

# **Entrepreneurial intention and obstacles of undergraduate students. The case of the universities of Andalusia.**

## **Abstract**

This paper studies entrepreneurial intentions in undergraduate students and the obstacles perceived by the students in the process of starting their own business. Using a sample of 1,053 undergraduate students from Andalusia universities, this study explores attitudes, capacities and social environment to determine the profile of university's entrepreneurs. The results of the structural model show that motivational factors determine entrepreneurship university students, while environmental or regional factors indirectly determine undergraduates' choice of employment status. We also find that personal variables and attitudes related to the desire for self-realization have the greatest influence on the entrepreneurial intention university students. In addition, the findings from the regression analysis exhibit that financial obstacles, the lack of experience, and training are the main barriers students perceive to starting their own business. The results contribute to theories of entrepreneurship education and intentions in the context of higher education. The authors discuss implications universities and policymakers.

## **Introduction**

Most politicians and academics agree that entrepreneurship is crucial to the development and well-being of society. Entrepreneurs create jobs and generate innovations that accelerate structural changes in the economy and, through new competition, indirectly contribute to productivity. Entrepreneurship is thus a catalyst for economic growth and competitiveness, especially in higher-income countries (Acs and Szerb, 2007; Audretsch et al., 2005; Vanevenhoven, 2013) and as a key element in fighting social exclusion and unemployment (Acs et al. 2016; Carree and Thurik 2008; Parker 2018).

The importance of universities and other institutions of higher education in directing graduates towards entrepreneurial activities has been emphasized by many researchers (Autio et al, 2001; Krueger et al, 2000; Liñán y Chen, 2009; Winkel, 2013). Firstly, research on entrepreneurial intention among university students has gained significant academic interest because of its ability to predict overall entrepreneurial behaviour (Krueger et al., 2000) and has suggested that education can facilitate entrepreneurial outputs (Kuratko, 2005; Morris et al., 2013; Oosterbeek et al. 2010; Ozaralli and Rivenburgh, 2016). The most widely used models for these analyses have been the models of intention (Theory of Planned Behavior), as proposed by Ajzen (1991) and by Shapero and Sokol (1982). This theory, based on the inclination to implement certain behaviour, suggests that attitudes, subjective norms, and control of the behaviour or capacity of the entrepreneur, determine the intention to create a company (Ajzen, 1991). Nevertheless, previous research has obtained contradictory results on the predictive power of these variables across different studies and countries (Liñán and Chen, 2009; Nabi et al., 2018).

In addition, researchers have developed a growing interest in the effectiveness of universities to foster entrepreneurship initiatives (Arranz et al., 2017; Boissin et al., 2009; Fayolle et al. 2006; Kirby, 2005; Shinnar et al. , 2009; Souitaris et al., 2007). However, their results tend to be limited and contradictory (Collins et al., 2004; Guerrero et al., 2008; Gurel et al., 2010; Thompson et al., 2010; Wu and Wu, 2008). While some researchers criticize that formal education reduces the individual's desire for entrepreneurship (e.g., Collins et al., 2004; Shapero and Sokol, 1982), others argue that education increases the individual's intention to create their own business (e.g., Bae et al., 2014; Boissin et al., 2009; Krueger et al., 2000; Lee et al., 2011).

Although interest in the emergence of entrepreneurial spirit has stimulated research in this area (Bird and Allen, 1989; Frank et al, 2007; Learned, 1992; Mandel and Noyes, 2016; Naffziger et al., 1994; Segal et al, 2005), few studies have focused on analyzing the entrepreneurship initiative of university students in a regional context. An important part of the business literature devoted to examining the factors influencing entrepreneurship suggests that individuals' personality traits condition their intentions to start a business (Koh, 1996; Mayhew et al., 2016; Mueller and Thomas, 2001; Robinson et al, 1991), but they do not consider the effects of higher education on that decision. In addition, the research that examines the effects of education on entrepreneurial decision-making is rather limited and offers conflicting results (Collins et al., 2004; Guerrero et al., 2008; Gurel et al., 2010; Thompson et al., 2010; Wu and Wu, 2008).

Our paper aims to analyze the factors that affect the intention of university students in creating a business, as well as the obstacles that they find in this process. To do this, we used a sample of 1,053 university students from public universities in Andalusia. The Autonomous Community of Andalusia has the largest number of entrepreneurs in Spain, being its entrepreneurship rate higher than in the rest of Spain, and comparable to the European average (GEM, 2017). However, following the Andalusian Entrepreneurship Barometer (BEA, 2015), despite the fact that education is considered an incentive factor for entrepreneurship, and the quality of university education in Andalusia is recognized, the university is not considered as an institution that significantly supports entrepreneurship (BEA, 2015; GEM, 2017), which translates into education and training in entrepreneurship being perceived as main obstacles in entrepreneurship (BEA, 2015).

