

# Entrepreneurial skills and socio-cultural factors

Secondary  
education  
students

## An empirical analysis in secondary education students

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### Abstract

**Purpose** – The purpose of this paper is to explore how entrepreneurial skills (such as creativity, proactivity and risk tolerance) and socio-cultural factors (such as role model and businessman image) affect secondary education students' propensity towards entrepreneurial options in their future careers.

**Design/methodology/approach** – A sample of secondary education students in the Region of Murcia (Spain) has been used. Data were collected through questionnaires and analysed using logit estimation. Confirmatory factorial analysis was used to validate the measures.

**Findings** – The results of this research study show that both the skills and socio-cultural factors positively affect entrepreneurial intention of secondary education students. Creativity, proactivity and risk taking promote entrepreneurial career. In addition, those students whose role model is an entrepreneur and have a better understanding of him or her, show a greater propensity towards entrepreneurial career.

**Originality/value** – The contribution to the literature on entrepreneurship is twofold. First, although there are studies focused on identifying the entrepreneurial profile of university students, there is a paucity of empirical evidence relating to entrepreneurial skills at earlier stages of learning. This paper sets out to bridge this research gap. Second, evidence of the importance of socio-cultural factors, role models and entrepreneurial image upon the career orientation of secondary education students is identified and empirically verified. These findings involve are useful in practice, in aiding the design of better and more relevant education programmes at early learning stages.

**Keywords** Skills, Creativity, Entrepreneurship education, Role model, Risk taking, Secondary school students

**Paper type** Research paper

### 1. Introduction

In recent decades, special attention has been paid to identifying the educational needs and entrepreneurial skills which are common to most entrepreneurs (Moriano *et al.*, 2006; Matlay, 2008; Liñán *et al.*, 2011; Fayolle *et al.*, 2014), and to analysing the role played by socio-cultural factors in an entrepreneur's learning process (Bandura, 1978; Shaper and Sokol, 1982; Veciana and Urbano, 2008; Nyström, 2012; Solesvik *et al.*, 2014). There are strands of empirical research that have associated the entrepreneurial behaviour with factors such as, creativity, risk taking and proactivity, which are inherent to the learning process (Shaper and Sokol, 1982; Veciana, 1999; Benavides *et al.*, 2004; Liñán, 2007).

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These factors are relevant in entrepreneurial learning processes since they support innovation, the search of new opportunities, the propensity to take the initiative and to make strategic decisions (Wilson *et al.*, 2007; McGee *et al.*, 2009). Much of the entrepreneurial intention research is focused on those stages which are relevant to a students' chosen labour market and/or university choice (Dohse and Walter, 2011; Shinnar *et al.*, 2012; Piperopoulos and Dimov, 2015). Most research on entrepreneurship education and entrepreneurial intentions focuses mainly upon university students (Matlay, 2011; Solesvik *et al.*, 2013). However, research devoted to the study of entrepreneurial intentions and skills at earlier stages of learning are scarce (Peterman and Kennedy, 2003; Matlay, 2006; Marques *et al.*, 2012; Bernal, 2014).

European and National Institutions consider important to incorporate entrepreneurial skills acquisition at early stages of education (European Commission, 2013). The European Commission has published a number of papers (see, e.g. European Commission, 2008, 2013) which outline best practice for proper development of entrepreneurship skills and stress the importance of involving all stakeholders relevant to the development of entrepreneurial skills (see also Matlay, 2011). It is generally acknowledged that entrepreneurial skills can be taught and upgraded as and when necessary (Jones *et al.*, 2012). Education programmes should be oriented to students and teach them how to be more proactive and creative as well as help them learn to work in teams (Oosterbeek *et al.*, 2010). Entrepreneurial performance is largely related to career success, in particular when an individual becomes the owner of his or her business (Staniewski *et al.*, 2016), hence the importance of studying these factors from the earliest stages of education.

The purpose of this study is to examine how skills related to entrepreneurship and entrepreneurial role models can influence the way in which secondary students choose an entrepreneurial career. We performed an empirical analysis of a sample of 1,244 secondary school students from the Murcia Region, in Spain. Studying entrepreneurship in the context of secondary education is justified for two important reasons. First, this group of students represent a comparatively large quantitative research sample (Elert *et al.*, 2015). Second, these students are approaching the time when they have to make the decision to either pursue higher education or leave the education system to seek work (Marques *et al.*, 2012). Consequently, a better understanding of entrepreneurial skills and educational needs will foster a more focused development path for individuals at an early age.

The results of the study show that both the skills and socio-cultural factors positively affect entrepreneurial intention in secondary school students. Skills such as creativity, proactivity and risk taking promote entrepreneurial careers. Our study contributes in a meaningful way to the research on entrepreneurship in early education, bridging a well defined gap in the specialist literature. It facilitates a better understanding of the process by which entrepreneurial intentions are developed. Despite the continued interest in entrepreneurship education, researchers have paid little attention to primary and secondary educational stages, and focused mainly upon university students. Many researchers and policy-makers agree that entrepreneurship education should be included in all phases of the education system (Gribben, 2006; Liñán, 2007; European Commission, 2013). This gap in the specialist literature causes some uncertainty when designing programmes that focus on entrepreneurial skills development at later educational stages (Elert *et al.*, 2015). Educators may use the results of this research study to encourage entrepreneurial skills in many subjects, without necessarily having to design a specific entrepreneurship programme. In addition, students who have not developed a close link to an entrepreneur, can have an equal opportunities to learn about the role carried out by an entrepreneur in the modern society. In these educational stages, it is desirable that



### 2.1 Entrepreneurial skills: creativity, risk taking and proactivity

Several authors relate entrepreneurial preference to personal traits (Shapero, 1984; Liñán, 2007; Brück *et al.*, 2011). This approach recognises entrepreneurs as people, and analyses their profiles and the characteristics of successful entrepreneurs (Veciana, 1999). The beginnings of this strand of the literature may be found in McClelland (1961). This author defines entrepreneurs through personality traits (independence, propensity to risk, etc.). In fact, the character profile generally accepted as denoting entrepreneurial orientation includes features such as innovation and creativity, risk taking and proactivity (Covin and Slevin, 1989; Sánchez *et al.*, 2005; Chang *et al.*, 2014; Ismail and Zain, 2015). These parameters are not only used to analyse the entrepreneurial behaviour of an individual, but are also used to analyse the entrepreneurial orientation of an organisation or company (Kickul and Gundry, 2002; Kaya, 2015; Oparaocha, 2015). Therefore, both within an organisation and at an individual level, these factors are characteristic of entrepreneurial behaviour (Lumpkin and Dess, 1996; Zampetakis, 2008). McGee *et al.* (2009) recognises basic tasks associated with entrepreneurial skills, such as identifying opportunities, managing uncertainty and risk, and innovating.

