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Psychological and Biographical Determinants of Entrepreneurial Intention: Does the Learning Environment Act as a Mediator?

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Abstract: The aim of this research is to study the mediating role of the learning process in explaining the relationships between certain psychological and biographical characteristics and entrepreneurial intention. The findings suggest that the effect of psychological and biographical aspects on entrepreneurial intention depend on the extent to which students are able to take advantage of their personal capabilities in order to develop an effective learning process. Learning process factors (information about course guides, student effort and educational processes) mediate the relationships between specific psychological factors (achievement need, internal control and autonomy) and entrepreneurial intention. With regard to biographical factors, we find no mediating effect on entrepreneurial intention through the learning process. The present study provides a better understanding of the antecedents of entrepreneurial intention, helping to fill the gap in the literature.

Keywords: entrepreneurial intention; learning process; entrepreneurial education; psychological factors; biographical factors; mediating model

1. Introduction

According to the Central Business Register (INE 2018), in August 2018, small and medium-sized enterprises (SMEs) made up 99.80% of the Spanish industrial fabric. In other words, out of a total of 2,870,935 companies, only 4473 were considered large companies. In addition, these SMEs employed a total of 8,277,215 workers compared to 5,173,179 for large companies, that is, 53.5% of workers in Spain were employed in SMEs, 33.5% in large companies and the remaining 13% corresponded to self-employed workers without dependent employees. Faced by a business structure with a clear predominance of small businesses and self-employed workers in most countries, entrepreneurs are gaining significant importance as they are able to generate new jobs and contribute to the growth and modernization of the economy (Carlsson et al. 2013). In this sense, entrepreneurship is a key factor for economic growth, the generation of new jobs, increased innovation and improved productivity in countries (Türker and Sonmez 2009; Gómez-Gras et al. 2010; Keat et al. 2011; Urbano and Aparicio 2015). This key role of entrepreneurship has generated a growing interest in areas such as politics, economics, psychology, management and cognitive aspects since the last decades of the past century (Kuttim et al. 2014).

Entrepreneurship has been considered the process of seeking, evaluating and subsequently exploiting opportunities in markets, and entrepreneur refers to the person who performs this process (Shane and Venkataraman 2000). Van Gelderen et al. (2008) defined entrepreneurship as an attitude

based on two aspects: The intention and the capacity of an individual to search, identify and take advantage of an opportunity. Thus, before a person can be an entrepreneur, they must firstly be a potential entrepreneur (Krueger and Brazeal 1994), that is, they must have a strong intention of being an entrepreneur. According to social psychology, intention is the best predictor of a planned behaviour (Brito et al. 2014), so entrepreneurial intention, understood as the mental state of a person focused on the creation of a new business (Prodan and Drnovsek 2010), represents the best predictor of becoming an entrepreneur in the future (Kautonen et al. 2015). In conclusion, by acting as the first step in creating a company, entrepreneurial intention represents a key element in understanding the process of entrepreneurship (Lee and Wong 2004). Hence, the study of entrepreneurship in the economic literature has grown exponentially in recent years (Kuttim et al. 2014; Arias et al. 2015).

Several works have studied the factors that affect entrepreneurial intention (e.g., De Pillis and Reardon 2007; Liñán et al. 2011; Antonioli et al. 2016; Barba-Sánchez and Atienza-Sahuquillo 2017; among others). However, entrepreneurial intention is a multi-causal phenomenon that has not been explored in its entirety; further research is required to better understand the causes. Traditionally, the main reason for starting a business has been considered to be economic interest (Carsrud and Brännback 2009). However, recent studies highlight the existence of other reasons (Hatak et al. 2015). Mazzarol et al. (1999) emphasize that entrepreneurship can be studied by focusing on individuals' internal factors, such as their personal characteristics, specific features, such as personality and human capital, or exogenous factors, such as the general environment, the culture, the political system and economic growth.

