



Effects of emotional intelligence on entrepreneurial intention and self-efficacy

Roxana Andreea Mortan^a, Pilar Ripoll^{a*}, Carla Carvalho^b, and M. Consuelo Bernal^a^aIDOCAL, University of Valencia, Spain^bUniversity of Coimbra, Portugal

ARTICLE INFORMATION

Manuscript received: 20/12/2013

Revision received: 08/09/2014

Accepted: 01/11/2014

Keywords:

Emotional intelligence

Entrepreneurial intention

Entrepreneurial self-efficacy

Personality traits

ABSTRACT

Past studies associated emotional intelligence with positive workplace outcomes, such as job performance and job satisfaction. However, to date, the relationship between emotional intelligence and individual differences in entrepreneurship has been scarcely examined. In this study, the contribution of emotional intelligence dimensions to entrepreneurial potential is explored, controlling for the influence of personality traits and demographic variables. Using a sample of 394 participants, it has been tested, by means of multiple hierarchical regression analyses, the mediating role of entrepreneurial self-efficacy in the relationship between emotional intelligence dimensions and the intention to become entrepreneur. Results indicate that two dimensions of emotional intelligence, regulation and utilization of emotions, positively affect entrepreneurial self-efficacy. In turn, the perception of self-efficacy mediates the relation between emotional intelligence and the intention to become an entrepreneur.

© 2014 Colegio Oficial de Psicólogos de Madrid. Production by Elsevier España, S.L. All rights reserved.

Efectos de la inteligencia emocional sobre la intención y la autoeficacia emprendedora

RESUMEN

Estudios previos relacionan la inteligencia emocional con resultados positivos en el puesto de trabajo, tales como el desempeño y la satisfacción laboral. Sin embargo, la relación entre la inteligencia emocional y las diferencias individuales en emprendimiento han sido escasamente examinadas. En el presente estudio se analiza el efecto de las dimensiones de la inteligencia emocional sobre el potencial emprendedor, tras controlar la influencia de los rasgos de personalidad y variables demográficas. Concretamente, con una muestra de 394 participantes, por medio de análisis de regresión jerárquica, se pone a prueba el rol mediador de la auto-eficacia emprendedora en la relación entre las dimensiones de la inteligencia emocional y la intención de llegar a ser un emprendedor. Los resultados indican que dos dimensiones de la inteligencia emocional, la regulación y la utilización de emociones, afectan positivamente a la auto-eficacia emprendedora. Además, la percepción de auto-eficacia media la relación entre la inteligencia emocional y la intención de ser un emprendedor.

© 2014 Colegio Oficial de Psicólogos de Madrid. Producido por Elsevier España, S.L. Todos los derechos reservados.

Palabras clave:

Inteligencia emocional

Intención emprendedora

Auto-eficacia emprendedora

Rasgos de personalidad

In the last years, emotional intelligence has become a major topic of interest in scientific circles as well as in the lay public (Bar-On, 2006). The term *emotional intelligence* (EI) refers to the mental processes involved in the recognition, use, understanding, and management of one's own and others' emotional states to solve problems and regulate behaviour (Mayer & Salovey, 1997).

Researchers analyzed the relationships between EI and different socio-psychological variables (Extremera, Fernández-Berrocal,

Mestre, & Guil, 2004). A relevant amount of research suggest that EI leads to better social relations and mental and physical well-being (Mayer, Roberts, & Barsade, 2008), and predicts job satisfaction and job performance (O'Boyle, Humphrey, Pollack, Hawver, & Story, 2011). Nevertheless, despite the increasing interest on EI as a key factor for career success, to date little research has analyzed the relationship between EI and individual differences in entrepreneurship (Ahmetoglu, Leutner, & Chamorro-Premuzic, 2011; Zampetakis, Beldekos, & Moustakis, 2009).

In this context, the aim of the present study is to analyze the relationships between the EI dimensions (appraisal and expression of emotions, regulation of emotions, and utilization of emotions) and entrepreneurial intention mediated by entrepreneurial self-efficacy,

*Correspondence concerning this article should be addressed to Pilar Ripoll Botella. Faculty of Psychology. University of Valencia. Av. Blasco Ibáñez, 21. 46010 Valencia, Spain. E-mail: Pilar.Ripoll@uv.es

controlling the influence of Big Five personality factors and demographic variables (age, gender and, country).

Emotional Intelligence

In the scientific psychological literature EI was introduced by Salovey and Mayer, in 1990, and popularized by Goleman (1995), with his best-seller "Emotional Intelligence". Over the years, several researchers have provided definitions of EI (e.g., Bar-On, 1997; Goleman, 1995). The most widespread in the academic world is given by Salovey and Mayer (1990). In 1990 they first defined EI as a type of social and personal intelligence involving "the ability to monitor one's own and others' feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (op. cit., p. 189). In 1997 they refined this definition by including four interrelated dimensions: perception, appraisal, and expression of emotions; emotion facilitation of thinking; understanding and analyzing emotional information, employing emotional knowledge; and regulation of emotions (Mayer & Salovey, 1997). As Cartwright and Pappas (2008) noticed, they remain committed to the idea that "EI lies at the intersection between mental processing of emotional information and its integration with cognitive information" (op. cit., p.154).

In the current scientific literature, different approaches to the construct can be found, the specific-ability approach, the integrative approach, and the mixed model, which are somehow compelling and complementary (Fernández-Berrocal & Extremera, 2006).

The specific-ability approach focus on particular skills and capabilities important for EI (Mayer et al., 2008). The principal abilities identified by the authors are: *emotional perception and identification*; *the use of emotional information in thinking, reasoning about emotions*, in particular the appraisal, classification, categorization of emotions and language abilities to communicate these emotions; last but not least, the *emotion management* in self and in others, through which one is able to engage, prolong or detach from an emotional state, monitor and reflect on feelings, and reframe the perception of certain situations (Cartwright & Pappas, 2008; Mayer, et al., 2008).