*Creativity.* Entrepreneurs are people who exploit market opportunities through innovation processes. Creativity and innovation play a key role in entrepreneurial behaviour. They are therefore the instruments by which entrepreneurs exploit change as an opportunity that did not exist before. Several authors (Ward, 2004; Liñán, 2007) identify creativity as a fundamental skill of entrepreneurs. Indeed, several studies (Zampetakis, 2008; Sarri *et al.*, 2010) perceive a positive association between creativity and entrepreneurial preference in university students. Some authors feel that creativity is synonymous with innovation and initiative (Kickul and Gundry, 2002; Saboia and Martin, 2006). Creativity is a set of multiple attributes and it is an elusive and complex concept (Ward, 2004; Kleiman, 2008). Differences between individuals are due, among other factors, to their style of creative thinking (Ward, 2004).

Motivating and stimulating creative thinking is considered essential in early stages of education. Furthermore, creative thinking can stimulate students' skills regarding teamwork, openness to change, and seeking new approaches to problem solving (Gundry *et al.*, 2014). Creativity is not only the product of genetics. Quite the contrary, it is related to behaviour and personality and therefore, may be modified as the individual gets to know him or herself (Sánchez *et al.*, 2005). Some authors such as Liñán (2007) highlight the need to encourage creativity within the education system because the development of these skills may be essential to identify opportunities (Rahman *et al.*, 2015):

*H1.* Creativity will positively influence secondary students' entrepreneurial preference.

*Risk taking.* Risk aversion is the rejection or low tolerance that a person shows in risk situations. Throughout history, entrepreneurs have been thought to be people who take risks. Therefore, tolerance and risk management are among the psychological traits that characterise entrepreneurs. For this reason, entrepreneurial behaviour has generally been associated with moderate levels of risk appetite (McClelland, 1961; Atilla Öner and Kunday, 2016).

Lüthje and Franke (2003) and Sanchez *et al.* (2005) found evidence of the influence of risk taking in the formation of entrepreneurial intentions in university students. This relationship reflects a positive effect of risk tolerance on entrepreneurial choice

(Prabhu, 2011). Van Auken (2013) continues this line, stating that the propensity to take moderate risk and tolerate uncertainty are psychological traits associated with entrepreneurs:

*H2.* Risk aversion will negatively influence secondary students' entrepreneurial preference.

*Proactivity.* Proactivity is related to taking the initiative, anticipating and exploiting new opportunities. Actions can alter the immediate environment (Bateman and Crant, 1993). Proactive personalities identify opportunities and act upon them, they show initiative, take direct actions and persevere until they achieve a significant change. However, non-proactive people fail to identify and use opportunities to change things. Proactivity implies an emphasis on anticipating and preventing problems before they happen. Some authors find a relationship between proactive personality and career success (Seibert *et al.*, 1999; Gordon *et al.*, 2012). Proactive behaviour tends to be associated with preferring an entrepreneurial option to the comfort of paid employment in university students (Seibert *et al.*, 2001; Uy *et al.*, 2015). Shapero (1984) believes that an entrepreneur has initiative, organises social and economic mechanisms and accepts risks. Thus, Crant (1996) finds a positive relationship between a proactive attitude and entrepreneurial intention:

*H3.* Proactivity will positively influence secondary students' entrepreneurial preference.

## 2.2 Socio-cultural Factors

*Role model.* Role model theory argues that individual behaviour is shaped through socialisation and learning, at different stages of the life cycle (Thomas and Biddle, 1966). Socialisation is influenced by the behaviour of the individual who is taken as a reference (role models). Therefore, role models are people whose life and activities influence the individual and contribute to his/her learning (Bolaños, 2006; Oppedisano and Laird, 2006). There are many studies in university students that associate the role model's behaviour with an individual's entrepreneurial preference (Krueger *et al.*, 2000; Kuratko, 2005; Van Auken *et al.*, 2006). Having an entrepreneurial role model is important in order to choose an entrepreneurial career (Zellweger *et al.*, 2011; Bosma *et al.*, 2012). However, this positive influence is not so clear in a secondary education context. Marques *et al.* (2012) point out that family members have a negative effect on entrepreneurial intention. This result may suggest the negative impact caused by family life:

*H4.* Having an entrepreneurial role model positively influences secondary students' entrepreneurial preference.

*Entrepreneurial image.* Veciana and Urbano (2008) suggest that having a positive image of business will likewise have a positive influence on maintaining a positive attitude towards entrepreneurship. Young people should know the role of entrepreneurs and companies in society. They are not only people who make money associated with high risk; they also promote employment and economic growth. Educational institutions increasingly involve entrepreneurs in their educational programmes to support the real image of businessman among students (Zellweger *et al.*, 2011):

*H5.* Students who have a more positive concept of businessman will show more entrepreneurial preference than others.

### 3. Methodology

#### 3.1 Sample

The sample consisted of 1,244 secondary school students in the Murcia Region, having a total population of 65,000 people (Ministry of Education, 2011). The average age was 15. The sample was obtained through the *Difusión del Espíritu Emprendedor* (Promotion of Entrepreneurial Spirit) project, directed by the *Consejería de Educación, Universidades y Empleo* (Spanish Ministry of Education, Universities and Employment) of the Murcia Region in collaboration with the Local Development Agency (ADLE) of the City of Cartagena. It had a sampling error of 2.7 per cent with a confidence interval of 95 per cent. In total, 35 schools participated. The population size was obtained from the *Consejería* of the Murcia Region. Data collection was performed over the internet, using a questionnaire for all students in this specific educational stage. Fieldwork was conducted during the last quarter of the 2010/2011 academic year.