In line with the above, entrepreneurial intention may emerge due to psychological, sociological or environmental reasons. In the case of environmental factors, unemployment stands out as a key contextual determinant of entrepreneurial intention (Kautonen and Palmroos 2010). The internal characteristics of individuals have also been widely recognised as predictors of entrepreneurial intention (Ciavarella et al. 2004). Ashley-Cotleur et al. (2009) highlight, in particular, the psychological and biographical factors. Regarding psychological factors, Harris et al. (2007) underline their influence in the likelihood of a person creating a company. Biographical factors, which are linked to aspects such as age or gender, also influence the determination of entrepreneurial intention (Toledo-Nickels 2001). Despite the numerous contributions in the literature on entrepreneurship, several authors point out that the discussion about the internal factors with the greatest impact on entrepreneurial intention is still open. Several studies demand this gap be filled (Arias et al. 2015). Furthermore, the mechanisms that link these individual factors to greater entrepreneurial intention are still not fully understood (Van Gelderen et al. 2008; Barba-Sánchez and Atienza-Sahuquillo 2017). There is a gap, then, that encourages us to delve into how acquired and perceived skills of business undertaking can connect the personal traits of individuals with their entrepreneurial intention (Mueller 2011).

In order to respond to these gaps in the literature, we propose two research lines in this study. First, it is necessary to analyse the explanatory value of various psychological and biographical factors in understanding entrepreneurial intention, in line with the approaches of various studies (De Pillis and Reardon 2007; Liñán et al. 2011; De la Rosa et al. 2014; among others). Specifically, of the psychological characteristics, we study achievement need, autonomy, internal control and optimism; and, of the biographical features, we analyse the influence of age, previous work experience, gender and university access grades. Second, it is necessary to understand how the process of acquiring entrepreneurial skills can drive individuals with certain characteristics towards entrepreneurship.

Given the relevance of entrepreneurship for the economic, employment and social development of countries, many governments consider entrepreneurial education a key factor in the channelling of support resources for entrepreneurship (Altinay et al. 2012). This governmental support for entrepreneurship education is based on two general ideas: First, entrepreneurship is not only innate, and can be learned and transmitted through learning processes (Harkema and Schout 2008), and second, education in entrepreneurship is a determinant of entrepreneurial intention (Türker and Sonmez 2009; Lima et al. 2015; Musteen et al. 2018; among others). Thus, a greater number of

academic business-related subjects increase and reinforce the intention to create a company in the future. Consequently, from the first entrepreneurship courses developed in the 1950s to the present, there has been a great increase in actions related to entrepreneurial education. Universities are responsible for offering education in entrepreneurship that is of quality and that is adjusted to market needs, which allows students to improve their knowledge and entrepreneurial intention. From this approach, several authors have pointed out that a key problem to be solved is the design of an adequate learning process to motivate students for entrepreneurship (Auken 2013). Thus, it is necessary to develop new pedagogical strategies that allow students to acquire business skills and increase their entrepreneurial intention (Liñan and Fayolle 2015). In contrast to the widely accepted positive relationship between education in entrepreneurship and entrepreneurial intention (Lorz et al. 2011), in recent years, several works have appeared with contradictory results (Oosterbeek et al. 2010; Fayolle and Gailly 2013; among others). New research is then required to delve deeper into the role of the learning process in entrepreneurial intention.

The aim of this study is to respond to this demand, analysing the role in entrepreneurship education of the learning process in driving the personal characteristics—psychological and biographical—of students towards greater entrepreneurial intention. To this end, we analyse key elements of the learning process, such as the information provided on the course, the effort students make and the educational process. To address this goal, on the one hand, we analyse the role of psychological factors (achievement need, internal control, optimism and autonomy) and biographical characteristics (age, work experience, gender and the university access grades) in entrepreneurial intention, in order to detect the explanatory capacity of each one. On the other hand, we study the mediating effect of the learning process in the relationship between personal factors and entrepreneurial intention. With this new approach, we intend to contribute to the literature by explaining how the learning process must be oriented towards taking advantage of the potential of university students, and the value of entrepreneurial education in the university through the subjects related to entrepreneurship.

To develop this work, we analysed a sample of 167 students of entrepreneurship in the fourth and final year of the Degree in Labour Relations and Human Resources at the University of Castilla-La Mancha between 2012 and 2018. This sample is suitable for studying entrepreneurial intention (Bae et al. 2014), since university students in the final year must make decisions on their professional life, and those enrolled in entrepreneurship courses are considered a population of potential entrepreneurs (Sánchez et al. 2005). In sum, it is especially interesting to analyse the personal factors of students that influence entrepreneurial intention, as well as the role of the learning process in entrepreneurship in instilling greater entrepreneurial intention.

This work is structured as follows: First, the theory and hypotheses are explained, followed by a description of the methodology. Subsequently, the results are presented. Finally, the discussion, conclusions, recommendations, limitations and future research proposals are established.