The specific-abilities identified by the authors reflect the four-branch model developed by Mayer and Salovey (Mayer & Salovey, 1997; Salovey & Mayer, 1990). It is an integrative approach, as they join each area to have an overall EI. Each area is viewed as developed from early childhood onward (Mayer et al., 2008). Moreover, these four branches are hierarchically organized: perception of emotion is at the basic level, and emotion management is at the highest and most complex level, so the regulation of one's and other's emotion is built on the basis of the competencies of the three other branches (Fernández-Berrocal & Extremera, 2006).

Another approach to EI is the Mixed-Model, so called because it targets mixed qualities. It has been proposed by Bar-On (1997), who defined EI as an "array of non cognitive capabilities, competencies, and skills that influence one's ability to succeed in coping with environmental demands and pressures" (p. 14). Cartwright and Pappas (2008) noticed that this model, similarly to Goleman's, included five broad categories: *intrapersonal emotion skills*, *interpersonal emotion skills*, *adaptability*, *stress management*, and *general mood*.

Emotional intelligence have often been associated with important life outcomes, such as better psychological well-being (Schutte, Malouff, Thorsteinsson, Bhullar, & Rooke, 2007), high-quality social relationships (Lopes et al., 2004), and increased career success. Indeed, results of previous studies showed that EI predicts work performance (O'Boyle et al., 2011), job satisfaction, work commitment, and job involvement (Carmeli, 2003). Lopes, Grewal, Kadis, Gall, & Salovey (2006) investigated the relation between emotional intelligence and positive workplace outcomes. They found that the

overall EI was significantly related to several indicators of work performance, to ratings of interpersonal facilitation, to affect, and to attitudes. In line with these findings, a previous longitudinal study (Snarey & Vaillant, 1985) found that work performance was influenced more by individuals' abilities to cope and manage emotions, handle stress and frustration, and get along with other people, than by IQ. Accordingly, it is possible to infer that EI is an important predictor of significant outcomes across different samples in a number of real-world domains.

The above mentioned studies focus on some outcomes that EI can predict, but there are other outcomes it could envisage. Recently, some authors argue that EI could have an important role in the prediction of entrepreneurship (e.g., Ahmetoglu et al., 2011; Chell, 2008; Zampetakis et al., 2009).

Entrepreneurship

Entrepreneurship is the major source of employment, economic growth, innovation, promotion of products and service quality, competition, and economical flexibility of today's society (Hisrich, Langan-Fox, & Grant, 2007). It is a multi-dimensional concept that occurs in different contexts (economic, technological, managerial, laboural) and in all types of organizations. Chell (2007) defined entrepreneurship as "the process of recognising and pursuing opportunities with regard to alienable and inalienable resources currently controlled with a view to value creation" (p. 18). Entrepreneurship is about people, their choices and actions in starting, taking over or running a business, or their involvement in a company's strategic decision-making.

Today's working environment undergoes too big and complex changes, mainly due to various socioeconomic and psychosocial factors which push the labor market towards knowledge-based activities. The labor market is evolving through the removal of barriers and through mutual recognition and harmonization. These have led to opportunities for new entrepreneurial initiative, making self-employment an important way of professional development. Entrepreneurship contributes to job creation and economic growth, boosts productivity, and increases competitive pressure, pushing companies to react by improving efficiency and/or introducing innovation. Moreover, it unlocks personal potential, as work is not only for money. Self-actualization, satisfaction, and taste for independence are important motivators too (European Commission, 2003). Accordingly, entrepreneurship play a positive role in delivering wealth, jobs, diversity of choice, and personal development.

In psychology, researchers have focused primarily on the analysis of the antecedents of entrepreneurial behavior and entrepreneurial potential. In this context, a great number of studies have explored the association between the Big Five personality traits and entrepreneurial behavior, and the intent to undertake this process. Recently, Brandstätter (2011) summarized five meta-analyses (Rauch & Frese, 2007; Stewart & Roth, 2001; Stewart & Roth, 2007; Zhao & Seibert, 2006; Zhao et al., 2010), comprehensive of the main studies on personality aspects of entrepreneurship. The results of these meta-analyses suggest that personality traits contribute substantially to the way entrepreneurs think, what they aim for, what they do, and what they actually achieve. Given that entrepreneurial intentions and behavior depend on individual differences, researchers are questioning the extent to which emotional intelligence can be a significant predictor of those. Next, the results of research investigating the relationship between emotional intelligence and entrepreneurship carried out so far are described.

Emotional Intelligence and Entrepreneurship

Although currently researchers dedicate a lot of attention to the concept of entrepreneurship and its process, as well as to the concept

of emotional intelligence, there has been little effort to assess whether EI dimensions have a role to play in the entrepreneurial process. In particular, there is almost no literature on the effects of EI on entrepreneurial potential.

Zampetaskis et al. (2009) argue that EI affects entrepreneurial behavior in two ways: the first is through the self-evaluation of emotional efficacy – employees with high self-perceived EI may exhibit high tolerance to stress and environmental stressors; the second concerns individuals with high EI, who tend to have higher affectivity, informing proactive and creative dispositions and so facilitating entrepreneurial behavior.

Zampetaskis et al. (2009) investigated the relationship between entrepreneurial behavior and perceived organizational support (POS) and emotional intelligence (EI). Their findings suggest that both variables correlate with entrepreneurial behavior, understood as a set of activities going from independent/autonomous to integrative/cooperative behavior that aims to get things done with entrepreneurial ways and contribute to a creation of value for the organization. Specifically, they saw that there is a direct effect of EI on entrepreneurial behavior, which may imply that employees with high EI are more aware of the factors that contribute to their experience of positive and negative emotions. Accordingly, the authors suggest that entrepreneurial actions might be filtered through employee perceptions of their emotional abilities (Zampetaskis et al., 2009).

