is important for oneself, are positively associated with trait EI (Smith, Saklofske, & Yan, 2015).

There have been a number of studies on the role of trait EI in relation to vocational and career-related variables. For example, trait EI has been linked to career decision-making (Di Fabio & Saklofske, 2014); this study confirmed the hypotheses that trait EI added significant incremental variance beyond that explained by the Big Five personality dimensions in relation to career decision-making self-efficacy, career indecision, and indecisiveness. On the other hand, Coetzee and Harry (2014) provided evidence that high levels of self-efficacious emotional performance may improve self-efficacious adaptive execution in behavioral fields linked to career adaptability.

Consideration of emotional experience has been increasing in the field of vocational development, competing for attention with cognitive aspects, perhaps in response to the claims that, in the range of career theories, human emotions lack the prominence they rightly deserve (Hartung, 2011; Puffer, 2011; Young & Valach, 2000). Researchers have called for an increase in research in this area, as well as for the replication of models focusing on the relationship between EI and career psychology. Young, Paseluikho, and Valach (1997)

developed one of the first theoretical models of the role of emotion in career development, proposing that people with high EI have superior career-building abilities.

Trait EI and engagement

The concept of engagement has been studied extensively in the context of the workplace. The most popular definition of work engagement is as a state of mind characterized by vigor, dedication, and absorption (Schaufeli, Salanova, González-Romá, & Bakker, 2002).

One popular model of work engagement by Bakker, Albrecht, & Leiter (2011) comprises the following three components: *absorption* (fully concentrated on some task or activity), *dedication* (significant and meaningful pursuit of goals characterized by a sense of significance, inspiration, and pride), and *vigor* (devoting time and effort to work tasks).

With respect to the relation between EI and engagement, in current models of work engagement (see Bakker et al., 2011), the drivers of engagement are considered to be both job resources (e.g., autonomy) and personal resources (e.g., self-efficacy). The latter may also be understood as psychological capital, including aspects such as self-efficiency, confidence, optimism, and perseverance (Luthans, Youssef, & Avolio, 2007), all of which are linked to EI.

In educational contexts, research has shown a positive relationship between general EI and academic achievement (MacCann, Fogarty, Zeidner, & Roberts, 2011; Mavroveli & Sánchez-Ruiz, 2011; Serrano & Andreu, 2016), which tends to be stronger in primary school and vulnerable students (Perera & DiGiacomo, 2013; Petrides, Frederickson, & Furnham, 2004). Comparatively less research has focused on the relationship between EI and academic engagement. In a study carried out with undergraduate students, it was found that perceived EI predicts academic burnout and engagement, controlling for gender and age (Durán, Extremera, Rey, Fernández-Berrocal, & Montalbán, 2006).

Career development and academic engagement

Research into career development has been gaining prominence owing, among other things, to the development of the concept itself and to the latest changes in the labor market affecting work and job conditions (e.g., mobility, instability). Recent definitions of career development highlight the dynamic nature of the construct (Zacher, 2014). In current times, between school-leaving and retirement, significant changes will occur during working life. Although every stage is important, the period of tertiary education is particularly relevant in the consolidation of a vocational identity (Porfeli, Lee, Vondracek, & Weigold, 2011). It is during this stage when students have to confront decisions relating to their transition into the world of work, or further study to obtain a higher degree of specialization in a specific discipline.

Within the field of career development, the concept of career adaptability has generated a great deal of interest (Coetzee & Harry, 2014; Rudolph, Lavigne, & Zacher, 2017; Santilli, Nota, Ginevra, & Soresi, 2014; Zacher, 2014). Savickas (1997) conceives it as an important variable to cope with the predictable and unpredictable adjustments triggered by changes in working conditions.

The dominant model of career adaptability was expanded by Savickas and Porfeli (2012), and comprises the following components: concern (the level in which a person prepares for the future), control (self-regulation and carefulness in decision making), curiosity (the ability

to explore the environment and seek information), and confidence (solving problems and overcoming obstacles). These four dimensions are featured in the *Career Adapt-Abilities Scale (CAAS)*, which has become the principal instrument for assessing levels of career adaptability (Savickas & Porfeli, 2012).

The concept of career adaptability is framed within *"Career Construction Theory"*, which was developed by Savickas (2005) based on Super's original theory of vocational development (Super, 1957). It attempts to explain the adaptation of an individual to their environment in order to achieve adequate integration in the workplace. The main objective of the theory is to offer an adequate frame of reference allowing for the incorporation and integration of individuals into their environment (Savickas & Porfeli, 2012).