2. Theoretical Backgrounds to Entrepreneurial Intention and Hypotheses

2.1. Entrepreneurial Intention

Entrepreneurship has generated great interest in recent decades in different fields of study due to its importance for the economic development of countries (Türker and Sonmez 2009; Keat et al. 2011; Kuttim et al. 2014; Urbano and Aparicio 2015). Within the study of entrepreneurship, different lines of research have emerged, among which entrepreneurial intention (Arias et al. 2015) stands out in recent years due to the need to understand its background and to promote the development of entrepreneurial projects.

The concept of intention originated in cognitive psychology to explain or try to predict human behaviour (Fatoki 2010). Ajzen (1987) established that intention could predict behaviour. For Gibbs (2004), intention is the psychological state of a person linked to a plan to try to achieve a

reachable goal. Therefore, intention represents the determination or commitment to performing a certain action. Hence, it is configured as the best predictor of a planned behaviour, especially when it is rare or difficult to observe, such as in the case of entrepreneurship (Brito et al. 2014).

Entrepreneurship is considered an intentional activity (Henley 2007), based on two aspects: The intention, and the capacity of an individual to search, identify and take advantage of an opportunity (Van Gelderen et al. 2008). In this way, before a person becomes an entrepreneur, they must first be a potential entrepreneur (Krueger and Brazeal 1994). Moreover, people with entrepreneurial intention tend to adopt a rational behaviour to create a new business (Fatoki 2010), generating predisposition as the foundation for the creation of new companies. In this sense, entrepreneurial intention, understood as the mental state of a person focused on the creation of a company (Prodan and Drnovsek 2010), helps to understand the process of entrepreneurship (Lee and Wong 2004), being configured as one of its key predictors (Kautonen et al. 2015). As is emphasized in the extensive literature on this topic, entrepreneurial intention is affected by several factors, among which we identify those linked to psychological and biographical aspects.

2.2. Personal Backgrounds. The Psychological and Biographical Factors

The antecedents of the intention and the action to be undertaken are very varied. The literature distinguishes between factors linked to the birth of a “pull” opportunity or a “push” need (Verheul et al. 2016). The literature recognises the opportunity when the individual considers the creation of a company as a reason to obtain monetary benefits (higher level of incomes), for psychological aspects (autonomy, self-realization, independence, etc.), or the need to become self-employed because the market labour does not meet their demands (unemployment, dissatisfaction, etc.). In the same way, entrepreneurial intention may be due to the internal characteristics of the individual or his environment (Mazzarol et al. 1999). Thus, compared to the traditional conception of business creation for economic reasons (Carsrud and Brännback 2009), we find other justifications that introduce psychological, social and contextual factors as antecedents of entrepreneurial intention.

Research works in the literature have demonstrated that the contextual factors of an individual—political, economic, cultural, technological, etc.—influence entrepreneurial intention. In this sense, Kautonen and Palmroos (2010) showed that high levels of unemployment tend to encourage entrepreneurship. De Pillis and Reardon (2007) verified, after analysing cultural features of the United States and Ireland, that a country’s culture of entrepreneurship influences the tendency of individuals to create a new company.

In this work, we focus on the personal antecedents of entrepreneurial intention (Ciavarella et al. 2004). Despite the criticisms of the consideration of these internal factors as unreliable indicators compared with other explanatory models (Arias et al. 2015), several studies have highlighted that the characteristics of individuals have a greater explanatory influence on entrepreneurial intention than economic and contextual factors (Ilouga et al. 2014). This discussion leads us to focus on the analysis of the characteristics of individuals as antecedents of entrepreneurial intention.

According to Ashley-Cotleur et al. (2009), certain individual factors influence the decision to start a business, and can be grouped into two types (Fatoki 2010): Psychological and demographic. In the last decade, psychological characteristics (Espíritu-Olmos and Sastre-Castillo 2015), and biographical features have received great attention, including, among others, gender (Davidsson 1995; De la Rosa et al. 2014), age (Martínez and Milone 2016) or work experience (Loli et al. 2010).

Psychological traits have been widely used in the entrepreneurship literature. In this line, Harris et al. (2007) established that personality characteristics influence the probability of a person creating a new business. Espíritu Olmos (2011) also states that certain psychological features are associated with an entrepreneur. From the social psychology approach, psychological characteristics are linked to attitudes, which were defined by Fishbein and Ajzen (1975) as a predisposition to respond favourably or unfavourably in time with respect to a certain object. This attitude is a predictor of people’s behaviour in aspects such as entrepreneurship.