The prediction of EI related to entrepreneurship has been a question mark also for Ahmetoglu et al. (2011), who connected EI to entrepreneurial behavior and success, controlling for personality traits, demographic variables, and individual differences in entrepreneurial personality. More specifically, they investigated whether EI positively predicts entrepreneurial activity and achievement, and if Core Self-Evaluation (CSE) and Measure of Entrepreneurial Tendencies and Abilities (META), which are personality measures, would positively predict entrepreneurial activity. Results showed that EI correlates significantly with most entrepreneurial outcomes they examined, that is, entrepreneurial behavior to generate income, corporate entrepreneurship, social entrepreneurship, entrepreneurial activity during school/college, and entrepreneurship through innovation/invention. Thus, in this study the authors demonstrated that EI has an incremental validity in the prediction of some entrepreneurial activities beyond that of other personality and demographic variables. Further, in line with previous research, they suggest that emotionally intelligent individuals are more likely to engage in innovative entrepreneurial activities, and tend to have higher affectivity, informing creative dispositions and facilitating innovation, which are key aspects of entrepreneurship. Ahmetoglu et al. (2011) conclude claiming that there are several individual differences in personality and ability which influence entrepreneurial process, and showed that EI, CSE, and META are important contributors to entrepreneurship.

Self-efficacy is a motivational construct that has been shown to influence behavior in several ways. Expectations of personal efficiency determine the initiation of behaviors, how much effort will be spent, and how long it will be sustained in the face of obstacles and aversive experiences (Bandura, 1977). According to Bandura (1977), self-efficacy is influenced by four principal sources of information: performance accomplishments, vicarious experience, persuasion, and judgments of one's own physiological states, such as emotional arousal.

For those considering entrepreneurship for the first time, and more in general for all change agents, it is essential to believe in own capabilities and have high self-efficacy. To be successful as entrepreneur, an optimistic view of the personal efficacy is often a key factor. The fact that emotional intelligence can influence the perception of entrepreneurial self-efficacy has been demonstrated by Salvador (2008), who found out that some dimensions of EI have a

significant positive relationship with entrepreneurial self-efficacy. Specifically, the author found a close relationship between one category of ESE scale, called development of new products and market opportunity, and some EI dimensions, namely, utilization of emotions, regulation of emotions, and emotional clarity. Her results suggest that emotional intelligence plays an important role on the perception of entrepreneurial self-efficacy. The author supports the idea that individuals with high EI have higher sociability and are perceived as persons with more and better opportunities to take entrepreneurial activities.

Self-efficacy can influence also entrepreneurial intentions (Lee, Wong, Der Foo, & Leung, 2011). In previous studies, self-efficacy has been proposed as a critical antecedent of entrepreneurial intentions and behavior (Lee et al., 2011; Pihie, 2009). Chen, Greene, and Crick (1998) provided empirical evidence that entrepreneurial self-efficacy was positively related to students' intentions to start their own business. Evidence to strengthen the link between entrepreneurial intention and self-efficacy is provided by the study of Zhao, Seibert, and Hills (2005), who investigated the mediating role of self-efficacy in the development of student's intentions to become entrepreneurs. Precisely, their goal was to check whether entrepreneurial self-efficacy mediates the relationship between individual-level antecedent factors, such as gender, previous entrepreneurial experience, perceptions of formal learning, risk propensity, and entrepreneurial intentions. Their results showed that perceptions of formal learning, previous entrepreneurial experience, and risk propensity were significantly related to entrepreneurial self-efficacy and had an effect on entrepreneurial intention.

In accordance with the above mentioned literature, the main purpose of the present study is to analyze the relationship between EI dimensions (*appraisal and expression of emotions, regulation of emotions, and utilization of emotion*) and entrepreneurial intention, mediated by entrepreneurial self-efficacy, controlling for the influence of personality characteristics (*Neuroticism, Extraversion, Openness, Agreeableness, Consciousness*) and demographic variables (*gender, age and country*).

Based on previous findings, the following hypotheses are proposed. After controlling for the effects of personality traits and demographic variables, we expect to find:

H1. A positive relationship between emotional intelligence dimensions and entrepreneurial self-efficacy.

H2. A positive relationship between entrepreneurial self-efficacy and entrepreneurial intention.

H3. Emotional intelligence will have an indirect effect on entrepreneurial intention, mediated by entrepreneurial self-efficacy.

Method

Participants and Procedures

The sample consists of 394 volunteer students of the University of Valencia (Spain, 51.7%) and the University of Coimbra (Portugal, 48.3%), aged between 18 and 35. Data was gathered among several disciplines, such as psychology (50.5%), master in work organizational and personnel psychology (4.4%), labor relations and human resources (13.3%), educational science (10.2%), social education (5.3%), social service (4.6%), medicine and dental hygiene (2.7%), law (1.5%), communication sciences (1.4%), economy (1.1%), biotechnology (1.1%), engineering (0.9%), and the remaining 3% belong to other disciplines, such as architecture, geography, and sports sciences. Females were predominant (78.2%) in the sample. Most participants, 84%, were only studying and 16% were both studying and working.

Participants completed a questionnaire that included measures of entrepreneurial intention, entrepreneurial self-efficacy, emotional intelligence, and the big five personality traits. The compilation of

the questionnaire required circa 15-20 minutes. Before beginning, researchers gave instructions on the questionnaire, guaranteeing anonymity and confidentiality of responses.

Measures

Entrepreneurial self-efficacy. The scale used to measure this variable is the Entrepreneurial Self-Efficacy (ESE) scale by De Noble, Jung, and Ehrlich (1999), in its version adapted and validated in Spain (Mariano, Palaci & Morales, 2006) and translated to Portuguese through double translation. The final version of the scale consists of 23 items and responses are given on a five-point Likert' scale, which goes from *completely unable* (1) to *totally able* (5), answering the following question: "If you had your own business, to what degree you think you would be able to effectively perform each of the following tasks?" Some examples of items of entrepreneurial self-efficacy scale are: "Identify new areas of potential growth, develop a work environment that encourages people to do new things, work effectively under continuous stress, pressure, and conflict".

Entrepreneurial intention. This variable has been measured with two items. Specifically, following the procedure adopted by other authors (Krueger, Reilly, & Carsrud, 2000; Sánchez, 2009), researchers asked participants to indicate their intention to start a new business or firm in the next five years. The responses were given on a five-point Likert scale, going from *totally disagree* (1) to *totally agree* (5).