The present research contributes to the literature on entrepreneurship in the following ways. Firstly, the factors that influence the decision to create a company in the case of university students are investigated, providing new empirical evidence to advance the research in this field. Secondly, our work shows not only the factors that influence entrepreneurship intention, but also the obstacles perceived by students in the process of starting their own business. Universities are supporting students in the process of creating a business through various channels: the development of curricular activities (i.e. specific training to create a business) and extracurricular activities programs that facilitate students' access to market information or financing. Additionally, our paper sheds light on the extent to which the entrepreneurial

education offered by universities is efficient, from the perspective of students. Finally, unlike most of the research, whose approach is of national or international character, our study is done at the regional level, in the Autonomous Community of Andalusia. By studying this particular case, the aim is to provide empirical evidence about the different entrepreneurial behaviours in this region and to corroborate the statements of Laukkanen (2000) and Kirby (2005) who point out that universities, instead of instructing students in the entrepreneurial spirit, they only teach them about the entrepreneur and the company. Furthermore, by defining the profile of the university entrepreneur, we aim to provide the basis for developing actions that enhance the entrepreneurial initiative in that region.

## **Literature review**

### *Entrepreneurial intention of university students*

The entrepreneurial intention of university students refers to “a conscious awareness and conviction by an individual that they intend to set up a new business venture and plan to do so” (Nabiet al., 2010: 538). This definition suggests that entrepreneurship arises from a deliberately planned behaviour (Liñán, 2008), so it is important to understand this process and its motivations. Numerous researchers have attempted to explain why some people, and not others, decide to become entrepreneurs (Autio et al., 2001; Chou et al., 2017; Padilla-Angulo, 2017; Segal et al., 2005). However, motivation is a complex concept involving the interaction of a series of factors (Lorz, et al., 2013; Nabi et al., 2006; Oosterbeek et al., 2010).

The cognitive approach provides a useful point of view for analyzing the phenomenon of entrepreneurship through the study of perceptions and intentions. Thus, the theory of planned behaviour (Ajzen, 1991) suggests that it is the intention of an individual that induces them to develop a planned action—in this case, to develop his own entrepreneurial project. The assumption here is that intentions reflect motivational factors that influence behaviour (Ajzen, 1991, p.181). These factors, which are based on the desire and feasibility of developing an action, comprise three elements: attitude, subjective norms and behaviour control. The first element, the attitude towards a certain behaviour, represents the degree of evaluation - favourable or unfavourable - that the person has of their potential action. Kolvereid (1996) and Krueger et al. (2000) point out aspects such as the desire to be independent and personal development as attitudinal elements that enhance the entrepreneurial

intention. The second element, the subjective norms, comprises the social norms that the individual perceives in the process of implementing the action. In this regard, Kolverid (1996) points out that both the demographic factors and the social environment of the entrepreneur influence the development of entrepreneurial intention. Finally, behaviour control refers to the way that the individual perceives their own ability to perform such action. Thus, Katz and Gartner (1988) and Kolvereid (1996) emphasize the role of personal capacities in developing entrepreneurial intention. The first two elements, attitude and subjective norms, converge in the desire to implement the action, as pointed out by Shapero and Sokol (1982). The third element, behaviour control, as Bandura (1977) points out, refers to the ability to develop a business project, and do so efficiently. In this context, Kolvereid (1996) and Tkachev and Kolvereid (1999) suggest that these three elements have a positive and significant impact on the entrepreneurial intention of university students. On the other hand, Boissin et al. (2009) point out that attitude and ability have a positive effect on intention, not subjective norms. Likewise, Veciana et al. (2005), Bae et al. (2014) and Mowinski et al. (2017) emphasize how attitudes are of paramount importance in the development of entrepreneurship among university students.

In short, both studies that focus on the analysis of personal and demographic factors (age, gender, work experience) and intention-based studies seem to suggest that entrepreneurship is not the result of economic and cultural factors separately (Nguyen et al., 2009; Pruett et al., 2009). On the contrary, the most recent empirical evidence suggests that the interaction between cultural, economic, and institutional perspectives more accurately explains entrepreneurial activity and entrepreneurial intention (Bae et al., 2014; Krueger et al., 2000; Lee et al., 2011), as well as regional and cross-country differences (The Gallup Organization, 2007), despite the recognition of the complex transition between university students experiences and their influence on entrepreneurial intentions (Brooman and Darwent, 2014).

#### *Entrepreneurship obstacles and higher education*

University students may be motivated to start a business, but overcome the obstacles they perceive may be a challenge to them. While the need for capital is one of the main needs of an entrepreneur (Eisenhardt and Martin, 2000), there are other factors – personal and environmental – that may affect the entrepreneurial intention. Some of the factors attributed to the failure of businesses owned by young

entrepreneurs include: lack of knowledge and entrepreneurship education, the role of family support in developing confidence and determining a child's career path, lack of experience or a propensity for low risk-taking behaviour (Harris and Gibson, 2008). The decision to become an entrepreneur is not only determined by personal factors but environmental factors such as rules and government regulations, the financial and economic infrastructure of the country or region, market opportunities, and various socio-cultural elements as well (Nabi and Liñán, 2013).