#### 3.2 Variables and estimation

We analysed how various entrepreneurial skills (creativity, proactivity and risk taking) and socio-cultural factors influence students' propensity to entrepreneurship. To study the effect of these factors in the preference for an entrepreneurial career, we ran the following multivariate analysis, using the logit estimation:

$$\text{Empren}_i = \beta_0 + \beta_1 \text{RolEmp}_i + \beta_2 \text{Imag}_i + \beta_3 \text{Crea}_i + \beta_4 \text{AvRisk}_i + \pi$$

where,  $\text{Empren}_i$  measures the degree of entrepreneurship of a secondary school student using indicators of his/her preferences to start their own business or work for others. Following the procedure used by Leiva (2004) only one item was used to measure entrepreneurial preference. Students were asked to specify their preference for a career option choosing between working for an SME, for a large company, for the government or working in their own business. This variable was turned into a new dummy variable. Thus, variable "Empren" takes value 0 when students choose to work for others and 1 when they choose to be self-employed. Other authors also use just one item (Krueger *et al.*, 2000; Peterman and Kennedy, 2003).

$\text{RolEmp}_i$  is a dummy variable that identifies whether the student's role model is an entrepreneur. Students were asked to identify the person who most influenced their decisions, letting them choose among: mother, father, brother/sister, friend, teacher and "other" (if they chose "other" they had to specify who it was). 75 per cent of our sample chose their parents as their role model. Once a student identifies a person in his/her environment who acts as a "role model", he/she is asked to indicate if that person is an entrepreneur. This approach was used by Van Auken *et al.* (2006). The  $\text{RoleEmp}$  variable takes value 1 if he/she is an entrepreneur and 0 value if he/she is not.

$\text{Imag}_i$  measures the students' perception of entrepreneurs. We have adapted the construct proposed by Veciana *et al.* (2005), into another one consisting of the average of the three items, using a Likert scale (1: strongly disagree – 5: strongly agree) (Table I).

The last three variables in the model represent the traits of the individual accepted as typical of entrepreneurial orientation (Covin and Slevin, 1991; Kickul and Gundry, 2002; Sanchez *et al.*, 2005). These variables denote essential entrepreneurial skills such as creativity, proactivity and risk taking. For every item, we used a Likert scale taking values 1 (never) to 5 (always). The constructs are the average of the three items (Table I).

$\text{Crea}_i$  measures creativity as the average of the three items, following the scale adaptation proposed by Saboia and Martin (2006).  $\text{Proac}_i$  measures proactivity using an adaptation of the three items of the scale proposed by Seibert *et al.* (2001).  $\text{AvRisk}_i$

Item descriptions	Outer loadings
<i>Risk aversion (Likert scale: 1 = never to 5 = always)</i>	
CR = 0.78; AVE = 0.55	
I bear potential risks in mind	0.79
I consider possible outcomes	0.70
Seeking information when I ignore something	0.73
<i>Creativity (Likert scale: 1 = never to 5 = always)</i>	
CR = 0.82; AVE = 0.60	
I often have original ideas and put them into practice.	0.71
I see creative possibilities in everything	0.83
I enjoy finding new ways to see things	0.78
<i>Proactivity (Likert scale: 1 = never to 5 = always)</i>	
CR = 0.78, AVE = 0.54	
I have initiative to do things	0.90
Propose new ways of doing things	0.66
Seeking opportunities	0.62
<i>Entrepreneurial image (Likert scale: 1 = strongly disagree to 5 = strongly agree)</i>	
CR = 0.88, AVE = 0.70	
They are able to communicate with workers	0.79
They are honest people	0.87
They are people with clear criteria of social justice	0.85

**Table I.**  
Constructs  
measurement  
summary: scale  
reliability

**Notes:** CR, composite reliability; AVE, average variance extracted

measures risk aversion through an adaptation of the three items proposed by Saboia and Martin (2006). In both variables we used the average of the related three items scale.

### 3.3 Scale reliability

Reliability results are given in Table I. The data indicates that the measures are robust in terms of their internal consistency reliability as indexed by the composite reliability. The composite reliabilities of the different measures range from 0.78 to 0.88, which exceed the recommended threshold value of 0.70 (Nunnally, 1978). In addition, consistent with the guidelines of Fornell and Larcker (1981), the average variance extracted (AVE) for each measure exceeded 0.50, from 0.54 to 0.70.

Table II reports the results of testing the discriminant validity of the measure scales. The elements in the matrix diagonals, representing the square roots of the AVEs, are greater in all cases than the off-diagonal elements in their corresponding row and column, supporting the discriminant validity of our scales.

We tested convergent validity using Smart PLS by extracting the factor and cross-loadings of all indicator items to their respective latent constructs. These results showed that all items loaded on their respective construct and the factorial loads were higher than

	1	2	3	4
1. Risk aversion	0.74			
2. Creativity	0.31	0.78		
3. Entrepreneurial image	0.09	0.06	0.84	
4. Proactivity	0.36	0.50	0.10	0.74

**Table II.**  
Fornell-Larcker  
criterion  
discriminant validity  
(intercorrelations) of  
variable constructs

0.62. Furthermore, the factorial loads were highly significant ( $p$ -value < 0.0001) as indicated by the  $t$ -statistics (minimum  $t$ -statistics: 3.63). The constructs' loadings and cross-loadings, and the highly significant  $t$ -statistic for each individual item, both confirmed the convergent validity of these indicators as representing distinct latent constructs.

#### 4. Results

First, we performed the univariate analysis between the entrepreneurial preference of the individual and the factors that previous literature identifies as typical of entrepreneurs. Table III shows that there were statistically significant differences at a significance level of 0.01 and 0.05 for all proposed variables (ANOVA). These results show that students who choose an entrepreneurial path in their careers have a more positive self-perception of their skills in relation to proactivity (3.69 vs 3.56) and creativity (3.50 vs 3.33). This group of students also presents a lower rejection level of uncertainty situations, with the student group that prefers to work for others having the highest risk aversion level (3.53 vs 3.63). Likewise, students who choose an entrepreneurial option generally have a more positive entrepreneurial image (3.16 vs 3.00).

Table IV presents the estimation of the logit model. To determine the validity of the model we carried out the likelihood test, using Hosmer and Lemeshow's measurement of overall adjustment, the overall success rate in classification, the goodness of fit through the  $R^2$  alternative of Cox and Snell and the statistical of Nagelkerke. The statistical tests validate our results (Table IV). We ruled out the presence of multicollinearity since the maximum variance inflation factor was lower than 1.5.