Emotional intelligence. EI has been measured with the scale developed by Schutte et al. (1998), called Shutte Self Report Inventory (SSRI), in its adaptation to Spanish by Chico (1999) and translated to Portuguese through double translation. This scale has been developed based on the original model of Salovey and Mayer (1990) in its revised format (Mayer & Salovey, 1997; Mayer, Salovey, & Caruso, 2002). It includes 33 items and is built on three dimensions: appraisal and expression of emotions in self and others with 13 items; regulation of emotions in self and others with 10 items; and 10 items for utilization of emotions. Item samples are respectively: "I am aware of my emotions as I experience them", "I know when to speak about my personal problems to others", "When I am faced with obstacles, I remember times I faced similar obstacles and overcame them". In this work, the breakdown made by Chico (1999) has been followed, adapting it to the sample and resulting in 13 items within the first dimension, 10 items in the second and 7 items in the third. Respondents used a five-point Likert' scale, on which 1 represents *strongly disagree* and 5 represents *strongly agree*.

Personality traits. To measure the Big Five personality traits we used the NEO Five Factor Inventory (NEO-FFI, Costa & McCrae, 1992),

which has been adapted to Spanish by Cordero, Pamos, and Seisdedos (1999) and translated to Portuguese through double translation. The NEO-FFI comprises 60 items and each dimension includes 12 items. We used the Spanish structure proposed by Cordero et al. (1999). Examples of items per personality dimension are: Neuroticism: "I often feel inferior to others"; Extraversion: "I feel comfortable around people"; Openness: "I have a wide variety of intellectual interests"; Agreeableness: "When I have been offended, I try to forgive and forget"; Conscientiousness: "I work hard to achieve my goals". It uses a five point-Likert response format, ranging from *strongly disagree* to *strongly agree*.

Data analyses

In order to determine the unidimensionality and construct validity of the Entrepreneurial Self-Efficacy scale, an exploratory factor analysis (EFA) has been performed using SPSS statistics package version 18, according to the guidelines of Field (2005).

With the purpose of examining whether perceived EI dimensions would account for incremental variance in entrepreneurial self-efficacy mediating the intention to become an entrepreneur, beyond the level attributable to personality traits and demographic variables (gender, age, and country), two series of hierarchical multiple regression analyses have been executed.

The indirect mediating role of ESE has been analyzed using the procedure for testing multiple mediation outlined by MacKinnon (2008), which involves estimating two separate regression equations. The basic strategy consists of three-step hierarchical regression: demographic variables are entered as covariates in the first step, Big Five personality factors are inserted in the second step to control for any possible influence of this measure on entrepreneurial self-efficacy, and the three EI dimensions (appraisal and expression of emotions, regulation of emotions, and utilization of emotions) are entered in the last step. A similar procedure is repeated also for the second multiple regression analysis with four steps, adding ESE as a mediator in the final step. The results of these analyses are reported subsequently and briefly presented in Tables 2 and 3.

Results

Preliminary Analyses

Descriptive statistics and inter-correlations among all measured variables are presented in Table 1. The internal reliability of each scale has been examined and Cronbach's alphas for each variable are shown between brackets.

Table 1
Means, Standard Deviations, Correlations, and Reliabilities of the Study Variables

Variables	M	SD	1	2	3	4	5	6	7	8	9	10
1. Appraisal and expression of emotions	3.60	0.52	(.82)									
2. Regulation of emotions	3.61	0.54	.70**	(.78)								
3. Utilization of emotions	3.56	0.55	.65**	.65**	(.70)							
4. Entrepreneurial self-efficacy	3.56	0.51	.39**	.44**	.45**	(.89)						
5. Entrepreneurial intention	2.33	1.17	.13**	.11*	.09	.24**	(.83)					
6. Personality - Neuroticism	2.83	0.64	-.17**	-.42**	-.12*	-.06	-.04	(.82)				
7. Personality - Extraversion	3.75	0.56	.40**	.42**	.36**	.22**	.01	-.31**	(.82)			
8. Personality - Openness	3.56	0.58	.27**	.22**	.29**	.16**	.01	-.07**	.28**	(.78)		
9. Personality - Agreeableness	3.44	0.51	.15**	.23**	.16**	-.01	-.10*	-.27**	.21**	.17**	(.71)	
10. Personality - Conscientiousness	3.43	0.55	.23**	.33**	.22**	.20**	-.01	-.29**	.13**	.03	.27**	(.80)

Note. Internal reliabilities (Cronbach's alphas are in brackets).

* $p < .05$, ** $p < .01$

The results of the exploratory factor analysis on ESE scale indicate that the average communality score among the items in this sample is .43, showing main loadings on one factor, whereas the KMO is .93, indicating a compact pattern of correlation and supported by the Bartlett's test of sphericity significant at $p < .001$. The scree plot and the rotation matrix indicate a predominant loading on one factor, which confirms the use of the theoretical construct as a single measure.

The confidence level in the validity of the remaining scales used in this study is supported by the evidence provided by Chico (1999), that validated the EI scale, and Cordero et al. (1999), who adapted and validated the NEO-FFI.

Testing of Hypotheses

The mediation analysis has been tested with a first hierarchical regression analysis, regressing on entrepreneurial self-efficacy the control variables and the emotional intelligence dimensions. Overall results suggest that the variables explain 27.1% of the total variance in the final model ($R^2 = .27, p < .01$). The socio-demographic variables account for 1%, personality dimensions account for 10%, and emotional intelligence subscales explain for 16% of the variance (see Table 2). None of the demographic variables appear to predict entrepreneurial self-efficacy in the hierarchical model. Nevertheless, results indicate that the personality trait Agreeableness shows to be negatively related to entrepreneurial levels of self-efficacy ($\beta = -.133, p < .004$), and the Conscientiousness trait shows a positive relation with entrepreneurial self-efficacy ($\beta = .102, p < .02$).

The first hypothesis has been partially confirmed by a significant positive relation between two EI dimensions and entrepreneurial self-efficacy. These dimensions are regulation of emotions ($\beta = .243, p < .001$) and utilization of emotions ($\beta = .224, p < .001$). The implications of these results are that regulation and utilization of emotions turn to be good predictors of entrepreneurial self-efficacy, even after controlling for the effects of gender, age, country, and personality traits. In contrast, appraisal and expression of emotions has a low β coefficient and does not reach statistical significance.

The mediation model has been tested through a second hierarchical regression analysis, regressing the control variables, the dimensions of EI, and ESE on entrepreneurial intention.