The Theory of Personality Traits, which appeared in the 1960s with the work by McClelland (1961), is a first approach by the field of psychology to the study of entrepreneurship. According to this author, the personality traits of an individual are necessary to create a company, thus differentiating entrepreneurs from the rest of the population. Obschonka et al. (2010) proposed a personality pattern for entrepreneurs, establishing that individuals with similar characteristics to those proposed in their work, showed greater entrepreneurial intention. However, several authors suggest there is no single psychological profile of entrepreneurs (Marulanda et al. 2009), and thus further research is required. Hence, we focus on the most relevant psychological traits addressed in the entrepreneurship literature, as follows:

- Achievement need: This can be understood as a strong need to achieve objectives, goals and proposed tasks through great efforts (Arias et al. 2015). McClelland (1961) considers this feature predisposes people to performing exceptional activities as a measure of achievement. In addition, he considers it is related to the desire to solve problems and achieve priority objectives, assuming moderate risks after the evaluation of the alternatives and the need to receive feedback to measure their success. This feature has been widely studied in the literature on entrepreneurship, and several authors have highlighted its influence on entrepreneurial intention (Sánchez et al. 2005; Mai and Anh 2013; Sánchez et al. 2005; Soomro and Shah 2015).
- Internal control: Internal control, or locus of control, refers to the belief that the things that happen in life are due to the actions of individuals. Therefore, it refers to a person's expectation of controlling everything that happens in their life (Mokhtar and Zainuddin 2011). People with a high locus of control consider that results in their lives are a consequence of their own actions. In contrast, a person with a low locus of control considers that everything that happens in their life is due to factors beyond their control, such as luck (De Pillis and Reardon 2007). Internal control has been linked with entrepreneurship in some research works (Gatewood et al. 1995). Ajzen (1991), for example, points out that internal control is necessary for a person to make decisions about the risks taken to create a new company.
- Optimism: This is the attitude an individual presents regarding an event in their life. An optimistic person tends to stay positive in the face of future expectations, whereas a pessimistic person tends to remain negative in the face of future expectations (Scheier et al. 1994). Due to its characteristics, entrepreneurship is a complex and risky activity. In this case, optimistic people will pay more attention to opportunities than risks or difficulties. Thus, González and Valdez (2012) consider that the optimistic orientation of a person leads them to experience positive feelings in the face of difficulties by helping them in complex activities such as entrepreneurship. Similarly, Loli et al. (2010) point out that optimism is a characteristic of people with entrepreneurial intention.
- Autonomy: This is a feature that allows an individual to act according to their own criteria, independently of the opinion of third parties. This independence when acting is linked to the possibility of carrying out one's own ideas (Sánchez et al. 2005). Entrepreneurship allows a person to define their life, their objectives and how or when they do things (Hessels et al. 2008). Several works have found that the main reason for creating a new business is a person's need for autonomy (Fatoki 2010). In particular, Martínez and Milone (2016) found that the most important reason to create one's own company is the non-dependence on a superior.

Biographical factors, linked to an individual's circumstances, have received great attention in the last decade in the study of the background to entrepreneurial intention (Loli et al. 2010; Brito et al. 2014; Phipps and Prieto 2015; Martínez and Milone 2016). Of the different biographical factors presented in an individual, the literature highlights age and gender as two basic factors that usually affect people's behaviour. In addition, we incorporate two complementary factors—university access grades and professional trajectory-work experience—linked to the educational trajectory of potential entrepreneurs. In this work, therefore, we analyse the following:

- Age: A large body of literature has underlined that younger people have a greater entrepreneurial intention compared to older individuals (Davidsson 1995; Obschonka et al. 2010; Martínez and Milone 2016).
- Work experience: A person's previous work experience favours the development of greater entrepreneurial intention (Loli et al. 2010; Martínez and Milone 2016). However, for Brito et al. (2014), work experience does not directly influence entrepreneurial intention but acts indirectly on it, through other factors, such as desirability or perceived easiness.
- Gender: The study of gender in entrepreneurial intention began in the 1980s and continues today (Ventura Fernández and Gervilla 2013). The results obtained in different studies show that gender has an influence on entrepreneurial intention. Specifically, authors have found a greater entrepreneurial intention in men compared to women (Davidsson 1995; Brito et al. 2014; Martínez and Milone 2016).
- University access grades: In this case, the overall grades achieved by students to access university studies are analysed in order to observe their influence on entrepreneurial intention. Previous studies, such as that by Happ et al. (2016), measured the grades obtained by students at high school, correlating them with the learning outcomes in introductory economics courses at university.