Career Construction Theory (Savickas, 2013) views career adaptation as a four-step process comprising: readiness and adaptivity (e.g., motivation to meet career tasks), resources and adaptability (e.g., psychological resources to face vocational demands), adapting responses (e.g., behaviors to tackle demanding conditions), and results (e.g., adaptation outcomes in the career construction process). The theory posits that adaptation is promoted by five broad sets of behaviors: orientation (e.g., predisposition to engage actively in the career development process), exploration (e.g., clarifying the meaning of the self and looking for occupational information), establishment (e.g., making efforts to maintain and thrive within a chosen occupation), management (e.g., exploring new paths or progressing in the preferred profession), and disengagement (e.g., decreasing the dedication and interest level).

Academic engagement is conceptualized as a possible antidote to lack of motivation, low achievement and dropping out (e.g., Fredricks, Blumfeld, & Paris, 2004). Consequently, it has become a cornerstone within the field of academic motivation and interest in it is also increasing in the field of educational psychology (Sinatra, Heddi, & Lombardi, 2015).

However, some studies have failed to support the incremental influence of academic engagement over other aspects of education, such as career development. For example, Kenny, Blustein, Haase, Jackson, and Perry (2006) reported a positive link between career planfulness and school engagement on a sample of high-school students; however, higher school engagement did not lead to improved career development. In spite of these results, the authors recommended further research to gain a deeper insight into these findings.

In a recent study, Merino-Tejedor, Hontangas, and Boada-Grau (2016) found a positive association between academic engagement and all four dimensions of career adaptability: concern, control, curiosity, and confidence.

Career adaptability as a mediator variable

The study of career adaptability as a potential mediator is relatively new in the broader field of vocational development and offers a promising line of research for scholars in the field of career development. For example, Li et al. (2015) found, in a sample of management undergraduates, that career adaptability was a key mediator of the relationships between personality traits and career exploration, while Merino-Tejedor et al. (2016) showed, in a sample of undergraduate students, that career adaptability mediated the relationships between self-regulation and academic engagement and also between self-regulation and career construction (related to the abilities to enter and thrive into the labor market). Finally, Nilforooshan and Salami (2016) reported that career adaptability mediates the relationship between various personality dimensions (e.g., neuroticism and sensation-seeking) and career engagement in a sample of university students.

Theoretical proposal of the present study

Within the framework of Career Construction Theory, principally maintained in Savickas' model (1997, 2005), the present study aims to gain a deeper insight into the relationship existing between trait EI, career adaptability, and academic engagement. These three variables are important within certain current frames of reference of career development. This proposition is only possible from a dynamic perspective of personality, given that both career adaptability and engagement, as noted in the theoretical review, are considered dynamic processes within the evolutionary development of individuals.

The present study is centered on elaborating an explanatory model upon the relationship between trait EI and career adaptability, following existing research on this general topic (e.g., Emmerling & Cherniss, 2003; Puffer, 2011). In the model tested here, trait EI is an exemplar of adaptivity as a personality trait related to adaptive readiness to face tasks of the environment, and distinct from career adaptability comprising personal psychosocial resources; and finally academic engagement as a specific result of the adaptation process to the demanding career stage. Taking into account the review of the theory, a chain of relationships where an antecedent variable (trait EI) affects a mediating variable (career adaptability) is proposed, which then affects an outcome variable (academic engagement). This model is presented in Figure 1.

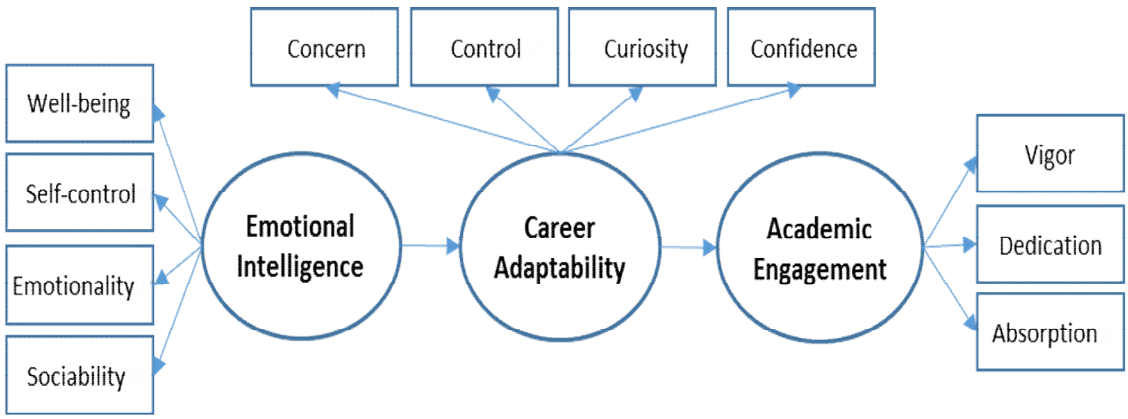


Figure 1. Theoretical mediation model.