In this context, it is well known that universities are making important efforts to remove these obstacles and increase the entrepreneurial vocation among students (Jackson, 2015). This involves trying to answer two main questions: what to teach and how to do it. Scholars have emphasized the influence of education on entrepreneurial skills as a way to complement the knowledge related to functional disciplines (Winkler et al., 2015) and to encourage entrepreneurial intentions among college students from the outset through graduation (Smith and Beasley, 2011).

Collins et al. (2004), Souitaris et al. (2007), and Liñán (2008) advance a model of education where organized education is combined with the university's institutional support. They highlight two components: first, a curricular one, associated with the coursework required for different degrees as part of their curricula, focused on the development of competences; and second, an extracurricular component, related to those actions developed through awareness, entrepreneurial support and/or aid. These extracurricular actions are aimed at fostering interest and intention in starting a business (Collins et al., 2004; De Faoite et al., 2003; Fayolle and Gailly, 2015; Liñán, 2008; Rasmussen and Sorheim, 2006; Souitaris et al., 2007). Institutional support or extracurricular activities can be classified as cognitive (entrepreneurship culture awareness), informative/formative (oriented towards providing information and enterprise competencies) and instrumental (designed to provide resources and physical help for the materialization of entrepreneurship intention) (Arranz et al., 2017). In this last case, there are initiatives such as business incubators, which provide knowledge support and specialized counselling for business start-ups as well as space and material resources in very advantageous economic conditions. It is expected that these actions enable students to overcome obstacles they could encounter while pursuing their entrepreneurial intentions.

## **Methodology**

### *Context*

Andalusia is the most populated Spanish region with 8.4 million inhabitants. Located in the South of Spain, it ranks in size somewhere between Portugal and Austria. Traditionally, Andalusia has lagged behind the rest of the country by most economic variables and generally depicts a scenario of lower than average performance in employment, education and R&D and innovation. Nevertheless, thanks also to support from the EU Structural Funds, the performance of Andalusia in most of these indicators has improved over the last decade. However, the 2008 crisis hampered the improvement in economic conditions with a clear reflection in unemployment rates that in 2013 reached 36.7% of the population (26.1% at the national level) (INE, 2018). As of 2017, Spain had the second-highest unemployment rate of all EU states (17.4%) and, even though there has also been a general decrease in the unemployment rate in Andalusia, it is still at 26.9%.

Nevertheless, Andalusia with almost 324,000 entrepreneurs, occupies the first position in a number of entrepreneurs in the whole country. This amount represents 21.08% of the total figure of 1,536,8226 entrepreneurs in Spain (GEM, 2017). The Andalusian Entrepreneurial Activity Rate is (6%) one point above the Spanish average and at the level of the European average.

Regarding the profile of the entrepreneur, the Andalusian Entrepreneurship Barometer (BEA, 2015) indicates that the most recurrent profile is a male (in 67.8%) between 26 and 45 years old (68.2%). As for the studies, the segment that generates more entrepreneurs is secondary education, followed by entrepreneurs with higher education, and further away from entrepreneurs with primary education. Entrepreneurs in Andalusia believe that personal skills, effort, experience and level of training are the main factors that influence the creation of a business. However, when they analyze the role of universities in terms of their support for entrepreneurship, the results show that most entrepreneurs consider that they do not support entrepreneurship. Moreover, education and training in entrepreneurship are considered one of the main obstacles to entrepreneurship in Andalusia. According to the GEM (2017), the factors that appear in the first places as obstacles for the entrepreneurship in Andalusia are, in this order, certain government policies, lack of financial support, obstacles imposed by social and cultural norms, lack of entrepreneurial capacity, lack of adequacy of some government programs, and education and training.

### *Sampling and data collection*

Surveys were administered at the eight public universities of the Autonomous Community of Andalusia, using a structured questionnaire. These surveys were conducted on campus during the months of January and February 2008. 1,053 surveys were obtained, stratified by sex, age, size of origin town, province and previous studies. Students were selected at random from a sample of 245,675 students in the Andalusian public universities of the Autonomous Community of Andalusia. For a confidence level of 95% and assuming the maximum population variability  $p = q = 0.5$ , the sampling error was 3 percent.

#### *Survey instruments*

Data was collected through a survey aimed at measuring the entrepreneurial intention of university students by focusing on the motivational factors identified by Ajzen (1991): entrepreneurial attitude, subjective norms and the control of the behaviour or capacity of the entrepreneur. All the items used were adapted from known and measured scales using a seven-point Likert scale, between one (strongly disagree) and seven (strongly agree).

#### *Measure of intention*

Based on Ajzen's definition of intention (1991) – that is, in the inclination or entrepreneurial tendency of the graduate – and following Kolvereid (1996), we measured intention through two questions: 1) If you had to choose between being employed or running your own business, what would you prefer?; 2) What is the probability that you will create your own business? Responses with a value close to 7 represent a clear intention to pursue entrepreneurial activities, whereas responses with a value near 1 show an opposed intention.