	Total (mean)	Mean		$F$ -test	$p$ -value
		Entrepr.	No entrep.		
<i>Characteristic features of entrepreneurship</i>					
Proactivity	3.63	3.69	3.56	10.412	0.001***
I have initiative to do things	3.61	3.70	3.51	14.512	0.000***
Propose new ways of doing things	3.47	3.52	3.42	3.047	0.081*
Seeking opportunities	3.80	3.84	3.76	2.928	0.087*
Risk aversion	3.58	3.53	3.63	5.132	0.024**
I bear potential risks in mind	3.54	3.48	3.60	3.681	0.055*
I consider possible outcomes	3.71	3.68	3.75	1.769	0.184
Seeking information when I ignore something	3.48	3.42	3.53	3.139	0.077*
Creativity	3.41	3.50	3.33	18.234	0.000***
I often have original ideas and put them into practice	3.45	3.51	3.38	6.948	0.008***
I see creative possibilities in everything	3.31	3.41	3.21	13.979	0.000***
I enjoy finding new ways to see things	3.48	3.58	3.39	12.585	0.000***
<i>Socio-cultural factor</i>					
Entrepreneurial Image	3.08	3.16	3.00	7.450	0.006***
They are able to communicate with workers	3.35	3.43	3.28	4.913	0.027**
They are honest people	3.00	3.08	2.92	6.205	0.013**
They are people with clear criteria of social justice	2.89	2.96	2.82	4.593	0.032**

**Table III.**

Univariate analysis

**Note:** \*, \*\*, \*\*\*Statistically significant differences at 10, 5 and 1 per cent according to the  $F$ -test



**Table IV.**  
Logistic regression  
for input method

Independent variables	<i>B</i>	S.E.	Wald	<i>p</i> -value	Exp ( <i>B</i> )
Entrepreneur role model	0.507	0.138	13.533	0.000	1.661
Entrepreneurial image	0.128	0.061	4.380	0.036	1.137
Creativity	0.355	0.099	12.949	0.000	1.426
Proactivity	0.200	0.109	3.342	0.068	1.221
Risk aversion	-0.390	0.087	20.023	0.000	0.677
Constant	-1.044	0.408	6.545	0.011	0.352

**Notes:**  $n = 1.244$ . SE, standard error; Wald, Wald statistic;  $p$ -value, significance level; Exp( $B$ ), exponentiated coefficient. Dependent variable (dummy): be an entrepreneur = 1; be an employee = 0.  $B$ : logistic coefficients are used to measure changes in odds ratios. A positive coefficient increases the predicted probability, while a negative value decreases the predicted probability. The statistical significance of the model was determined using the Hosmer Lemeshow measurement of overall fit where statistical testing indicates that there is no significant difference between observed and predicted classifications since the  $\chi^2$  value is not significant ( $\chi^2$ : 7.842, sig.: 0.449). Overall success rate of 57.0 per cent. Model summary:  $-2 \log$  likelihood: 1,645.136;  $R^2$  de Cox and Snell: 0.048;  $R^2$  de Nagelkerke: 0.063

Table IV shows that the results confirm the influence of internal and external factors. With regards to external factors, results reveal positive and significant values: for the entrepreneurial role model,  $B = 0.507$ , and for the image of businessman,  $B = 0.128$ . These results are also valid when we consider family members as role models. In relation to internal factors, we also found positive and significant results regarding creativity,  $B = 0.355$  and proactivity,  $B = 0.200$ . Furthermore, we noticed that the risk aversion variable was negative and significant,  $B = -0.390$ . These results confirm that those students whose role model is an entrepreneur, those who have a more positive image of entrepreneurs and have a more positive perception about their entrepreneurial skills (creativity, risk tolerance and proactivity), are more prone to choose an entrepreneurial career than others. Starting with Schumpeter (1934) and McClelland (1961) who emphasised the importance of creativity and innovation for the entrepreneur, authors like Liñán *et al.* (2011) or Gundry *et al.* (2014) have recently strongly endorsed this theory. They highlight the need to develop creative, innovative and proactive behaviours leading to new ideas and the search of new opportunities.

In view of the above findings, we can say that the five explanatory variables considered in the statistical analysis are significant at a 0.1 level. Specifically, three of these variables have a significance level of 0.01 (and one of them, 0.05) while explaining the probability that a secondary student in the Murcia Region chooses an entrepreneurial career. Results confirm the five hypotheses ( $H1-H5$ ).

Therefore, the probability that a secondary school student in the Murcia Region chooses an entrepreneurial career in the future depends, among other issues, on the opportunities he or she has to cultivate an entrepreneurial attitude, be proactive, be innovative and learn to handle situations of uncertainty.

This is in line with the works cited in the theoretical framework (Covin and Slevin, 1989; Marques *et al.*, 2012). The results show that (in addition to maintaining an entrepreneurial attitude) having a model of entrepreneurship in the immediate environment and also a positive image of entrepreneurs will exert a positive influence on a student's career choice. These results are consistent with a broad spectrum of work (Krueger *et al.*, 2000; Chlosta *et al.*, 2010).

## 5. Discussion and conclusions

Entrepreneurial activity is linked to economic growth and dynamism (Delmar and Davidsson, 2000; Naude, 2013). For this reason governments identify entrepreneurship education as a priority in their innovation policies (Von Graevenitz *et al.*, 2010). Despite the interest generated by these educational programmes, entrepreneurship education research is a young field and there is still no consensus on the effects produced by these programmes on students (Elert *et al.*, 2015).

This paper studies the relationship between entrepreneurial choice, entrepreneurial skills (such as creativity, proactivity and risk taking) and external factors such as the role model (influence model) and the image of businessman. The main goal is to find out the internal or external factors that influence the choice of an entrepreneurial career at early age stages. We used a sample of 1,244 students from secondary schools in the Region of Murcia. Based on the results obtained, we can state that this objective has been met in general terms. We confirm that the analysed psychological traits positively influence entrepreneurial preference. Students who have a more positive self-perception of their entrepreneurial behaviour show greater interest in an entrepreneurial career. These results are consistent with a fairly prolific strain of literature (Shapero, 1984; Veciana, 1999; Sanchez *et al.*, 2005; Liñan, 2007; Brück *et al.*, 2011) dealing with the psychological characteristics of entrepreneurs. More specifically, in regards to our first hypothesis, we should state that creativity reveals itself to be a determining factor leading students to entrepreneurship.