Table 2
Summary of Hierarchical Regression Analysis for Emotional Intelligence Predicting Entrepreneurial Self-Efficacy

Variables	β	R^2	ΔR^2	ΔF	Sig.
Step 1		.011	.011	432	.038
Gender	.073				
Age	-.012				
Spain-Portugal	.075				
Step 2		.109	.099	8.85	.001
Personality - Neuroticism	.067				
Personality - Extraversion	.035				
Personality - Openness	.024				
Personality - Agreeableness	-.133**				
Personality - Conscientiousness	.102***				
Step 3		.271	.161	29.27	.001
Appraisal & expression of emotions	.025				
Regulation of emotions	.243*				
Utilization of emotions	.224*				

Note. β are the standardized regression coefficients.
* $p < .05$, ** $p < .01$, *** $p < .001$

Within the control variables, the demographic variables explain 7% of the variance in the model while personality traits just 0.7%. Gender shows a significant positive relationship with entrepreneurial intention ($\beta = .649, p < .001$). Further analyses (t -test) indicate that males show slightly more intention to become entrepreneur (mean = females 2.1 vs. 2.9 males). Yet, no main effect has been noticed concerning perceived entrepreneurial intention as a function of neither country nor age. Moreover, entrepreneurial intention was regressed on emotional intelligence dimensions. The results indicate that there is a small (1.9%) but significant amount of variance explained by EI dimensions. However, analyzing the effect of each dimension, we can see that the EI dimensions might have only an indirect effect on entrepreneurial intention. Forwarding our mediation hypotheses, a positive relation between ESE and entrepreneurial intention is presumed. The results indicate that ESE has a significant positive relationship with entrepreneurial intention ($\beta = .556, p < .001$). The overall variables account for 13.7% of the total variance in the final model (see Table 3). These results support hypotheses 2 and 3.

Table 3
Summary of Hierarchical Regression Analysis for Emotional Intelligence Predicting Entrepreneurial Intention mediated by ESE

Variables	β	R^2	ΔR^2	ΔF	Sig.
Step 1		.070	.070	30,5	.001
Gender	.649*				
Age	.079				
Spain-Portugal	.034				
Step 2		.077	.007	0.6	
Personality - Neuroticism	-.009				
Personality - Extraversion	.058				
Personality - Openness	.052				
Personality - Agreeableness	-.196				
Personality - Conscientiousness	.029				
Step 3		.096	.019	2.7	.04
Appraisal & expression of emotions	.024				
Regulation of emotions	.241				
Utilization of emotions	.128				
Step 4		.137	.042		.001
Entrepreneurial self-efficacy	.556*				

Note. β are the standardized regression coefficients.
* $p < .05$, ** $p < .01$, *** $p < .001$

Summarizing the model, in the first part we tested the effect of the control variables and EI dimensions on ESE. The results indicate a positive and significant relationship between regulation and utilization of emotions and entrepreneurial self-efficacy. In the second part of the model we tested the effect of the control variables, EI dimensions and ESE on the intention to become entrepreneur. The results showed a positive and significant relationship between ESE and the intention to become entrepreneur impacted by the role of EI (Figure 1).

Discussion

The objective of the current study was to examine the usefulness of EI dimensions to predict entrepreneurial intention mediated by entrepreneurial self-efficacy, when the effects of personality traits and socio-demographic variables are kept under control.

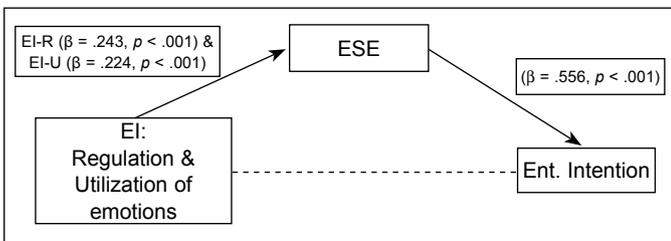


Figure 1. Final Model

The results contributed to confirm the three proposed hypotheses. EI plays an important role in the prediction of entrepreneurial processes, confirming the relation between certain EI dimensions and entrepreneurial intention mediated by self-efficacy. The capacity to regulate and use emotions properly impacts the perception of self-efficacy that, in turn, can inspire youngsters to take entrepreneurial pathways.

Considering country, gender, and age as control variables, they appear as no relevant predictors for entrepreneurial self-efficacy, whereas just one variable influenced entrepreneurial intention, that is, gender. Deepening the analysis of these results, it has been observed that men show slightly more intention to become entrepreneurs than women. This result is consistent with those obtained in previous studies (Leroy, Maes, Sels, & Debrulle, 2009). These authors investigated the gender effect on the variables that shape entrepreneurial intention and found that the effect of gender on intentions was mediated by personal attitudes toward entrepreneurship and by the perceived control over becoming an entrepreneur. The implication of their results suggests that the intention of being an entrepreneur is shaped by different personal reasons, which may be very different for men and women. Although gender is a control variable in this study, it may be interesting for further research to explore to what extent gender interferes with the intention to become entrepreneur and how the perception of self-efficacy could affect this decision, deepening the understanding on this matter.

With regard to another control variable, it has being widely discussed and debated the association of personality traits and entrepreneurship (Brandstätter, 2011; Zhao & Seibert, 2006). Therefore, it has been interesting to observe that agreeableness and consciousness had, respectively, a negative and a positive effect on entrepreneurial self-efficacy in the first analysis, whereas it showed no effect when inserting entrepreneurial intention, confirming our hypotheses.

In line with Ahmetoglu et al. (2011), we can confirm that the prediction effects of EI are above and beyond the impact of socio-demographic variables and personality traits. The first hypothesis has been partially confirmed to the degree that two out of three dimensions of EI scale showed positive and significant relation with entrepreneurial self-efficacy. More specifically, in line with previous findings (Salvador, 2008), the results indicate a positive relation between entrepreneurial self-efficacy and two dimensions of EI, regulation and utilization of emotions, whereas appraisal and expression of emotions showed no significant effect.