#### *Measure of attitude*

To measure the attitude of graduates towards the creation of a business, we have adapted previous measures used in the works of Krueger et al. (2000), and Kolvereid (1996). These authors consider attitudes to be a latent variable composed of several items; the importance of each item is in line with the attractiveness of creating their own business. The items measured were: 1) Development of own ideas; 2) Desire for freedom; 3) Taking own decisions; 4) Desire for personal development; 5) Desire to be independent; 6) Control of own time; 7) Greater flexibility; 8) Reconciling employment and family; 9) Adaptation at own pace; and 10) A form of self-employment. Thus, values close to 7 represent a greater entrepreneurial attitude, while values close to 1 express a lesser desire for creating their own business.



### *Measure of subjective norms*

To measure how subjective norms affect the intention to create a business, we adopted the measures of Kolverid (1996) and Autio et al. (2001), which identify a series of demographic and social factors (family, university, and business experience) to study how they determine entrepreneurial intention, both from the subjective point of view and the environment. The items measured were the influence of: 1) Parent's job; 2) Professional experience; 3) Educational attainment of parents; 4) Entrepreneurial training received; 5) Entrepreneurial culture of the environment; 6) University degree studied; 7) Gender; 8) Size of the town of origin; 9) Course year. Values around 1 imply a personal and social environment not favourable to foster an entrepreneurial intention and the opposite with values close to 7.

### *Measure of behavioural control*

To measure the control of the behaviour (or the capacities of the entrepreneur), we have adopted the measures of Kolvereid (1996), Laukkanen (2000), and Nabi and Holden (2008) that evaluate the capacity to develop an entrepreneurial initiative. We have selected the following thirteen statements that participants are asked to state the degree to which they agree or disagree: 1) I take the most appropriate decision; 2) I am committed to compliance with deadlines; 3) I maintain effort and concentration; 4) I have the ability to manage in uncertain environments; 5) I have the ability to innovate; 6) I have the capacity to finance projects; 7) I have legal knowledge; 8) I have the ability to identify key elements of the market; 9) I have adequate training; 10) I have experience; 11) I have the ability to manage a team; 12) I have deterrence capacity; 13) I have the ability to take the initiative and define goals. In this case, values close to 1 indicate a very little capacity to develop a business project and values close to 7 indicate the presences of skills needed to develop a business project.

### *Measure of obstacles and barriers*

Previous literature has highlighted different obstacles, both personal and environmental, that faced business start-ups (Kim et al., 2006). This study considers the following: 1) lack of entrepreneurship education; 2) lack of business experience; 3) difficulty in obtaining financing; 4) complexity of governmental regulations; 5) difficulty in identifying new opportunities in the marketplace; and 6) lack of support from family, friends and institutions. Here, a seven-point Likert scale was used with 1 indicating the absence if a serious barrier for entrepreneurial intention and the opposite with values close to 7.

### *Analysis*

Firstly, a descriptive analysis was made to extract the characteristics of the student who presents an entrepreneurial profile (see Table 1). Then, in order to determine the impact of the explanatory variables (attitude, subjective norms and control of the behaviour and capacity of the entrepreneur) on the intention to create a business, we developed a structural model that allows us to determine which of these variables have a greater incidence in the entrepreneurial intention. Tables 2a, 2b, 2c, 2d and 3 reflect both the measurement and the structural model and show the results of the adjustment of models. Finally, we analyze which obstacles affect the entrepreneurial intention of university students (Table 4).

### **Results and discussion**

The profile of university students with entrepreneurial intentions is shown in Table 1. From the sample of 1,053 students interviewed, entrepreneurial intention is present in almost one in three students (28.9%), while more than seventy percent (71.1%) would prefer to be employed by a company—and within the latter group, around forty percent (40.1%) specify administration as their desired sector. The predisposition to start their own business is slightly higher among men (54.7%) than among women (45.3%). As for age, in the range considered between 18 and 25 years, there is no significant age profile in which the entrepreneurial intention is more pronounced. Regarding the size of the town they live, we observe that more than 50% come from cities with more than 100,000 inhabitants. As for the type of undergraduate studies in which the students were enrolled, no greater intention is found in those that take Social Sciences degrees - like Business and Economic studies – than those that take degrees in Humanities or Technology studies. We do observe, however, a slight decrease in entrepreneurial intention as student's progress in their studies. These outcomes corroborate previous results in the entrepreneurship literature regarding the 'demotivating' effect of education in the incentive to create a business (Souitaris et al., 2007). Despite this, further education does have a positive effect on entrepreneurial intention—albeit in an indirect fashion. This can be seen by the fact that university students with parents that have attended university and/or have studied at a postgraduate level show a more propitious attitude towards creating their own business. Likewise, the entrepreneurial intention is greater in those students whose parents already own a business. Finally, regarding the factor of work experience, we

observe that entrepreneurial intention is more prominent in those who have had a certain amount of work experience, as compared to those who have none.