This is consistent with literature starting with Schumpeter (1934) who highlighted the innovative capacity of the entrepreneur as a differentiating element, up to more recent studies (Gundry *et al.*, 2014). Although researchers have a great interest in creativity, it is apparent that creativity is not part of the daily academic educational discourse (Kleiman, 2008).

The second hypothesis confirms that the risk aversion of students who express an entrepreneurial preference will be lower than that of those who prefer to earn a wage and, therefore, this factor will negatively influence entrepreneurial preference. These results are in line with research by Luthje and Franke (2003) and Sarri *et al.* (2010). We also confirmed the third hypothesis where we predicted that proactivity might have a positive influence on choosing an entrepreneurial career. The theoretical basis for this had been established by studies such as Seibert *et al.* (2001) or Kickul and Gundry (2002) which identify proactivity as an essential component of entrepreneurial behaviour (Uy *et al.*, 2015).

Similarly, we see that there are also external influence factors such as having an entrepreneur role model or having a more positive image of entrepreneurs. We specifically suggested in our fourth hypothesis that the existence of an entrepreneur role model would positively influence the choice of an entrepreneurial career. These results are based on a theoretical work by Krueger *et al.* (2000) and Van Auken *et al.* (2006). To raise the fifth hypothesis, we followed Veciana and Urbano (2008) and tested whether students who have a more idealised image of businessman prefer the entrepreneurial option.

Our results show that students who have more insight into their skills tend to have an entrepreneurial interest. Therefore, educational centres should not act as mere transmitters of knowledge. Instead, they should establish activities and processes that allow students to foster and develop those skills. We consider it essential that students' skills enabling them to identify opportunities, to develop solutions to potential problems, to take the initiative, to anticipate change, to manage uncertainty situations and to tolerate potential risks are trained from an early age. The development of these skills, which are the subject of our study, requires a different teaching style (Jones and Iredale, 2006; Payolle, 2013). Some work suggests the learning-by-doing approach as an

effective methodology for the development of entrepreneurial skills (Chang *et al.*, 2014; Elert *et al.*, 2015).

Moreover, not only the education administration and centres are responsible for encouraging entrepreneurial behaviour among students. The data show that the people who students identify as role models also have an effective influence on them. Therefore, these people should be aware of the influence they exert so that there is proper transmission of values and skills. Finally, it is important that students know and become familiar with the world of business and with entrepreneurs. From this age, they may already begin to appreciate the role of entrepreneurs in society as employment and wealth generators.

These results, therefore, may be useful for the educational administration. Following North's Institutional Theory (North, 1991), institutions play a key role in the development of an entrepreneurial culture. In this sense, this study identifies the key skills that the education system should encourage. Educational institutions play an important role in teaching these entrepreneurial skills (Hernández and Pérez, 2010; Liñán *et al.*, 2011). Politicians should be cautious about the entrepreneurial culture concept, as indicated by Shane (2009), an increase in the number of entrepreneurs does not necessarily lead to an increase in a country's wealth.

Our study also stresses the importance of the role model that the student chooses. In this sense, administration-promoted actions are the key to stimulating skills development and encouraging the active participation of the student's role model. Furthermore, it highlights the importance of promoting a rapprochement between the business world and the education system. Students need to know how a company works and what it is like to be an entrepreneur.

The limitations of this study are opportunities for future research. In this regard, we must consider the age of the sample. The secondary school students will enter the professional world in the medium to long term. This prompted us to determine entrepreneurial preference instead of creating a construct of intentionality. Although authors like Krueger *et al.* (2000) advocate for student samples and the use of a single item to determine entrepreneurial intention, in the literature there is a high heterogeneity in measuring this variable. In future papers more than one item should be considered to measure it (Wilson *et al.*, 2007; Liñán *et al.*, 2011; Walter *et al.*, 2013).

It should also be noted that traits such as creativity and proactivity tend to converge and may be related. Future research should further study the state of skills in students from more advanced courses and college students, and their relationship with entrepreneurial intention. The development of these skills and their connection with entrepreneurial preference at different stages of the learning process should also be analysed. Finally, this study does not deal with vocational education students. These students have their own characteristics as they are more familiar with the business environment.

## References

- Atilla Öner, M. and Kunday, Ö. (2016), "A study on Schumpeterian and Kirznerian entrepreneurship in Turkey: 2006-2013", *Technological Forecasting and Social Change*, Vol. 102, pp. 62-71, doi: 10.1016/j.techfore.2015.09.005.
- Bae, T.J., Qian, S., Miao, C. and Fiet, J.O. (2014), "The relationship between entrepreneurship education and entrepreneurial intentions: a meta-analytic review", *Entrepreneurship Theory and Practice*, Vol. 38 No. 2, pp. 217-254.