The practical implications of these results suggest that EI, and more specifically the capacity to appropriately manage and use emotions, plays an important role in entrepreneurial self-efficacy. Individuals with high emotional intelligence believe in their entrepreneurial abilities and perceive themselves as persons with more and better opportunities in undertaking entrepreneurial activities. Salvador (2008) suggested that a reason for it may lay in the social intelligence, meaning that the individuals with this ability adapt better to the environment and are perceived as more effective by others, probably due to their ability to control and understand emotions. The regulation of emotions implies strategies to engage,

prolong or detach from emotional states, to monitor and reflect on feelings, and to reframe perception of the situation. All these elements can be associated with characteristics of entrepreneurial self-efficacy, such as working under stress, facing unexpected changes, and build an innovative environment. Moreover, also the use of emotional information plays a central role in entrepreneurial self-efficacy, since it is important to be confident and competent when developing a network of relations for business and human resources management.

Previous studies (Ahmetoglu et al., 2011; Zampetaskis et al., 2009) investigated the relationship between EI and various entrepreneurial outcomes, but there is almost no existing literature exploring the effect that EI may have on entrepreneurial intention when mediated by entrepreneurial self-efficacy. Our study broadened the understanding of this relationship, confirming the second and third hypotheses. The second hypothesis has been met – a positive relationship between ESE and the intention to become entrepreneur impacted by the role of EI was shown. The results of this study, in line with the findings of Zhao et al. (2005), provide evidence that the individuals formulate their intention to become entrepreneurs influenced by the perception of high self-efficacy.

In accordance, Lee et al. (2011) investigated the role of self-efficacy on entrepreneurial intention, suggesting that self-efficacy not only influences perceived feasibility but also entrepreneurial intentions. The intentions to start own businesses are boosted by the level of confidence one has in own competencies. To support these results, Pihie (2009) suggests that among the best predictors of students' entrepreneurial intention a leading position is reserved for entrepreneurial self-efficacy.

As a result, self-efficacy together with the ability to handle and use emotions properly are key factors in the development of intentions to start a path of self-employment. However, confidence in one's efficacy alone is not sufficient and must be complemented by a adequate knowledge, training, and experience of business processes, along with a good personal competence in managing emotional situations that may arise during the creation of a business.

Taking entrepreneurial actions can be very challenging and risky, and without adequate emotional coping strategies the success of a business can be jeopardized. As Bandura (1989) suggests, the beliefs of people in their competencies "affect how much stress they experience in threatening or taxing situations and can affect action both directly and indirectly by altering the nature of course of thinking" (op. cit., p. 1177). Therefore, in line with our hypotheses, we may infer that high emotional intelligence together with high perceptions of self-efficacy contribute to the intention of taking entrepreneurial actions.

These findings contribute to confirming and expanding previous studies (Ahmetoglu et al., 2011; Salvador, 2008; Zampetaskis et al., 2009) by using a larger and different sample: in terms of participants, their age, their status, and the cultural environment. Results also extend the existing literature indicating that entrepreneurial self-efficacy provides theoretical explanation for the relationship between two EI dimensions, regulation and utilization of emotions, and entrepreneurial intention.

Limitations and Future Research

Although our study provides interesting evidence that emotional intelligence is associated to entrepreneurial processes, the present findings should be interpreted in the light of some limitations.

Certain limits may be found in the characteristics of the sample, that could be expanded. The heterogeneity of the sample should be also controlled in future studies, as it is composed by students who are studying different subjects and in different study years. The study level as well as the study subject may affect the choice of the working path and, depending on the characteristics, could have a

negative or positive impact on the intention of considering entrepreneurial actions. Therefore, we suggest to scholars who want to replicate this study to take into account the composition of the sample and examine a more homogeneous sample in terms of studies, in particular the ones connected with business, and with students that are close to the end of their academic careers.

Furthermore, since our results showed no relevant difference between the analyzed countries (Spain and Portugal), perhaps due to geographical and cultural proximity of the two countries, it would be interesting to replicate the study in countries with diverse cultures, to see if there are any cultural differences that shape the relationship between emotional intelligence and entrepreneurial intention and self-efficacy.

The data has been collected through self-report instruments, which may limit the predicting validity of the variables. Hence, future studies using other measures in addition to self-report would be recommended. Studies should also include longitudinal designs to understand the causal order between EI and entrepreneurial intention and self-efficacy.

Our study has been limited also by the fact that there is little empirical evidence on the relationship among our variables – very little research has been carried out on entrepreneurial self-efficacy related to EI and entrepreneurial intention. Increasing attention has been dedicated both to entrepreneurship and emotional intelligence in different areas; this study has shown that there is a good reason to give more attention also to the link between these variables. Therefore, we strongly suggest that future research to investigate more into this field should be carried out in order to have more information on the role of emotional intelligence on entrepreneurship.

Finally, it is well known that Europe and elsewhere are facing a big economic crisis for some years now, and obviously this has important consequences for government's and individual choices concerning employment. That is to say, it will be difficult for a country with high unemployment and few resources to undertake or sponsor new businesses. Consequently, the economic instability makes it difficult for individuals to take the risks associated with the initiation of a new business. Therefore, it would be reasonable to think that the current economic situation of the two countries examined do not encourage entrepreneurial initiatives at this time.

Nevertheless, it must be said that this interpretation can mislead a more positive alternative, namely, the high unemployment rate may also represent a saturation of the labor market; therefore, innovation and the creation of new business may enhance the economic growth and the creation of new jobs, so it could represent the solution and not the problem. However, we do encourage scholars to explore the role that economic and environmental variables may play in the relationship between emotional intelligence and entrepreneurial intention when mediated by self-efficacy.

Conclusion

Even though little is known about the truth behind entrepreneurial success, it has not previously been explored from emotions' perspective. Taken as a whole, independently from the influences of socio-demographic characteristics and personality traits, our set of results indicate that individuals with the capacity to regulate and use emotions effectively are more prone to believe they can be successful in entrepreneurial activities; therefore, they feel more effective and have more possibilities to engage in starting a new business. Thus, our study provided a small contribution to support the concept that EI is an important element for being successful in creating a new business.

Several individual differences shape the entrepreneurial process, and it is important to be aware that people will differ in their abilities and tendencies to engage in entrepreneurial activity. The results reported herein are particularly valuable for those individuals,

institutions, and schools that want to promote the training and development of entrepreneurs, as well as for organizations that want to enhance entrepreneurial behavior in their companies.