Regarding entrepreneurship attitude, students value highly the ability to determine the nature of their own project and the development of their own ideas, as well as maintaining their independence and control over their personal development. To a lesser extent, they value aspects such as flexibility, the possibility of reconciling family and employment, or self-employment. As shown in the model of Table 2b, the first factor agglutinates the six most valued items (Cronbach alpha: 0.773) and are related to 'personal fulfilment'. The second-factor groups three variables that are related to 'working life' (Cronbach alpha: 0.608). We find that both factors have a significant and positive influence on entrepreneurial intention, as shown in the structural equation model (Table 3). This influence is greater in the case of personal factors ( $\beta$ : 0.425;  $p < 0.01$ ) than in the case of those related to working life ( $\beta$ : 0.238,  $p < 0.01$ ). These results confirm previous studies that psychological factors, both attitude and personality of the individual are important in the development of entrepreneurial intention (Morris et al., 2013; Sanchez, 2013; Fayolle et al., 2014; Fayolle and Gailly, 2015).

Regarding subjective norms, students highly value the following: having a family business, entrepreneurial training, professional experience, as well as educational attainment of parents (see Table 2c). By contrast, variables such as gender, size of their town, type of university studies or the year in which they were enrolled, are considered by students to be less influential in their entrepreneurial decision. The results in the structural model (Table 3) show that subjective norms have a positive and significant influence on entrepreneurial intention ( $\beta$ : 0,104;  $p < 0.05$ ). Consequently, the student's personal background - the existence of a family business or the educational attainment of parents - as well as training received and the entrepreneurial culture of their environment are the factors that most influence entrepreneurship. These results are consistent with the literature, which highlights the importance of an adequate environment for entrepreneurial development (Chou et al., 2017; Liñán, and Fayolle, 2015; Dohse and Walter, 2010).

Concerning the behavioural control (or the entrepreneurial capabilities) that affect the initiative to create a business, the measurement model (Table 2d) shows three factors that explain 70.2% of the variance. The first one corresponds to the "personal capacities", in which variables such as decision making, effort, and the capacity to

innovate, have a positive and significant incidence in the entrepreneurial intention ( $\beta$ : 0.599,  $p < 0.001$ ). The second factor is related to “the capacity to overcome obstacles”, and groups variables such as the ability to finance projects, the facility to overcome legal inconveniences, and to have adequate experience and training for the creation of a business ( $\beta$ : 0,188;  $p < 0.05$ ). The last factor, which includes the variables related to “management capacity”, does not have a positive and significant impact on entrepreneurial intention. These results highlight the importance of personal skills in entrepreneurial intentions (Boissin et al., 2009; Morris et al., 2013; Sanchez, 2013). However, unlike other studies (Arranz et al., 2017; GEM, 2017; Nabi et al, 2018), our results show the non-significant impact that management capacities have on the entrepreneurial intention. This result is more in line with the studies of a psychological orientation (see, for example, Sanchez, 2013), which emphasize internal control and self-efficacy as main factors for the development of the entrepreneurial intention.

Through the structural model, we determined which factors influence the entrepreneurial intention of university students (Table 3). The model results show that the explained variance is 0.47. These results are in line with those obtained in previous studies based on intention models (Kolvereid and Isaksen, 2006; Lorz et al., 2013; Ozaralli and Rivenburgh, 2016), which allows us to accept the explanatory validity of our model. A second aspect is that a positive and significant influence on attitude ( $p < 0.05$ ), subjective norms ( $p < 0.05$ ) and behavioural control ( $p < 0.05$ ) were observed on entrepreneurial intention. These results are similar to others identified in previous research (Iakovleva et al., 2011; Liñán, 2008; Nabi et al. 2018) that argued for the importance of these three variables in explaining entrepreneurship. From the results of the structural model, we can infer that personal variables (commitment, effort, decision, confidence, innovation) and attitudes related to the desire for self-realization (independence and greater freedom) are those that have a great influence on the entrepreneurial intention of Andalusian university students.

Regarding the issues that are perceived to be the main barriers to implement a business project (Table 4), financial obstacles ( $\beta$ : -0,487;  $p < 0.01$ ), lack of experience ( $\beta$ : -0,293;  $p < 0.10$ ) and training ( $\beta$ : -0,567;  $p < 0.10$ ), as well as market-related obstacles ( $\beta$ : -0,393;  $p < 0.05$ ) pose the greatest threat to an entrepreneurial vocation. These results corroborate the view that universities need to optimize their efforts, both in curricular and extracurricular activities, to support students in developing their entrepreneurial intention (Arpiainen and Kurczewska, 2017; Stadler and Smith, 2017).

By contrast, legal obstacles, lack of support from family, friends and institutions, and difficulty in identifying new opportunities are not perceived by university students as an impediment to the development of a business project of their own, contradicting previous results in the literature (Nguyen et al., 2009; Wu and Wu, 2008). In this sense, the Barometer of Andalusian Entrepreneurship (BEA, 2015) highlights that certain institutions and organizations, both public and private in Andalusia, are very efficient in providing legal and information support for the creation of business, compensating for the lack of support that students find at universities (Arranz et al., 2017; Kirby, 2005). Moreover, the GEM (2017) points out that for Andalusia the propensity to search for business opportunities is not a problem since more than 25% of the population thinks that there are opportunities to create a business.