- Bandura, A. (1978), "Reflections on self-efficacy", in Rachman, S. (Ed.), *Advances in Behaviour Research and Therapy*, Vol. 1, Pergamon Press, Oxford, pp. 237-269.
- Bateman, T. and Crant, J. (1993), "The proactive component of organizational behavior", *Journal of Organizational Behavior*, Vol. 14 No. 2, pp. 103-118.
- Benavides, M.d.M., Sánchez, M.I. and Luna, R. (2004), "El proceso de aprendizaje para los emprendedores en la situación actual: un análisis cualitativo en el ámbito universitario", *Revista de Dirección, Organización Y Administración de Empresas*, Vol. 30, pp. 34-48.
- Bernal, A. (2014), "Competencia emprendedora e identidad personal. Una investigación exploratoria con estudiantes de educación secundaria obligatoria", *Revista de Educación*, Vol. 363 No. 1, pp. 384-411.
- Birdthistle, N., Hynes, B. and Fleming, P. (2007), "Enterprise education programmes in secondary schools in Ireland", *Education + Training*, Vol. 49 No. 4, pp. 265-276, doi: 10.1108/00400910710754426.
- Bolaños, R. (2006), "Impacto del modelo a imitar en la intención de crear una empresa", *Estudios de Economía Aplicada*, Vol. 24 No. 2, pp. 491-508.
- Bosma, N., Hessels, J., Schutjens, V., Praag, M., Van and Verheul, I. (2012), "Entrepreneurship and role models", *Journal of Economic Psychology*, Vol. 33 No. 2, pp. 410-424.
- Brück, T., Llussá, F. and Tavares, J.a. (2011), "Entrepreneurship: the role of extreme events", *European Journal of Political Economy*, Vol. 27 No. 1, pp. S78-S88, doi: 10.1016/j.ejpoleco.2011.08.002.
- Chang, J., Benamraoui, A. and Rieple, A. (2014), "Learning-by-doing as an approach to teaching social entrepreneurship", *Innovations in Education and Teaching International*, Vol. 51 No. 5, pp. 459-471.
- Chlosta, S., Patzelt, H., Klein, S.B. and Dormann, C. (2010), "Parental role models and the decision to become self-employed: the moderating effect of personality", *Small Business Economics*, Vol. 38 No. 1, pp. 121-138.
- Covin, J.G. and Slevin, D.P. (1989), "Strategic management of small firms in hostile and benign environments", *Strategic Management Journal*, Vol. 10 No. 1, pp. 75-87.
- Covin, J.G. and Slevin, D.P. (1991), "A conceptual model of entrepreneurship as firm behavior", *Entrepreneurship Theory and Practice*, Vol. 16 No. 1, pp. 7-25.
- Crant, J.M. (1996), "The proactive personality scale as a predictor of entrepreneurial intentions", *Journal of Small Business Management*, Vol. 34 No. 3, pp. 42-50.
- Delmar, F. and Davidsson, P. (2000), "Where do they come from? Prevalence and characteristics of nascent entrepreneurs", *Entrepreneurship and Regional Development: An International Journal*, Vol. 12 No. 1, pp. 1-23.
- Dohse, D. and Walter, S.G. (2011), "Knowledge context and entrepreneurial intentions among students", *Small Business Economics*, Vol. 39 No. 4, pp. 877-895, doi: 10.1007/s11187-011-9324-9.
- Elert, N., Andersson, F.W. and Wennberg, K. (2015), "The impact of entrepreneurship education in high school on long-term entrepreneurial performance", *Journal of Economic Behavior and Organization*, Vol. 111, pp. 209-223, doi: 10.1016/j.jebo.2014.12.020.
- European Commission (2008), *Entrepreneurship in Higher Education, Especially within Non-business Studies*, European Commission, available at: [http://ec.europa.eu/enterprise/policies/sme/files/support\\_measures/training\\_education/entr\\_highed\\_en.pdf](http://ec.europa.eu/enterprise/policies/sme/files/support_measures/training_education/entr_highed_en.pdf)
- European Commission (2013), *Entrepreneurship Education: Enterprise and Industry. A Guide for Educators*, European Commission, available at: [http://ec.europa.eu/education/news/2013/20130923\\_en.htm](http://ec.europa.eu/education/news/2013/20130923_en.htm)

- Falck, O. and Woessmann, L. (2011), "School competition and students' entrepreneurial intentions: international evidence using historical catholic roots of private schooling", *Small Business Economics*, Vol. 40 No. 2, pp. 459-478.
- Fayolle, A. (2013), "Personal views on the future of entrepreneurship education", *Entrepreneurship and Regional Development*, Vol. 25 Nos 7-8, pp. 692-701.
- Fayolle, A., Liñán, F. and Moriano, J.a. (2014), "Beyond entrepreneurial intentions: values and motivations in entrepreneurship", *International Entrepreneurship and Management Journal*, Vol. 10 No. 4, pp. 679-689.
- Feldman, R.S. (2005), *Psicología: con Aplicaciones En Países De Habla Hispana*, Sexta Edición., McGrawHill.
- Fornell, C. and Larcker, D.F. (1981), "Evaluating structural equation models with unobservable variables and measurement error", *Journal of Marketing Research*, Vol. 18 No. 1, pp. 39-50.
- Gordon, I, Hamilton, E. and Jack, S. (2012), "A study of a university-led entrepreneurship education programme for small business owner/managers", *Entrepreneurship and Regional Development*, Vol. 24 Nos 9-10, pp. 767-805, doi: 10.1080/08985626.2011.566377.
- Gribben, A.A. (2006), "Formación del espíritu empresarial: retos y oportunidades", *European Training Foundation*, p. 38, available at: [www.etf.europa.eu/pubmgmt.nsf/\(getAttachment\)/2AF9554BBCF83FE5C1257234003EFF45/\\$File/NOTE6VYVFFZ.pdf](http://www.etf.europa.eu/pubmgmt.nsf/(getAttachment)/2AF9554BBCF83FE5C1257234003EFF45/$File/NOTE6VYVFFZ.pdf)
- Gundry, L.K., Ofstein, L.F. and Kickul, J.R. (2014), "Seeing around corners: how creativity skills in entrepreneurship education influence innovation in business", *The International Journal of Management Education*, Vol. 12 No. 3, pp. 529-538, doi: 10.1016/j.ijme.2014.03.002.
- Hernández, R. and Pérez, P. (2010), "An approach to entrepreneurial culture and education in secondary school", *International Journal of Business Environment*, Vol. 3 No. 1, pp. 120-134.
- Ismail, V.Y. and Zain, E. (2015), "The portrait of entrepreneurial competence on student entrepreneurs", *Procedia – Social and Behavioral Sciences*, Vol. 169, August, pp. 178-188, doi: 10.1016/j.sbspro.2015.01.300.
- Jones, B. and Iredale, N. (2006), "Developing an entrepreneurial life skills summer school", *Innovations in Education and Teaching International*, Vol. 43 No. 3, pp. 233-244.
- Jones, C., Matlay, H. and Maritz, A. (2012), "Enterprise education: for all, or just some?", *Education + Training*, Vol. 54 Nos 8/9, pp. 813-824.
- Kaya, N. (2015), "Corporate entrepreneurship, generic competitive strategies, and firm performance in small and medium-sized enterprises", *Procedia – Social and Behavioral Sciences*, Vol. 207, pp. 662-668, doi: 10.1016/j.sbspro.2015.10.136.
- Kickul, J. and Gundry, L.K. (2002), "Prospecting for strategic advantage: the proactive entrepreneurial personality", *Journal of Small Business Management*, Vol. 40 No. 2, pp. 85-97.
- Kleiman, P. (2008), "Towards transformation: conceptions of creativity in higher education", *Innovations in Education and Teaching International*, Vol. 45 No. 3, pp. 209-217.
- Krueger, N.F., Reilly, M.D. and Carsrud, A.L. (2000), "Competing models of entrepreneurial intentions", *Journal of Business Venturing*, Vol. 15 Nos 5-6, pp. 411-432, doi: 10.1016/S0883-9026(98)00033-0.
- Kuratko, D.F. (2005), "The emergence of entrepreneurship education: development, trends, and challenges", *Entrepreneurship Theory and Practice*, Vol. 29 No. 5, pp. 557-597.
- Leiva, J.C. (2004), "Estudio exploratorio de la motivación emprendedora en el ITCR", in Roig, S., Ribeiro, D., Torcal, R. and De la Torre, A. (Eds), *El emprendedor innovador y la creación de empresas de I+D+I*, cap.19, Servei de Publicacions Universitat de Valencia, pp. 323-339.