In summary, the aforementioned arguments allow us to hypothesize that certain psychological traits—achievement need, internal control, optimism and autonomy—and biographical factors—age, work experience, gender and university access grades—positively influence entrepreneurial intention. Therefore, we formulate the following hypotheses:

Hypothesis 1. *Psychological factors (achievement need, internal control, optimism and autonomy) have a positive effect on students' entrepreneurial intention.*

Hypothesis 2. *Biographical factors (age, work experience, gender and university access grades) have a positive effect on students' entrepreneurial intention.*

2.3. The Role of the Learning Process

Entrepreneurship is not something uniquely innate. It can be learned and transmitted through learning processes (Harkema and Schout 2008). Several studies have shown that entrepreneurship education positively affects an individual's entrepreneurial intention (Türker and Sonmez 2009; Mueller 2011; Lima et al. 2015; among others). Based on these premises, actions in entrepreneurship education have increased exponentially since the first entrepreneurship courses in the middle of the last century. Governments and public and private institutions have driven these actions, investing in resources to support entrepreneurship as a source to generate economic growth and employment, (Altinay et al. 2012). In Spain, this support from institutions is enshrined in Law 14/2013 on Support for Entrepreneurship and Its Internationalization¹, which highlights the need to implement education in entrepreneurship from primary to university education, including vocational training. The aim is to provide students with the necessary skills to undertake and support an entrepreneurial initiative, in accordance with other European Union guidelines. In addition, with the implementation of the Bologna Process, European universities have introduced new educational actions, such as teaching through projects, teamwork, autonomy, creativity, etc., to more actively encourage entrepreneurship among students (Freire 2015). In sum, higher education in all fields of knowledge has acquired great relevance for the development of business skills (González Moreno et al. 2019), and to encourage entrepreneurial intention. Therefore, academic institutions, especially universities, have the obligation

¹ Law No. 233 on Support for Entrepreneurs and their Internationalization. Official State Gazette, Spain, September 28, 2013.

to provide education in entrepreneurship of quality, adjusted to market needs, allowing students to improve their knowledge and business skills, as well as their entrepreneurial intention. In this sense, the design of an adequate learning process that motivates students for entrepreneurship (Auken 2013) is a key aspect.

Pintrich (1994), one of the most famous researchers in educational psychology, published an interesting work on research trends in education. This author invites readers to think about the knowledge acquired up to that moment, and then to try to develop an integrated theoretical model. Until that time, most of the research on learning in schools had focused on separate variables and there was little research into the interaction between the components of entrepreneurial intention (Valle et al. 2003). A person's learning process is affected by the interaction between their personal and contextual characteristics. Some authors point out the influence of both types of characteristics (Richter 1998), while others, on the other hand, emphasize the importance of personal characteristics (Ashford and Black 1996). In this paper, we focus special attention on the role of personal traits (psychological and biographical) of students in the learning process, in line with previous research (Fine-Davis and Faas 2014; Happ et al. 2016; among others). Several authors have indicated that psychological factors can affect the ability to learn (Fine-Davis and Faas 2014). Brückner et al. (2015) also highlight that biographical factors affect learning in economics subjects.

In line with the above, Valle et al. (2003) found a positive relation between certain personal factors and learning. Other authors such as Schunk and Pajares (2004) have focused on the role that student self-efficacy has on entrepreneurial intention. A recent work addressed the relationship between personality traits and entrepreneurial intention, demonstrating direct and indirect relationships between personality and coping and adjustment, and linking certain personality factors with achievement during a typical stressful education process (Perera et al. 2015). Other authors who have analysed the influence of biographical factors are Entwistle and Smith (2002). They explained that each person's vital experiences will influence their development of comprehension within educational contexts and, therefore, will impact their academic results. In addition, recent research by Hughes et al. (2015) focused on the development of tools to analyse the influence of a student's social and behavioural competencies and family support.

Taking into account these approaches, we understand that the psychological and biographical factors of students influence the learning process in entrepreneurship. This learning process requires the use of different study techniques, engaging students to influence their entrepreneurial intention. Therefore, it is not only important to underline the relationship between personal factors and entrepreneurial intention, but also to study the role of the learning process. In the case of business education, which is based on the creation of skills and competencies related to entrepreneurship, these factors can also influence students to choose a professional career, which can be oriented towards entrepreneurship (Arias et al. 2015). We propose that the learning process represents an interceding factor, which is able to bridge the gaps between psychological and biographical factors, and entrepreneurial intention. Thus, we understand that only students who leverage the potential of their personal traits (psychological and biographical) to develop a learning process in effective entrepreneurship will improve their entrepreneurial intention.