Training potential entrepreneurs on their emotional intelligence, supporting them in developing their skill to appraise, managing and using their emotions in the challenging situations that entrepreneurial process may bring about, can turn in a key success factor. Thus, we encourage those who want to promote innovation, value creation, and entrepreneurial behavior to give training also on emotional intelligence's aspects, besides the common entrepreneurial training.

Emotional intelligence abilities affect the perceptions of being an effective entrepreneur as well as the intention of undertaking an entrepreneurial path. It may also have relevant implications for those individuals that in today's environment, pushed by the impermeability of the labor market, choose to create new work by setting up a new business. Moreover, ESE could be used to promote entrepreneurial actions in those individuals that believe they do not have the necessary skills to undertake this path without trying or testing their skills.

Our results suggest that the belief of having the capabilities in one's own efficiency is positively related to the intention to become entrepreneur. The assessment and awareness of our self-perception of being or not effective in the role as entrepreneur and the ability to recognize, regulate, and use the emotions might prove decisive factors and may be a competitive advantage in determining the success of the entrepreneurial path and processes.

Conflict of Interest

The authors of this article declare no conflict of interest.

Note

¹The process of double translation has been carried out with the help of Dr. Carla Carvalho and a Portuguese native speaker with excellent knowledge of Spanish. Dr. Carla performed an initial translation from Spanish to Portuguese of the scales, and then it has been retranslated from Portuguese to Spanish by the native speaker, and finally rechecked by Dr. Carla.

References

- Ahmetoglu, G., Leutner, F., & Chamorro-Premuzic, T. (2011). EQ-nomics: Understanding the relationship between individual differences in Trait Emotional Intelligence and entrepreneurship. *Personality and Individual Differences*, 51, 1028–1033. doi: <http://dx.doi.org/10.1016/j.paid.2011.08.016>
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84, 191–215. doi: <http://dx.doi.org/10.1037//0033-295X.84.2.191>
- Bandura, A. (1989). Human agency in Social Cognitive Theory. *American Psychologist* 44, 1175–1184. doi: <http://dx.doi.org/10.1037/0003-066X.44.9.1175>
- Bar-On, R. (1997). *The emotional quotient inventory (EQ-i): Technical Manual*. Toronto: Multi-Health Systems.
- Bar-On, R. (2006). The Bar-On model of emotional-social intelligence. *Psicothema*, 18, 13–25. Retrieved from <http://www.psychothema.com/pdf/3271.pdf>
- Brandstätter, H. (2011). Personality aspects of entrepreneurship: A look at five meta-analyses. *Personality and individual differences*, 51, 222–230. doi: <http://dx.doi.org/10.1016/j.paid.2010.07.007>
- Carmeli, A. (2003). The relationship between emotional intelligence and work attitudes, behavior and outcomes. *Journal of Managerial Psychology*, 18, 788–813. doi: <http://dx.doi.org/10.1108/02683940310511881>
- Cartwright, S., & Pappas, C. (2008). Emotional intelligence, its measurement and implications for the workplace. *International Journal of Management Reviews*, 10, 149–171. doi: <http://dx.doi.org/10.1111/j.1468-2370.2007.00220.x>
- Chell, E. (2007). Social Enterprise and Entrepreneurship: Towards a convergent theory of the entrepreneurial process. *International Small Business Journal*, 25, 5–23. doi: <http://dx.doi.org/10.1177/0266242607071779>
- Chell, E. (2008). *The entrepreneurial personality: A social construction* (2nd ed.). London and New York: Routledge. doi: <http://dx.doi.org/10.4324/9780203938638>
- Chen C.C., Greene, P. G., & Crick, A. (1998) Does Self-Efficacy Distinguish Entrepreneurs from Managers? *Journal of Business Venturing*, 13, 295–316. Doi: [http://dx.doi.org/10.1016/S0883-9026\(97\)00029-3](http://dx.doi.org/10.1016/S0883-9026(97)00029-3)
- Chico, E. (1999). Evaluación psicométrica de una escala de inteligencia emocional. *Boletín de psicología*, 62, 65–78.
- European Commission (2003). *Green Paper: Entrepreneurship in Europe*. Retrieved from European Union Documents. http://eurlex.europa.eu/LexUriServ/site/en/com/2003/com2003_0027en01.pdf