Aims of the current study

To our knowledge, there have been no studies of career adaptability as a potential mediator of the relationship between trait EI and academic engagement. In summary, within this theoretical background the following general objective has been formulated: to further understand the relationship between trait EI, career adaptability, and academic engagement; particularly to focus on the mediating role of career adaptability between trait EI and academic engagement. The present study examined all three dimensions together with adaptivity indicated by EI, adaptability indicated by the CAAS, and adaptation results indicated by academic engagement. The study tested whether adaptability resources mediate the relation between personality adaptive readiness and adaptation results in an academic setting.

Previous research has shown that trait EI relates to greater levels of career adaptability and academic engagement. Accordingly, we hypothesized:

Hypothesis 1. Students with higher trait EI will show a greater level of career adaptability.

Hypothesis 2. Students with higher trait EI will show a greater level of academic engagement.

Furthermore, since career adaptability is important for coping with the demands and occasional unpredictability in work and educational settings, we hypothesized that:

Hypothesis 3. Students with higher career adaptability will show a greater level of academic engagement.

Finally, since career adaptability has been shown to mediate the effects of personality variables on career-related variables, like career exploration, career construction, and career engagement, we hypothesized that:

Hypothesis 4. Career adaptability will be a positive mediator of the relationship between trait EI and academic engagement.

Method

Participants

The research was conducted on 590 Spanish undergraduate students (35.2% males) with a mean age of 21.66 (*SD* = 4.24). Almost half of the students (46.9%) studied social sciences, followed by health sciences (33.6%), engineering (8.8 %), arts and humanities (6.4%), and finally sciences at 4.2%. Most participants were first-years (36.9%), followed by second- (18%), third- (28.5%), fourth- (15.1%), fifth- (1.4%), and, last, final-year (0.2%) students. With respect to employment situation, most participants (71.5%) were full-time students, while the rest were part-time (28.5%).

Measures

Trait Emotional Intelligence Questionnaire – Short Form (TEIQue-SF). The TEIQue–SF consists of 30 items designed to measure global *trait emotional intelligence* (*trait EI*), taking pairs from each of the 15 facets of the long form (TEIQue-LF) which has 144 items grouped into four factors (Cooper & Petrides, 2010): *well-being* (e.g. “I generally don’t find life enjoyable), *self-control* (e.g. “I usually find it difficult to regulate my emotions”), *emotionality* (e.g. “Expressing my emotions with words is not a problem for me”), and *sociability* (e.g. “I can deal effectively with people”). Answers are recorded on a seven-point scale ranging from 1 (*completely disagree*) to 7 (*completely agree*), higher *trait EI* levels are suggested by higher scores. Siegling, Wesely, Petrides, & Saklofske (2015) showed the high convergence of the two forms (long and short) and the incremental validity (beyond the Five-Factor Model and coping strategies) to predict stress, anxiety, academic motivation, and satisfaction with life. Although it is possible to obtain scores for the four *trait EI* factors, they tend to show lower internal consistencies than the global score (Petrides, 2009); therefore, it is preferable to use the instrument as a measure of global *trait EI*. The Spanish adaptation of TEIQue-SF was carried out by Pérez-González (2010), who found a positive relation with job performance, team work competence, a broad learning styles profile, and an incremental validity in the prediction of depression beyond the Positive and Negative Affect Schedule