- Liñán, F. (2007), "The role of entrepreneurship education in the entrepreneurial process", in Fayolle, A. (Ed.), *Handbook of Research in Entrepreneurial Education*, Vol. 1, Edward Elgar, Cheltenham, pp. 230-247.
- Liñán, F., Rodríguez-Cohard, J.C. and Rueda-Cantucho, J.M. (2011), "Factors affecting entrepreneurial intention levels: a role for education", *International Entrepreneurship and Management Journal*, Vol. 7 No. 2, pp. 195-218.
- Lumpkin, G.T. and Dess, G. (1996), "Clarifying the entrepreneurial orientation construct and linking it to performance", *The Academy of Management Review*, Vol. 21 No. 1, pp. 135-172.
- Luthje, C. and Franke, N. (2003), "The 'making' of an entrepreneur: testing a model of entrepreneurial intent among engineering students at MIT", *RandD Management*, Vol. 33 No. 2, pp. 135-147.
- McClelland, D. (1961), *The Achieving Society*, Van Nostrand, Princeton, NJ.
- McGee, J.E., Peterson, M., Mueller, S.L. and Sequeira, J.M. (2009), "Entrepreneurial self-efficacy: refining the measure", *Entrepreneurship Theory and Practice*, Vol. 33 No. 4, pp. 965-988.
- Marques, C.S., Ferreira, J.J., Gomes, D.N. and Gouveia Rodrigues, R. (2012), "Entrepreneurship education: how psychological, demographic and behavioural factors predict the entrepreneurial intention", *Education + Training*, Vol. 54 Nos 8-9, pp. 657-672.
- Matlay, H. (2006), "Researching entrepreneurship and education, part 2: what is entrepreneurship education and does it matter?", *Education + Training*, Vol. 48 Nos 8-9, pp. 704-718.
- Matlay, H. (2008), "The impact of entrepreneurship education on entrepreneurial outcomes", *Journal of Small Business and Enterprise Development*, Vol. 15 No. 2, pp. 382-396.
- Matlay, H. (2011), "The influence of stakeholders on developing enterprising graduates in UK HEIs", *International Journal of Entrepreneurial Behaviour & Research*, Vol. 17 No. 2, pp. 166-182.
- Ministry of Education (2011), *Datos y Cifras, Curso escolar 2010/2011*, Vol. 623, Madrid, available at: [educacion.es](http://educacion.es)
- Moriano, J.A., Palací, F.J. and Morales, J.F. (2006), "El perfil psicosocial del emprendedor universitario", *Revista de Psicología Del Trabajo y de Las Organizaciones*, Vol. 22 No. 1, pp. 75-99.
- Naude, W. (2013), "Entrepreneurship and economic development: theory, evidence and policy", IZA Discussion Paper No. 7507, available at: <http://ssrn.com/abstract=2314802>
- North, D.C. (1991), "Institutions", *The Journal of Economic Perspectives*, Vol. 5 No. 1, pp. 97-112.
- Nunnally, J.C. (1978), *Psychometric Theory*, 2nd ed., McGraw-Hill, New York, NY.
- Nyström, K. (2012), "Entrepreneurial politicians", *Small Business Economics*, Vol. 41 No. 1, pp. 41-54.
- Oosterbeek, H., van Praag, M. and Ijsselstein, A. (2010), "The impact of entrepreneurship education on entrepreneurship skills and motivation", *European Economic Review*, Vol. 54 No. 3, pp. 442-454.
- Oparaocha, G.O. (2015), "SMEs and international entrepreneurship: an institutional network perspective", *International Business Review*, Vol. 24 No. 5, pp. 861-873, doi: 10.1016/j.ibusrev.2015.03.007.
- Oppedisano, J. and Laird, K.R. (2006), "Entrepreneurship education for women and girls: an interactive model of transformational learning", *New England Journal of Entrepreneurship*, Vol. 9 No. 2, pp. 1-15.