In this work, entrepreneurship education refers to the learning process, considering the information provided by the course guide, students' effort and the educational process. This process focuses on fourth year students studying Entrepreneurship as part of their degree in Labour Relations and Human Resources at the University of Castilla-La Mancha. In addition, we have paid special attention to the strategic perspective, highlighting that each student will be able to acquire the best efficiency by means of activities, efforts and available time for suitable planning (Valle et al. 2003). In general, it is worth noting that the literature attaches great importance to the learning process in order to explain the reciprocal relationship between learning experience and study behaviour, and their relative impact on academic performance or entrepreneurial orientation (Hailikari and Parpala 2014).

With this research, we expect to demonstrate that, if students are able to leverage their psychological and biographical characteristics to develop an effective learning process in entrepreneurship, they will achieve higher entrepreneurial intention. Thus, if students focus their capabilities and experiences to identify key aspects of the learning process, to use the proposed techniques efficiently and to strategically develop the process of an entrepreneurship learning system, they will achieve higher academic outcomes and entrepreneurial intention.

We base our approach on the proposition that students learn by an inner, active process of knowledge construction through their inner capacities and their own experience, and also by means of the completion of comprehension and information coming from their external reality, that is, their learning process. According to Shagrir (2015), it is precisely during the learning process that the teacher supports the student, providing them with tools and a learning system, which the student, according to our model, will have tapped in order to obtain good results. Thus, we consider that the learning process leads students to greater entrepreneurial intention through their personal factors. Therefore, we understand that inner capacities and experiences are not enough, only if students take advantage of their capacities and experiences to encourage the entrepreneurial learning process, will they be able to achieve enhanced entrepreneurial intention.

Finally, the review of the literature and the theoretical basis expounded therein led us to propose a mediating theoretical model (Figure 1). In this model, we start from the direct effects of psychological and biographical factors on students' entrepreneurial intention. However, we suggest that the effect of psychological and biographic characteristics on entrepreneurial intention will depend on the extent to which students are able to take advantage of their personal capabilities to develop an effective learning process. Thus, we propose a mediating role of the learning process to drive the psychological and biographic characteristics of the students towards entrepreneurial intention. Therefore, we can define these relationships through the following hypotheses:

Hypothesis 3. *The learning process (information, student effort, educational process) mediates the relationship between psychological factors (achievement need, internal control, optimism and autonomy) and students' entrepreneurial intention.*

Hypothesis 4. *The learning process (information, student effort, educational process) mediates the relationship between biographical factors (age, work experience, gender and university access grades) and students' entrepreneurial intention.*

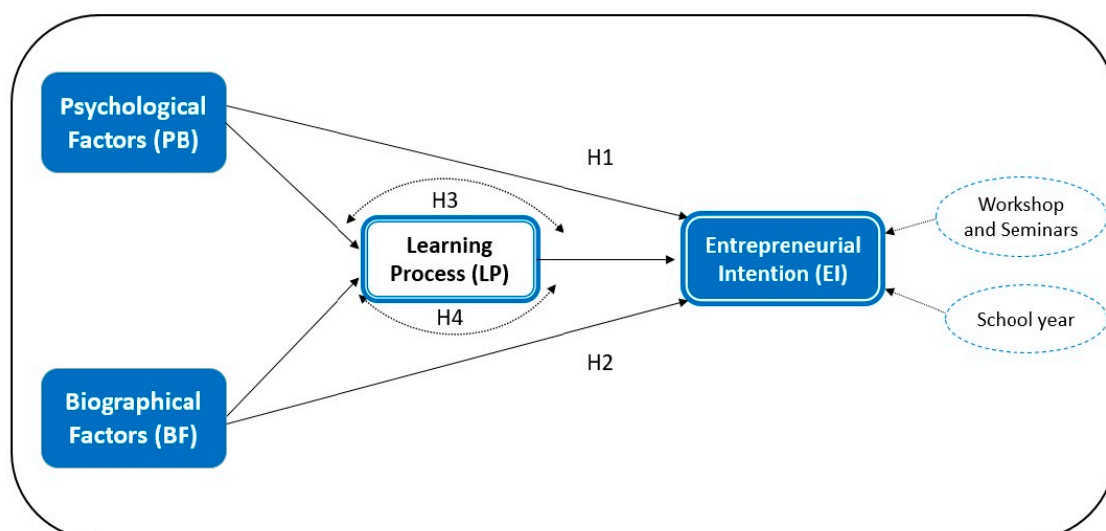


Figure 1. Proposed model and hypotheses.