(PANAS) and the Trait Meta-Mood Scale (TMMS). Laborde, Allen & Guillen (2016) showed the equivalence or concurrent validity for the Spanish short- and long-form versions. In general, Cronbach's alpha reliability coefficients for the global *trait EI* are satisfactory, about .85, but they are only moderate for the subscales: .77 for *well-being*, .68 for *self-control*, .71 for *emotionality*, and .67 for *sociability* (i.e., Laborde, Guillen, & Watson, 2017). In the present study, like in Laborde et al., (2016), we will be only interested in the global trait EI, and the four dimensions will be used as indicators or observed variables. The confirmatory factor analysis (CFA) showed adequate fit of the measurement model: $_{SB}\chi^2$ = 3.41, *p* = .07, NFFI = .954, CFI = .992, RMSEA = .064, with standardized loadings of .84, .46, .60, and .48 for *well-being*, *self-control*, *emotionality* and *sociability*, respectively. The reliability results obtained were as follows, for global *trait EI*: alpha coefficient (α) = .84, composite reliability (CR) = .70, average variance extracted (AVE) = .38, and omega coefficient (Ω) = .69; for *well-being*: α = .78, CR = .78, AVE = .38, and Ω = .82; for *self-control*: α = .55, CR = .48, AVE = .19, and Ω = .56; for *emotionality*: α = .66, CR = .67, AVE = .22, and Ω= .70; finally, for *sociability*: α = .50, CR = .40, AVE = .14, and Ω = .52.

Career Adapt Abilities Scale (CAAS). This scale allows assessing the abilities of individuals to adapt to career construction (Porfeli & Savickas, 2012; Savickas & Porfeli, 2012). It contains 24 items grouped into four dimensions: *concern* (e.g. "Planning how to achieve my goals"), *control* (e.g. "Making decisions by myself"), *curiosity* (e.g. "Investigating options before making a choice"), and *confidence* (e.g. "Performing tasks efficiently"). Answers are recorded on a five-point scale ranging from 1 (*not strong*) to 5 (*strongest*), greater levels of adaptability are suggested by higher scores. A Spanish adaptation of the instrument was carried out and reported in Merino-Tejedor et al. (2016), where internal consistency values for the overall scale of .92, and for the subscales of .79 (*concern*), .80 (*control*), .83 (*curiosity*), and .84 (*confidence*) were found, similar to those obtained in previous research (Savickas & Porfeli, 2012). Furthermore, there is evidence for the concurrent validity of the scale with the Vocational Identity Status Assessment (VISA) (Porfeli et al., 2011), finding a consistent pattern of association ranging from -.20 to .52 (Porfeli & Savickas, 2012). In the present study, the CFA showed an adequate fit of the measurement model: $_{SB}\chi^2$ = 1.34, *p* = .24, NFFI = .995, CFI = .998, RMSEA = .024, with standardized loadings of .74, .80, .74, and .85 for *concern*, *control*, *curiosity*, and *confidence*. The reliability values obtained were the following, for the overall scale: α = .92, CR = .86, AVE = .61, and Ω = .86; for *concern*: α = .79, CR = .82, AVE = .43 and Ω = .87; for *control*: α = .80, CR = .84, AVE = .47, and Ω = .84; for *curiosity:* α = .83, CR = .85, AVE = .48, and Ω = .84; finally, for *confidence*: α = .84, CR = .86, AVE = .50, and Ω = .86.

Academic engagement. We used an adapted, 24-item version of the Utrecht Work Engagement Scale (UWES) designed by Schaufeli et al. (2002) to include items appropriate for university students. It consists of three dimensions: *dedication* (meaningful pursuit; which is characterized by a sense of significance, inspiration, and pride that goes beyond the usual level of identification, and comprises and affective component; e.g. "To me, my studies are challenging"), *absorption* (concentration on a task; e. g. "I get carried away when I am studying"), and *vigor* (devoting effort to work tasks; e.g. "When I'm doing my work as a student, I feel bursting with energy"). Answers are recorded on a five-point Likert scale ranging from 1 (*never*) to 5 (*always*). Increased levels of engagement are indicated by higher scores. The creators of the instrument supplied the Spanish version. Acceptable levels of reliability were found in earlier student-based studies (Cronbach's alpha of .78 for *vigor*, .84

for *dedication*, and .73 for *absorption*), and also acceptable validity values, the mean correlation of the engagement scales and burnout dimensions ranged from -.38 to .42 (Shaufeli et al., 2002). In this study the CFA showed high standardized loadings of .91, .71, and .89 for *dedication*, *absorption*, and *vigor*. The reliability values obtained were as follows, for global *academic engagement*: α = .91, CR = .87, AVE = .71, and Ω = .88; for *dedication*: α = .85, CR = .87, AVE = .58, and Ω = .87; for *absorption*: α = .81, CR = .84, AVE = .46, and Ω = .84; finally, for *vigor*: α = .79, CR = .81, AVE = .41, and Ω = .82.

The fit of the global measurement model was acceptable: ${}_{SB}\chi^2$ = 170.73, p < .001, NFFI = .90, CFI = .93, RMSEA = .07.