### **Conclusions and implications**

While an important part of the studies that analyze entrepreneurial initiatives have been concerned with analyzing the general factors that determine the intention to start a business, less attention has been paid to the role that university education plays in that decision. The results of the present study suggest that the students' capacities and desire for personal fulfilment influence their entrepreneurial intention to a much greater extent than the training they receive in the university context. This illustrates the multidimensional nature of entrepreneurial intention in the context of the university (Bae et al., 2014; Souitaris et al., 2007). Moreover, our results are similar to those obtained in previous studies on entrepreneurship, implying that the regional factor is not significant in the development of entrepreneurial intention.

However, although our statistical analysis offers similar results to previous studies may have relevant implications for the implementation of measures that promote personal attitudes and capacities in schools and universities. Based on the findings of our empirical results, we conclude that in addition to transmitting knowledge on the entrepreneurial process, educational programs should be designed in a way that encourage certain personality traits – including the need for personal fulfillment and risk propensity (Nabi and Liñán, 2013) since such characteristics can be considered essential factors influencing the development and realization of a business project (Cardon et al., 2012).

Our results have two main implications for universities. First, the university from its formative task must develop and intensify the programs that favour the

entrepreneurial intention, targeting the main factors identified by the structural model. Thus the university in its curricular activities should develop programs that enhance the psychological factors of the individual by promoting attitudes for entrepreneurship. This has been previously underlined by Morris et al. (2013) and Sanchez (2013), who pointed out the importance of psychological factors for entrepreneurship. These training programs should be combined with the presence of manager and entrepreneurs from different companies, which has been recognized as a factor that encourages the development of entrepreneurial attitudes (Arranz et al., 2017, Liñán, 2008). Second, the university should emphasize the development of skills and capabilities for entrepreneurship. In this sense, universities perform both curricular and extra-curricular activities oriented, for example, to the creation companies and the development of business plans. However, our results highlight the importance of two other factors that affect entrepreneurial intention, self-efficacy and internal behavioural control. Thus, universities should develop training activities that enhance the control of the individual's resources (from within the individual), for example fostering perseverance in the face of problems, self-confidence, commercial skills and creativity and innovation, among others. Finally, our results show that the environment has a positive impact on the development of the entrepreneurial spirit. However, our results also show that universities are being relegated to the background in creating an adequate environment for entrepreneurship. Therefore, it is very important that universities continue to develop extra-curricular activities, linking with networks of public and private institutions to give an adequate support to university students.

The second implication of this study refers to the main barriers that students encounter when implementing a business project. Financing, experience, training and lack of knowledge of the market are obstacles that affect the most to entrepreneurial intention. Thus, the university should continue to promote extracurricular activities to solve these obstacles, for example through the development of short seminars with the presence of entrepreneurs, conferences on financial mechanisms, interconnection with market and institutions databases supporting entrepreneurship, etc. to facilitate the entrepreneurial intention among their students.

No study is without limitations. In the case of this study, the limitation is that the sample used is only regional. Responses are based on the perception of potential graduates about the intention and barriers to entrepreneurship. The barriers and motivations encountered by graduates who actually started their own businesses were

not investigated in this study. In addition, care should be taken in generalizing the findings of this study to all Spanish graduates since the data was collected from only one Spanish region that is not at the forefront of entrepreneurship and innovation in the national context.

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Table 1. Profile of university students with an entrepreneurial intention

| <b>Variables</b>                  | <b>Items</b>                | <b>Sample (%)</b> | <b>Entrepreneurs (%)</b> |
|-----------------------------------|-----------------------------|-------------------|--------------------------|
| <b>Gender</b>                     | Men                         | 46.8              | 54.7                     |
|                                   | Women                       | 53.2              | 45.3                     |
| <b>Size of the town of origin</b> | < 1.000 hab.                | 1.5               | 1.2                      |
|                                   | From 1.000 to 10.000 hab.   | 11.3              | 13.7                     |
|                                   | From 10.000 to 100.000 hab. | 39.4              | 29.6                     |
|                                   | > 100.000 hab.              | 47.8              | 55.6                     |
| <b>Age</b>                        | 18                          | 12.1              | 13.7                     |
|                                   | 19                          | 13.3              | 13.8                     |
|                                   | 20                          | 16.0              | 15.9                     |
|                                   | 21                          | 14.1              | 15.2                     |
|                                   | 22                          | 13.6              | 11.4                     |
|                                   | 23                          | 9.7               | 8.6                      |
|                                   | 24                          | 5.8               | 6.1                      |
|                                   | 25                          | 5.5               | 3.2                      |
|                                   | Other                       | 9.9               | 12.1                     |
| <b>Degree</b>                     | Humanities                  | 28.2              | 29.0                     |
|                                   | Social Sciences             | 36.2              | 38.3                     |
|                                   | Technology studies          | 35.6              | 32.7                     |
| <b>Course</b>                     | 1st                         | 17.2              | 25.9                     |
|                                   | 2nd                         | 23.8              | 26.2                     |
|                                   | 3rd                         | 24.6              | 19.7                     |
|                                   | 4th                         | 21.5              | 14.5                     |
|                                   | 5th                         | 12.9              | 13.7                     |
| <b>Father educational level</b>   | Without studies             | 5                 | 4.3                      |
|                                   | Primary school              | 32.8              | 23.9                     |
|                                   | Secondary school            | 27.4              | 17.1                     |
|                                   | Vocational training         | 16.1              | 13.7                     |
|                                   | Bachelor degree             | 18.7              | 41                       |
| <b>Mother educational level</b>   | Without studies             | 6.4               | 3.2                      |
|                                   | Primary school              | 30.8              | 21.6                     |
|                                   | Secondary school            | 24.6              | 22.3                     |
|                                   | Vocational training         | 13.4              | 14.9                     |
|                                   | Bachelor degree             | 24.8              | 38.0                     |
| <b>Job of parents</b>             | Own business                | 21.7              | 36.8                     |
|                                   | Salaried                    | 42.5              | 32.5                     |
|                                   | Civil servant               | 23.6              | 17.9                     |
|                                   | Other                       | 12.2              | 12.8                     |
| <b>Professional experience</b>    | Yes                         | 25.9              | 56.9                     |
|                                   | No                          | 74.1              | 43.1                     |