- Peterman, N.E. and Kennedy, J. (2003), "Enterprise education: influencing students' perceptions of entrepreneurship", *Entrepreneurship Theory and Practice*, Vol. 28 No. 2, pp. 129-144.
- Piperopoulos, P. and Dimov, D. (2015), "Burst bubbles or build steam? Entrepreneurship education, entrepreneurial self-efficacy, and entrepreneurial intentions", *Journal of Small Business Management*, Vol. 53 No. 4, pp. 970-985, doi: 10.1111/jsbm.12116.
- Prabhu, V.P. (2011), "Risk taking", in Runco, M.A. and Pritzker, S.r. (Eds), *Encyclopedia of Creativity*, Vol. 2, Academic Press, New York, NY, pp. 193-196.
- Rahman, S., Yasin, R.M., Buang, N.A., Oganisjana, K., Fernate, A. and Koke, T. (2015), "Using problem-focused approach to nurture creativity and entrepreneurship among students", *Procedia – Social and Behavioral Sciences*, Vol. 191, pp. 2782-2786, doi: 10.1016/j.sbspro.2015.04.628.
- Raposo, M. and do Paço, A. (2011), "Entrepreneurship education: relationship between education", *Psicothema*, Vol. 23 No. 3, pp. 453-457.
- Saboia, F. and Martin, N. (2006), "Los Rasgos Psicológicos del Emprendedor y la Continuidad del Proyecto Empresarial: Un Estudio Empírico de Emprendedores Brasileños", *Revista Electronica de Administração*, Vol. 12 No. 2, pp. 1-20.
- Sánchez, J.C., Lanero, A. and Yurrebaso, A. (2005), "Variables determinantes de la intención emprendedora en el contexto universitario", *Revista de psicología social aplicada*, Vol. 15 Nos 1-2, pp. 37-60.
- Sarri, K.K., Bakouros, I.L. and Petridou, E. (2010), "Entrepreneur training for creativity and innovation", *Journal of European Industrial Training*, Vol. 34 No. 3, pp. 270-288.
- Schumpeter, J.A. (1934), *The Theory of Economic Development*, Harvard University Press, Cambridge, MA.
- Seibert, S.E., Crant, J.M. and Kraimer, M.L. (1999), "Proactive personality and career success", *Journal of Applied Psychology*, Vol. 84 No. 3, pp. 416-427.
- Seibert, S.E., Crant, J.M. and Kraimer, M.L. (2001), "What do proactive people do? A longitudinal model linking proactive personality and career success", *Personnel Psychology*, Vol. 54, pp. 845-874.
- Shane, S. (2009), "Why encouraging more people to become entrepreneurs is bad public policy", *Small Business Economics*, Vol. 33 No. 2, pp. 141-149.
- Shapiro, A. (1984), "The entrepreneurial event", in Kent, C.A. (Ed.), *The Environment for Entrepreneurship*, Lexington Books, Lexington, MA, pp. 21-40.
- Shapiro, A. and Sokol, L. (1982), "Social dimensions of entrepreneurship", in Kent, C.A., Sexton, D.L. and Vesper, K.H. (Eds), *The Encyclopaedia of Entrepreneurship*, Prentice-Hall, Englewood Cliffs, NJ, pp. 72-90.
- Shinnar, R., Giacomini, O. and Janssen, F. (2012), "Entrepreneurial perceptions and intentions: the role of gender and culture", *Entrepreneurship Theory and Practice*, Vol. 36 No. 3, pp. 465-493.
- Solesvik, M., Westhead, P. and Matlay, H. (2014), "Cultural factors and entrepreneurial intention: the role of entrepreneurship education", *Education + Training*, Vol. 56 Nos 8-9, pp. 680-696.
- Solesvik, M., Westhead, P., Matlay, H. and Parsyak, V. (2013), "Entrepreneurial assets and mindsets - benefit from university entrepreneurship education investment", *Education + Training*, Vol. 55 Nos 8-9, pp. 748-762.
- Staniewski, M.W., Janowski, K. and Awruk, K. (2016), "Entrepreneurial personality dispositions and selected indicators of company functioning", *Journal of Business Research*, Vol. 69 No. 5, pp. 1939-1943, doi: 10.1016/j.jbusres.2015.10.084.

- Thomas, E.J. and Biddle, B.J. (1966), "Learning and socialization", in Biddle, B.J. and Thomas, E.J. (Eds), *Role Theory: Concepts and Research*, Wiley, New York, NY, pp. 345-346.
- Uy, M.a., Chan, K.-Y., Sam, Y.L., Ho, M.R. and Chernyshenko, O.S. (2015), "Proactivity, adaptability and boundaryless career attitudes: the mediating role of entrepreneurial alertness", *Journal of Vocational Behavior*, Vol. 86 No. 1, pp. 115-123, doi: 10.1016/j.jvb.2014.11.005.
- Van Auken, H. (2013), "Influence of a culture-based entrepreneurship program on student interest in business ownership", *International Entrepreneurship and Management Journal*, Vol. 9 No. 2, pp. 261-272.
- Van Auken, H., Fry, F.L. and Stephens, P. (2006), "The influence of role models on entrepreneurial intentions", *Journal of Developmental Entrepreneurship*, Vol. 11 No. 2, pp. 157-167.
- Veciana, J.M. (1999), "Entrepreneurship as a scientific research", *Revista Europea de Dirección y Economía de La Empresa*, Vol. 8 No. 3, pp. 11-35.
- Veciana, J.M. and Urbano, D. (2008), "The institutional approach to entrepreneurship research. introduction", *International Entrepreneurship and Management Journal*, Vol. 4 No. 4, pp. 365-379.
- Veciana, J.M., Aponte, M. and Urbano, D. (2005), "University students' attitudes towards entrepreneurship: a two countries comparison", *International Entrepreneurship and Management Journal*, Vol. 1, pp. 165-182, doi: 10.1007/s11365-005-1127-5.
- von Graevenitz, G., Harhoff, D. and Weber, R. (2010), "The effects of entrepreneurship education", *Journal of Economic Behavior and Organization*, Vol. 76 No. 1, pp. 90-112.
- Walter, S.G., Parboteeah, K.P. and Walter, A. (2013), "University departments and self-employment intentions of business students: a cross-level analysis", *Entrepreneurship Theory and Practice*, Vol. 37 No. 2, pp. 175-200, doi: 10.1111/j.1540-6520.2011.00460.x.
- Ward, T.B. (2004), "Cognition, creativity, and entrepreneurship", *Journal of Business Venturing*, Vol. 19 No. 2, pp. 173-188.
- Weitzel, U., Urbig, D., Desai, S., Sanders, M. and Acs, Z. (2010), "The good, the bad, and the talented: entrepreneurial talent and selfish behavior", *Journal of Economic Behavior and Organization*, Vol. 76 No. 1, pp. 64-81.
- Wilson, F., Kickul, J. and Marlino, D. (2007), "Gender, entrepreneurial self-efficacy and entrepreneurial intentions: implications for entrepreneurship education", *Entrepreneurship Theory and Practice*, Vol. 31 No. 3, pp. 387-407.
- Zampetakis, L.a. (2008), "The role of creativity and proactivity on perceived entrepreneurial desirability", *Thinking Skills and Creativity*, Vol. 3 No. 2, pp. 154-162.
- Zellweger, T., Sieger, P. and Halter, F. (2011), "Should I stay or should I go? Career choice intentions of students with family business background", *Journal of Business Venturing*, Vol. 26 No. 5, pp. 521-536.

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