Procedure

The subjects were selected through non-probability sampling during the academic year 2014-2015. Participants were requested, through the university professors involved in the research, to participate in the study answering an online survey through a link they were provided, on a voluntary basis. The objectives of the study were outlined to them prior to their responses and personal data were not recorded in order to ensure anonymity.

Statistical Analyses

The SPSS 22 package was used to obtain descriptive statistics, Cronbach's alpha coefficients and Pearson correlations between measures.

There is a wide range of strategies to test the mediating effects (see, MacKinnon, 2008). The analysis was conducted using the Structural Equation Models (SEM) approach with EQS 6.1 (Bentler, 2006) as it is considered more suitable than the regression approach, that does not take into account the presence of measurement error (Iacobucci, Saldanha, & Deng, 2007; James, Mulaik, & Brett, 2006). The latent variables were composed of the following observed indicators (see Figure 1): the independent variable (**X**, *trait EI*) composed of the four dimensions of the TEIQue-SF (*well-being, self-control, emotionality, and sociability*), the dependent variable (**Y**, *academic engagement*) composed of the three dimensions of UWES (vigor, dedication, and absorption), and the mediator variable (**M**, *career adaptability*) composed of the four dimensions of the CAAS (*concern, control, curiosity*, and *confidence*).

Prior to SEM mediation analysis, a confirmatory factor analysis (CFA) was performed to test the measurement model. Maximum likelihood with robust Satorra-Bentler corrections was the estimation method of choice, given that multivariate normality was not tenable (Mardia multivariate coefficient was 23.59), (Byrne, 2006; Finney & DiStefano, 2006). Goodness-of-fit for each model was assessed using indices based on different approaches (Hu & Bentler, 1999; Marsh, Balla, & Hau, 1996): χ^2 statistic; NNFI (Non-normed fit index), CFI (Comparative Fit Index), and RMSEA (Root Mean Square Error of Approximation) and its 90% confidence interval. Robust versions of all tests and fit indices were used. The χ^2 goodness-of-fit statistic is a test of the difference between the observed covariance matrix and the one predicted by the specified model. χ^2 value with a probability value greater than .05 indicates good fit; however, this statistic is affected by several limitations and has very restrictive assumptions (dependence on sample size, multivariate normality, use of the correct model). Therefore, other indices less affected by sample size and model complexity (Bollen & Long, 1993) were used. Values higher than .90 for NNFI and CFI or lower than .08 in RMSEA are considered a reasonable fit (Byrne, 2001), although values higher than .95 for

NNFI and CFI, and lower than .05 in RMSEA are more desirable and considered an excellent fit (Hu & Bentler, 1999).

The following procedure was used to test the full or partial mediation. Three models were estimated: M1) the total effect model (X→Y); M2) the indirect effect model (X→M→Y, when X→Y is constrained to zero); and M3) the direct and indirect effects model (X→M→Y, when X→Y is estimated freely). A mediation relation exists when the three steps show a good fit (although the total effect model is not always required, see MacKinnon, 2008). Full mediation exists when there are no statistically significant differences between models 2 and 3, i.e. the indirect effect (X→Y) is statistically significant, but the direct effect (X→Y) is not. Partial mediation exists when there are differences between models 2 and 3, and the direct and indirect effects are statistically significant. Finally, to obtain the asymmetric confidence interval for indirect or mediated effect the method based on the distribution of the product with the PRODCLIN procedure and RMediation program was employed (MacKinnon, Fritz, Williams, & Lockwood, 2007; Tofighi & MacKinnon, 2011).

Results

Correlations between variables (latent and observed)

Correlations among indicators or observed variables are shown in Table 1. All values were significant and positive, as predicted by the theoretical model, including those involving the four TEIQue-SF indicators **(**the low reliability of *control* and *sociability* indicators should make their results to be interpreted with caution).

Hypothesis 1. Students with higher *trait EI* will show a greater level of *career adaptability*. The correlation between the two latent variables, *trait EI* and *career adaptability* was high and positive (r_{xm} = .65; obtained from the CFA). Regarding the observed variables, *trait EI* scores showed significant correlations with global (.50) and indicators scores of *career adaptability* (highest with *control* = .55, and lowest with *concern* = .32). Table 1 presents the correlations among indicators of *trait EI* and *career adaptability*: the lowest value was between *sociability* and *concern* (.11), and the highest between *well-being* and *control* (.56).