Table 2a. Measurement Model of Entrepreneurship Intention

| <b>Intention</b>                            | <b>Mean</b> | <b>S.D.</b> | <b>Factor 1</b> | <b>Pearson</b> |
|---|-------------|-------------|-----------------|----------------|
| 1. I prefer to be employee/self-employed    | 3.1         | 0.77        | <b>0.340</b>    | 0.501          |
| 2. Probability to be employee/self-employed | 2.6         | 0.83        | <b>0.468</b>    |                |

Principal Component Analysis. Varimax Rotation. KMO: 0.427.

Table 2b. Measurement Model of Entrepreneurship Attitude

| Attitude                           | Mean | S.D. | Factor 1     | Factor 2     | Cronbach-Alpha |
|------------------------------------|------|------|--------------|--------------|----------------|
| 1. Development of my own ideas     | 5.8  | 0.55 | <b>0.825</b> | -            | 0.773          |
| 2. Desire for freedom              | 5.3  | 0.91 | <b>0.817</b> | 0.399        |                |
| 3. Take my own decisions           | 5.6  | 0.78 | <b>0.711</b> | 0.467        |                |
| 4. Desire for personal development | 4.7  | 1.01 | <b>0.650</b> | 0.319        |                |
| 5. Desire to be independent        | 4.9  | 0.33 | <b>0.644</b> | 0.311        |                |
| 6. Control of my own time          | 4.2  | 0.56 | <b>0.618</b> | 0.325        |                |
| 7. Greater flexibility             | 5.0  | 0.77 | -            | <b>0.625</b> |                |
| 8. Reconcile employment and family | 4.5  | 0.24 | -            | <b>0.501</b> |                |
| 9. Adaptation at my own pace       | 4.6  | 0.39 | 0.387        | <b>0.431</b> |                |
| 10. A form of self-employment      | 3.2  | 0.92 | -            | -            |                |

Principal Component Analysis. Varimax Rotation. KMO: 0.643. Values < 0.3 were eliminated.

Table 2c. Measurement Model of Subjective Norms

| Subjective Norms  | Mean | S.D. | Factor 1     | Cronbach-Alpha |
|---|------|------|--------------|----------------|
| 1. Influence of parents' job                                | 5.2  | 0.72 | <b>0.540</b> | 0.611          |
| 2. Influence of your professional experience                | 4.6  | 0.71 | <b>0.427</b> |                |
| 3. Influence of educational attainment of parents           | 4.0  | 0.50 | <b>0.425</b> |                |
| 4. Influence of entrepreneurial training received           | 3.1  | 0.38 | <b>0.441</b> |                |
| 5. Influence of entrepreneurial culture of your environment | 3.5  | 0.67 | <b>0.399</b> |                |
| 6. Influence of your university degree                      | 3.2  | 0.54 | <b>0.337</b> |                |
| 7. Influence of gender                                      | 1.7  | 0.22 | -            |                |
| 8. Influence of the size of your town of origin             | 2.3  | 0.23 | -            |                |
| 9. Influence of course year                                 | 1.5  | 0.36 | -            |                |

Principal Component Analysis. Varimax Rotation. KMO: 0.527. Values < 0.3 were eliminated.