3. Variables and Measures

3.1. Population and Sample

An empirical study was conducted on students of Entrepreneurship within the Business Administration Department, studying a degree in Labour Relationships and Human Resources at the University of Castilla-La Mancha. The course is taught in the fourth year of the degree. The information was obtained for six years, from 2012/2013 to 2017/2018.

The number of students enrolled in the subject was 215. Participants ranged in age from 18 to 78. In the last class of each course, they were given a voluntary questionnaire, which was completed by 167 students (response rate of 77.67%). This can be considered a satisfactory rate in comparison with similar surveys.

The use of a sample of university students to analyse entrepreneurial intention is common in the literature (see, among others, [Ventura Fernández and Gervilla 2013](#); [Bae et al. 2014](#)), since students have been considered a potential population of entrepreneurs ([Sánchez et al. 2005](#)). Likewise, the sample selected is adequate to achieve the objectives of this study, since university students, when on the last year of their university education, must make a well-considered decision regarding their future, which is why an accurate picture of their intentions can be gained ([De la Rosa et al. 2014](#)).

3.2. Context of the Entrepreneurship Course

Having defined the sample, this section is devoted to the design of the entrepreneurship course taken by the students in the fourth year of the Labour Relations and Human Resources degree at the University of Castilla-La Mancha. The justification of this course is the need to provide students with the knowledge and skills to design and launch a business project, taking into account its feasibility, adaptation to market opportunities and its acceptability in terms of profitability, risk and ethical criteria.

As highlighted in the literature, educational institutions must design a learning process suited to the needs of students and the different industries ([Keat et al. 2011](#)). It is precisely the suitability of the learning process, that is, the teaching method, the teaching environment and the learning resources used, which will influence the students' entrepreneurial intention ([Harkema and Schout 2008](#)). For example, [Ollila and Middleton \(2011\)](#) consider that students should experience the creation of a new business to confront the difficulties and develop the entrepreneurial skills needed for the future. Since they are acting as entrepreneurs, they put themselves in a real situation, assuming its reality, which will allow them to grasp the difficulties and the possibilities of implementing it and, in short, to acquire the competencies related to entrepreneurship. Through this argument, the subject of entrepreneurship analysed in this paper is based mainly on the process of students creating a new business.

Table 1 shows the different learning methods used in this subject of Business Creation. As shown, the major weight and importance of the subject is the development of an assignment, with a total of 57 h (52 h to complete the work and 5 h for the oral presentation). This work consists of the fictitious creation of a new business by groups of three students. To carry this out, students receive a total of 12 h of theoretical classes and another 12 h of practical classes. First, the business plan, its stages and some recommendations are defined. Regarding the practical classes, success and failure cases are established, allowing students to make value judgments after evaluating the aspects they consider key in achieving their own success.

The first step in the project consists of the proposal of an innovative business idea with the aim of recognising commercial opportunities and developing innovative capacities. Subsequently, the students must conduct an analysis of the environment and the company, using the knowledge acquired in previous courses. Third, they must present a description of the product or service (needs satisfied, specifications and characteristics, differential values, registration of patents and brands), and a market analysis (demand and definition of the target customers). The following point lies in defining the marketing strategy (pricing policy, distribution channels, promotion strategy, brand image and positioning, sales planning, etc.). Next, they must consider the necessary infrastructures, as well

as the logistics system (facilities, manufacturing or service process, supply of materials, inventory management) needed to implement the project. Sixth, they should consider the organization of the company and the human resources policies (organization chart, employee profiles, human and operational resources policies, labour needs and growth estimation). Seventh, they must conduct and assess a financial analysis. Finally, they have to design an action plan to create the new business.

It should be noted that throughout this process, the advances of the students are monitored by professors specialized in entrepreneurship, by means of different tutorials with the intention of guiding the process and solving the doubts that may arise. In addition, in the different tutorials and classes, the professors try to demystify the difficulties in carrying out the business project, with the aim of improving students' entrepreneurial intention. As highlighted by [Robinson et al. \(1991\)](#), business attitudes can be influenced by educators.

There are similarities in the methodology and temporal structure in the academic years studied. However, there are also some differences in certain activities in the process. Thus, we introduced this control variable in the learning process and entrepreneurial intention to avoid bias.