Hypothesis 2. Students with higher *trait EI* will show a greater level of *academic engagement*. The correlation between the latent variables *trait EI* and *academic engagement was* high and positive (r_{xy} = .43), as well as among the observed variables: global (.39) and dimensions (*dedication* = .37, *vigor* = .35, and *absorption* = .33). The indicators of the TEIQue-SF also showed positive correlations with the indicators of *academic engagement*. The lowest value was between *sociability* and *vigor* (.12), and the highest between *well-being* and *dedication* (.40).

Hypothesis 3. Students with higher *career adaptability* will show a greater level of *academic engagement*. The correlation between the latent variables *career adaptability* and *academic engagement* was high (r_{my} = 68). The global observed scores on *career adaptability* showed significant correlations with global (.55) and indicators scores of *academic engagement*: *vigor* (.51), *absorption* (.48), and *dedication* (.45). The indicators of the *career adaptability* also showed positive correlations with the indicators of *academic engagement*: the lowest value was between *control* and *absorption* and between *dedication* and *curiosity* (.39 in both cases), and the highest between *confidence* and *vigor* (.57).

Table 1
Correlations between observed variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.TEIQue-SF														
2.Well-being	.82**													
3.Self-control	.65**	.39**												
4.Emotionality	.75**	.51**	.30**											
5.Sociability	.60**	.41**	.20**	.29**										
6.Engagement	.39**	.38**	.24**	.25**	.17**									
7.Vigor	.35**	.33**	.24**	.21**	.12**	.92**								
8.Dedication	.37**	.40**	.18**	.25**	.18**	.82**	.61**							
9.Absorption	.33**	.29**	.22**	.22**	.15**	.91**	.79**	.59**						
10.CAAS	.50**	.51**	.26**	.34**	.25**	.55**	.51**	.45**	.48**					
11.Concern	.32**	.36**	.13**	.24**	.11**	.52**	.48**	.44**	.47**	.83**				
12.Control	.55**	.56**	.29**	.36**	.32**	.45**	.40**	.43**	.39**	.85**	.57**			
13.Curiosity	.35**	.31**	.18**	.24**	.22**	.47**	.43**	.39**	.43**	.84**	.62**	.61**		
14.Confidence	.47**	.49**	.28**	.33**	.19**	.61**	.57**	.53**	.52**	.86**	.61**	.68**	.60**	

Note. ** p < .01; TEIQue-SF = Trait Emotional Intelligence Questionnaire – Short Form; CAAS = Career Adapt-Abilities Scale.

Mediation analysis

Hypothesis 4. Career adaptability will be a positive mediator of the relationship between trait EI and academic engagement. Goodness-of-fit indices for the mediation analysis are given in Table 2, where it can be seen that all models presented a reasonably good fit according to the fit indices considered.

Firstly, the total effect model (see Figure 2, M1) had a very good fit ($_{SB}\chi^2(13)$ = 36.14; NNFI = .966, CFI = .979, RMSEA = .055), where trait EI explained 18.8% of variance of *academic engagement* with a standardized coefficient of .434 ($p < .001$). Secondly, goodness-of-fit indices of the indirect effect model (see Figure 2, M2) were acceptable ($_{SB}\chi^2(42)$ = 174.76; NNFI = .901, CFI = .925, RMSEA = .072). The explained variance of *academic engagement* was 45.9%. *Trait EI* predicts *career adaptability* (γ = .646, $p < .001$), *career adaptability* predicts *academic engagement* (γ = .677, $p < .001$), and there was a statistically significant indirect effect between *trait EI* and *academic engagement* (γ = .437, $p < .001$). Thirdly, when the direct effect was included in the model (see Figure 2, M3), the fit was also acceptable ($_{SB}\chi^2(41)$ = 170.73; NNFI = .899, CFI = .925, RMSEA = .073), and 46% of variance of *academic engagement* was explained. However, the difference between M3 and M2 was not statistically significant ($\Delta_{SB}\chi^2$ scaled differences = 1.14, $\Delta df = 1$, $p = .285$). The indirect effect of *trait EI* on *academic engagement* was significant (γ = .445, $p < .001$), but not in the case of the direct effect (γ = -.015, $p = .787$). The asymmetric confidence interval (CI) obtained to test the significance of indirect or mediated effect based on the product distribution was [.388, .633], and as zero is outside the 95% CI, the mediated effect was statistically significant. These results support the full mediation model proposed in Figure 1, which affirms that *trait EI* influences *academic engagement* through the effect it has on *career adaptability*, an important contribution for understanding the relationships between these variables.