Table 2d. Measurement Model of Behavioral Control

| Behavioural Control  | Mean | S.D. | Factor 1     | Factor 2     | Factor 3     | Cronbach-Alpha |
|--|------|------|--------------|--------------|--------------|----------------|
| 1. I take the most appropriate decision                            | 4.0  | 0.51 | <b>0.725</b> | -            | -            | 0.885          |
| 2. I am committed with the compliance of deadlines                 | 4.9  | 0.70 | <b>0.713</b> | 0.321        | -            |                |
| 3. I maintain the effort and the concentration                     | 4.6  | 0.63 | <b>0.701</b> | -            | -            |                |
| 4. I have the ability of manage in uncertain environments          | 4.2  | 0.66 | <b>0.638</b> | -            | 0.324        | 0.713          |
| 5. I have the ability to innovate                                  | 4.8  | 0.81 | <b>0.525</b> | 0.377        | 0.301        |                |
| 6. I have the capacity to finance projects                         | 2.5  | 0.30 |              | <b>0.669</b> |              |                |
| 7. I have legal knowledge  | 3.3  | 0.38 |              | <b>0.583</b> |              |                |
| 8. I have the ability to identify the keys of the market           | 2.9  | 0.24 |              | <b>0.511</b> |              |                |
| 9. I have the adequate training                                    | 3.9  | 0.57 |              | <b>0.421</b> |              |                |
| 10. I have experience  | 2.2  | 0.44 |              | <b>0.309</b> |              |                |
| 11. I have the ability of team management                          | 3.8  | 0.46 | -            | -            | <b>0.550</b> | 0.652          |
| 12. I have the ability of deterrence                               | 3.4  | 0.34 | -            | -            | <b>0.477</b> |                |
| 13. I have the ability to take the initiative and define the goals | 3.7  | 0.38 | 0.309        | -            | <b>0.315</b> |                |

Principal Component Analysis. Varimax Rotation. KMO: 0.702. Values < 0.3 were eliminated.

Table 3. Structural Model of Entrepreneurship Intention

| Variables            | Attitude |         | Norms   |         | Control  |         | Intention |         |
|----------------------|----------|---------|---------|---------|----------|---------|-----------|---------|
|                      | $\beta$  | t-value | $\beta$ | t-value | $\beta$  | t-value | $\beta$   | t-value |
| Attitude (F1)        | 0,330*** | 6,112   | -       | -       |          |         | 0,425***  | 6,182   |
| Attitude (F3)        | 0,299**  | 4,762   | -       | -       |          |         | 0,238**   | 3,501   |
| Norms                | -        | -       | 0,133*  | 3,120   |          |         | 0,104*    | 3,015   |
| Control(F1)          | -        | -       |         |         | 0,514*** | 6,021   | 0,599***  | 5,908   |
| Control (F2)         | -        | -       |         |         | 0,128*   | 3,510   | 0,188*    | 2,917   |
| Control (F3)         |          |         |         |         | 0,104    | 1,082   | 0,093     | 1,182   |
| <b>R<sup>2</sup></b> | 0,32     |         | 0,16    |         | 0,28     |         | 0,47      |         |

M1(Attitude):  $\chi^2=87, 101$ ; d.f.=71;  $p<0,01$ ; IFI=0,89; TLI=0,90; GFI=0,88; CFI=0,92; RMR=0,08 and RMSEA=0,07  
M2(Norms):  $\chi^2=81,230$ ; d.f.= 65;  $p<0,01$ ; ; IFI=0,87; TLI=0,86; GFI=0,89; CFI=0,90; RMR=0,09 and RMSEA=0,06  
M3 (Control):  $\chi^2=89,708$ ; d.f.= 69;  $p<0,01$ ; ; IFI=0,84; TLI=0, 83; GFI=0, 88; CFI=0,89; RMR=0,07 and RMSEA=0,06  
M2(Intention):  $\chi^2=90,108$ ; d.f.= 72;  $p<0,01$ ; ; IFI=0,90; TLI=0,90; GFI=0, 91; CFI=0,93; RMR=0,09 and RMSEA=0,09  
\*p<.05; \*\*p<.01; \*\*\*p<.001

Table 4. Descriptive statistics and logit regression analysis of Obstacles (dependent variable: Intention)

| Obstacles  | Mean | Std. Deviation | Estimate         | Std. Error |
|--|------|----------------|------------------|------------|
| 1. Lack of entrepreneurship education                        | 3.47 | 1.707          | <b>-0.567*</b>   | 0.222      |
| 2. Lack of business experience                               | 4.65 | 1.887          | <b>-0.293*</b>   | 0.146      |
| 3. Difficulty in obtaining financing                         | 5.52 | 1.724          | <b>-0.487***</b> | 0.119      |
| 4. Complexity of governmental regulations                    | 3.54 | 1.764          | <b>-0.128</b>    | 0.192      |
| 5. Difficulty in identifying new opportunities in the market | 4.36 | 1.544          | <b>-0.393</b>    | 0.212      |
| 6. Lack of support from family, friends and institutions     | 3.17 | 1.718          | <b>-0.083</b>    | 0.208      |
| -2 Log Likelihood  |      |                | 115.887          |            |
| Chi-Square   |      |                | 1093.907         |            |
| df   |      |                | 6                |            |
| Sig.   |      |                | 0.000            |            |
| McFadden   |      |                | 0.787            |            |