- Cordero, A., Pamos, A., & Seisdedos, N. (1999). *Inventario de Personalidad NEO Revisado (NEO PI-R)*. *Inventario NEO Reducido de Cinco Factores (NEO-FFI)*. Madrid: TEA.
- Costa, P., & McCrae, R. (1992). *Professional Manual. Revised NEO Personality Inventory (NEO PI-R) and NEO Five Factor Inventory (NEO-FFI)*. Odessa, FL: Psychological Assessment Resources.
- De Noble, A., Jung, D., & Ehrlich, S. (1999). *Entrepreneurial self-efficacy: The development of a measure and its relationship to entrepreneurial actions*. Communication presented in Frontiers of Entrepreneurship Research. Waltham.
- Extremera, N., Fernández-Berrocal, P., Mestre, J., & Guil, R. (2004). Medidas de evaluación de la inteligencia emocional. *Revista Latinoamericana de Psicología*, 36, 209-228.
- Fernández-Berrocal, P., & Extremera, N. (2006). Emotional intelligence: A theoretical and empirical review of its first 15 years of history. *Psicothema*, 18, 7-12.
- Field, A. (2005). *Discovering statistics using SPSS (2nd ed.)*. London: Sage.
- Goleman, D. (1995). *Emotional intelligence*. New York: Bantam.
- Hisrich, R., Langan-Fox, J., & Grant, S. (2007). Entrepreneurship research and practice. A call to action for psychology. *American Psychologist*, 62, 575-589. doi: <http://dx.doi.org/10.1037/0003-066X.62.6.575>
- Krueger, N., Reilly, M., & Carsrud, A. (2000). Competing model of entrepreneurial intention. *Journal of Business Venturing*, 15, 411-432. doi: [http://dx.doi.org/10.1016/S0883-9026\(98\)00033-0](http://dx.doi.org/10.1016/S0883-9026(98)00033-0)
- Lee, L., Wong, P., Der Foo, M., & Leung, A. (2011). Entrepreneurial intentions: The influence of organizational and individual factors. *Journal of business venturing*, 26, 124-136. doi: <http://dx.doi.org/10.1016/j.jbusvent.2009.04.003>
- Leroy, H., Maes, J., Sels, L., & Debrulle, J. (2009). Gender effects on entrepreneurial intentions: A TPB multi-group analysis at factor and indicator level. *Academy of Management Annual Meeting* (pp. 1-29). Chicago, USA: Working Paper Steunpunt STIO.
- Lopes, P., Brackett, M., Nezlek, J., Schütz, A., Sellin, I., & Salovey, P. (2004). Emotional Intelligence and Social Interaction. *Personality and Social Psychology Bulletin*, 30, 1018-1034. doi: <http://dx.doi.org/10.1177/0146167204264762>
- Lopes, P., Grewal, D., Kadis, J., Gall, M., & Salovey, P. (2006). Evidence that emotional intelligence is related to job performance and affect and attitudes at work. *Psicothema*, 18, 132-138.
- MacKinnon, D.P. (2008). *Introduction to statistical mediation analysis*. Mahwah, NJ: Erlbaum.
- Mayer, J., & Salovey, P. (1997). What is emotional intelligence? In P. Salovey & D. Sluyter, *Emotional Development and Emotional Intelligence: Implications for Educators* (p. 3-31). New York: Basic Book.
- Mayer, J., Roberts, R., & Barsade, S. (2008). Human Abilities: Emotional Intelligence. *Annual Review of Psychology*, 59, 507-536. doi: <http://dx.doi.org/10.1146/annurev.psych.59.103006.093646>
- Mayer, J., Salovey, P., & Caruso, D. (2002). *Technical manual for Msceit*. Toronto: MHS.
- Moriano, J., Palaci, F., & Morales, J. (2006). Adaptation and validation of Entrepreneurial Self-Efficacy scale in Spain. *Revista de Psicología Social*, 21, 51-64. doi: <http://dx.doi.org/10.1174/021347406775322223>
- O'Boyle, E. H., Humphrey, R. H., Pollack, J. M., Hawver, T. H., & Story, P. A. (2011). The relation between emotional intelligence and job performance: A meta-analysis. *Journal of Organizational Behavior*, 32, 788-818. doi: <http://dx.doi.org/10.1002/job.714>
- Pihie, Z. L. (2009). Entrepreneurship as a career choice: An analysis of entrepreneurial self-efficacy and intention of university students. *European Journal of Social Sciences*, 9, 338-349.
- Rauch, A., & Frese, M. (2007). Let's put the person back into entrepreneurship research: A meta-analysis on the relationship between business owners' personality traits, business creation, and success. *European Journal of Work and Organizational Psychology*, 16, 353-385. doi: <http://dx.doi.org/10.1080/13594320701595438>
- Salovey, P., & Mayer, J. (1990). Emotional intelligence. *Imagination, Cognition, and Personality*, 9, 185-211. doi: <http://dx.doi.org/10.2190/DUGG-P24E-52WK-6CDG>
- Salvador, C. (2008). Impacto de la inteligencia emocional percibida en la autoeficacia emprendedora. *Boletín de Psicología*, 92, 65-80.
- Sánchez, J. (2009). Aprendizaje social e intenciones emprendedoras: Un estudio comparativo entre México, España y Portugal. *Revista Latinoamericana de Psicología*, 41, 107-117.
- Schutte, N., Malouff, J., Hall, L., Haggerty, D., Cooper, J., Golden, C., & Dornheim, L. (1998). Development and validation of a measure of emotional intelligence. *Personality and Individual Differences*, 25, 167-177. doi: [http://dx.doi.org/10.1016/S0191-8869\(98\)00001-4](http://dx.doi.org/10.1016/S0191-8869(98)00001-4)
- Schutte, N., Malouff, J., Thorsteinsson, E., Bhullar, N., & Rooke, S. (2007). A meta-analytic investigation of the relationship between emotional intelligence and health. *Personality and Individual Differences*, 42, 921-933. doi: <http://dx.doi.org/10.1016/j.paid.2006.09.003>
- Snarey, J. R., & Vaillant, G. E. (1985). How lower- and working-class youth become middle-class adults: The association between ego defense mechanisms and upward social mobility. *Child Development*, 56, 899-910. doi: <http://dx.doi.org/10.2307/1130102>
- Stewart, W. H. Jr., & Roth, P. L. (2001). Risk propensity differences between entrepreneurs and managers: a meta-analytic review. *Journal of Applied Psychology*, 86, 145-53. doi: <http://dx.doi.org/10.1037/0021-9010.86.1.145>
- Stewart, W. H. Jr., & Roth, P. L. (2007). A Meta-Analysis of Achievement Motivation Differences between Entrepreneurs and Managers. *Journal of Small Business Management*, 45, 401-421. doi: <http://dx.doi.org/10.1111/j.1540-627X.2007.00220.x>
- Zampetaskis, L.A., Beldekos, P., & Moustakis, V.S. (2009). "Day-to-day" entrepreneurship within organizations: The role of the trait emotional intelligence and perceived organizational support. *European Management Journal*, 27, 165-175. doi: <http://dx.doi.org/10.1016/j.emj.2008.08.003>
- Zhao, H., & Seibert, S. (2006). The Big Five Personality dimensions and entrepreneurial status: A meta-analytical review. *Journal of Applied Psychology*, 91, 259-271. doi: <http://dx.doi.org/10.1037/0021-9010.91.2.259>
- Zhao, H., & Seibert, S., Hills, G. (2005). The mediating role of self-efficacy in the development of entrepreneurial intentions. *Journal of Applied Psychology*, 90, 1265-1272. doi: <http://dx.doi.org/10.1037/0021-9010.90.6.1265>
- Zhao, H., Seibert, S., & Lumpkin, G. T. (2010). The Relationship of Personality to Entrepreneurial Intentions and Performance: A Meta-Analytic Review. *Journal of Management*, 36, 381-404. doi: <http://dx.doi.org/10.1177/0149206309335187>