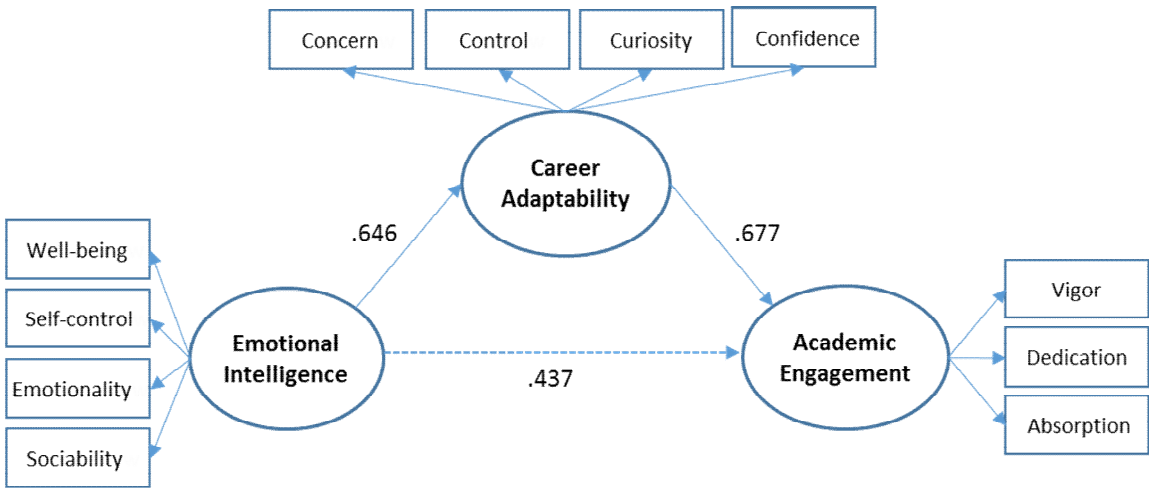
Table 2
Goodness-of-fit indices of mediation models

Models	$_{SB}\chi^2$	*df*	NNFI	CFI	RMSEA	90% CI
M1. Total effect	36.14**	13	.966	.979	.055	[.034, .077]
M2. Indirect effect	174.76**	42	.901	.925	.072	[.061, .084]
M3. Indirect & direct effects	170.73**	41	.899	.925	.073	[.062, .085]

Note. **p < .01, $_{SB}\chi^2$ = Satorra-Bentler's chi-square, *df* = degrees of freedom, NNFI = Non-normed fit index, CFI = Comparative fit index, RMSEA = Root-mean-square error of approximation, and 90% CI = confidence interval of RMSEA.

M1

M2



M3

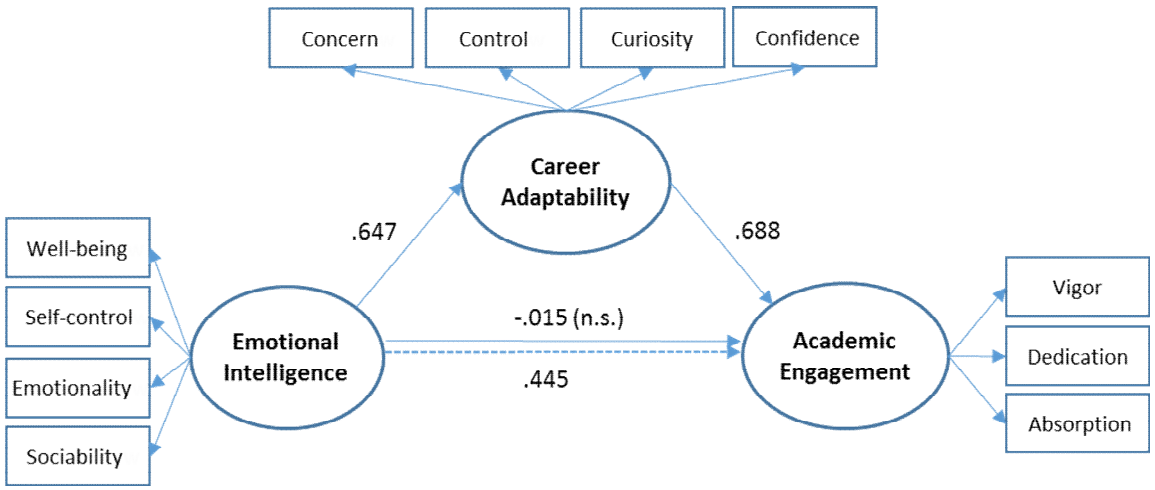


Figure 2. Steps of mediation analysis.
M1. Total effect model; M2. Indirect effect model; M3. Indirect and direct effects model.
- -> Indirect effects
→ Direct effects
n. s. = not significant

Discussion

The main aim of this research was to test the possible mediating role of career adaptability resources on the relationship between trait EI readiness and academic engagement as adaptation outcome. The results confirmed the positive relation between trait EI and career adaptability, lending support to the first hypothesis and confirming the findings of previous research (Di Fabio & Saklofske, 2014; Puffer, 2011). Positive and significant correlations were observed for global, factor, and latent scores.

The positive relationship between trait EI and academic engagement was also confirmed, which lends support to the second hypothesis, and confirms previous research findings briefly covered in the introduction (Durán et al., 2006). As was the case for career adaptability, positive correlations were observed for global, factor, and latent scores.

Last, the positive relationship between career adaptability and academic engagement was also confirmed, thus supporting the third hypothesis and previous findings in the literature (Merino-Tejedor et al., 2016).

Perhaps the highlight finding of this study was the confirmation of the mediating role of career adaptability on the relationship between trait EI and academic engagement, confirming the mediating role found in previous research (Li et al., 2015; Merino-Tejedor et al., 2016; Nilforooshan & Salimi, 2016). In confirming the existence of total mediation, this study makes a new and valuable contribution that allows for a more precise clarification of the interrelationships between trait EI, career adaptability, and academic engagement. Specifically, we suggest that career adaptability is a mediating variable in the middle of a three-step model, with trait EI as an antecedent and academic engagement as an outcome variable. The results showed that college students with greater trait EI show higher academic engagement, but this relationship is fully mediated by greater career adaptability.

There are important practical implications to the findings, which indicate that through optimizing trait EI and career adaptability, college students can improve the way in which they build their careers and their academic engagement. Such interventions can intensify the effort that university students apply to their studies and, as a result, reduce drop-out rates at university. The structure of the CAAS suggests specific lines of interventions. Concern has to do with the degree to which students are involved in the preparation of their future, so it is important to improve self-awareness and to encourage students to be conscious of the importance of investing time planning their professional future. Control is a dimension related to self-regulation and decision-making; this component suggests helping students to consider their career choices, analyzing opportunities and drawbacks. The third dimension, curiosity, refers to the extent to which a person scans the surrounding environment for relevant information to make appropriate decisions; in this case, it seems appropriate to help students to search for and manage occupational information. Finally, confidence has to do with the degree of certainty people show in solving problems and overcoming the obstacles that come across their way; this can be achieved through an appropriate performance of the previous aspects, by way of an open, active, and flexible attitude toward the process of career design.

Universities can develop career counseling programs that allow the participants to make the right decisions when they have to face their career planning. These programs should involve the students in activities such as self-analysis, setting personal goals,

seeking and managing occupational information, and preparing for the transition from university to work. For these purpose, it is necessary the presence of counseling departments or services within the university.

Limitations and future research

Among the limitations of the present research, the most notable is the cross-sectional nature of the research design. Although mediation analysis provides a means of explaining putative causal relationships, cross-sectional designs do not guarantee temporal precedence. Therefore, it appears that longitudinal studies will be required at some point in order to enhance our understanding of the progression of university students, from their enrolment at university to completing their studies and entering the labor market.

Another limitation is the low internal consistency of some of the TEIQue-SF dimensions (self-control and sociability). However, it should be noted that the objective was not to analyze the role of the dimensions of trait EI. The TEIQue-SF was designed to yield a global trait EI score and this is the way it was mainly used in this study, where its reliability is acceptable.

In addition, it is important to recognize that it is necessary to improve the control of data quality, the internal structure of the measures, and the selection of the sample in order to generalize the results to the university population; although there are more women than men in most degrees, the distribution of the participants by gender (only 35.2% males) may not be representative of the current university population in our country.

Future research should also consider the possibility that trait EI has gender-specific effects. The relationship between trait EI and vocational identity has already been studied from this perspective (Puffer, 2011), with findings indicating that the construct was a significant predictor of vocational identity in women, but not in men. It would also be interesting to analyze the differential role of the dimensions of emotional intelligence and not only to consider it in its global form. In this case it would be necessary to use the unabridged form of the questionnaire, given the problems of low reliability of some scales of the short form. Furthermore, it would be interesting to test in which specific degree and year the mediation effect found in this study appears more strongly.

Another interesting line of research would be to extend the theoretical model of mediation to four steps, along the lines of Savickas's "Career Construction Theory" (Savickas, 2013). In this four-step model, vocational identity could even be included as a result, instead of academic engagement, a mediation model which would suppose a significant advance in the field of vocational development.

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