Table 1. Activities of the entrepreneurship learning process (year 4; 4.5 ECTS credits; optional).

| Educational Activity | Method | Methodology | Related Competencies ² | Hours |
|----------------------------------|--------------|--------------------------------|--|-------|
| Classroom teaching (Theory) | Face-to-face | Lecture | G06, E07, E08, E09 | 12 |
| Classroom teaching (Practical) | Face-to-face | Case Studies | G01, G02, G06, E07, E08, E09 | 12 |
| Workshops or seminars | Face-to-face | Workgroups | G02, G03, E07, E08, E09 | 13 |
| Tutoring | Face-to-face | Directed or supervised work | G02, G03, E07, E08, E09 | 3 |
| Preparing reports or papers | Autonomous | Solving exercises and problems | G01, G02, G03, G04, G05, E07, E08, E09 | 52 |
| Presentation of papers or topics | Face-to-face | Mixed methods | G02, G04 | 5 |
| Study or test preparation | Autonomous | Self-study | G03, E07, E08, E09 | 15 |

By means of the learning process presented, we expect to achieve the following goals: To detect and evaluate entrepreneurial ideas oriented towards self-employment; to apply social research techniques to this professional field; to understand the implications of social responsibility and ethics in the decision-making process concerning a new business; to formulate and interpret the financial statements of a company; to search, analyse and summarise the information; and to present and defend a project. In sum, it can be said that, during this course, the acquisition of skills to identify and develop entrepreneurial thinking, and to launch and manage a new business, are encouraged, fulfilling the goal that every entrepreneurship course must satisfy ([Raposo and do Paço 2011](#)).

3.3. Measurement of Variables

The design of the questionnaire drew on a review of empirical studies, which allowed us to measure the variables analysed in different scales. In order to improve the validity of the content ([Hambrick 1981](#)), a pre-test with ten students was performed. A lengthy questionnaire was handed out, in which the students could indicate the degree of comprehensibility of the questions, as well as express their opinion as to whether the questions were appropriate for our proposed aims. Likewise, we also held discussions with academics and experts on the design of questionnaires in order that they might suggest possible criticisms and improvements. The study review, pre-test and in-depth discussions with academics and experts allowed us to draw up the final questionnaire.

We used a 5-point Likert scale to measure most of the variables. In some factors, we used dummy variables—job experience, gender and workshops and seminars—and continuous variables—age and university access grades. The variables measured are explained below and the correlations between the study variables are shown in [Table 2](#).

² The generic and specific competences are defined in the [Appendix A](#).

- Psychological variables: We used a total of 10 items to measure the psychological variables. We focused on measuring the following four psychological variables adapted from different scales: Achievement need (3 items) (McClelland et al. 1976), internal control (3 items) (Miller and Rose 1982), optimism (2 items) (Scheier et al. 1994) and autonomy (2 items) (Schwartz 1999).
- Biographical variables: We included the following biographical variables: Age, work experience, gender and university access grades.
- Learning process variables: In order to evaluate the learning process, we used three constructs: Information about the course guide (which included 5 items with information about clarity, understanding, language, content and usefulness of the information provided by the teacher in the course guide), student effort (2 items) and the educational process (which gathered 7 items providing information about materials, references, evaluation systems, planning of the subject, teaching methods and a general evaluation of the development of the subject). These scales are based on studies by Lau et al. (2008) and Román et al. (2008).
- Entrepreneurial intention: Entrepreneurial intention has been measured in different ways in the literature. One of the most widely used measures is the probability of creating a new business (Kolvereid and Moen 1997; Gutierrez and Santos 2008). Thus, in our questionnaire, as a measurement of entrepreneurial intention, we used the probability of creating one's own company in the future (1 item), measured from very unlikely (1) to very likely (5), based on an adaptation of the study by Kolvereid and Moen (1997).
- Control variables: Two control variables were used to avoid possible biases. As mentioned before, we used the academic year as a control variable since, when we obtained the questionnaires on the academic courses from 2012/2013 to 2017/2018, some activities in the learning process presented certain differences. Furthermore, the students' attendance at seminars and workshops refers to the realization of other complementary and additional courses with the objective of verifying whether the effects on entrepreneurial intention were maintained. This variable was measured following the work by Kolvereid and Moen (1997), who established attendance at other formal education activities in the field of business as a control variable for entrepreneurial education.

Table 2. Correlations among variables.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|-------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 1. Control | - | - | - | - | - | - | - | - | - | - | - | - | - |
| 2. Achievement need | 0.450 | - | - | - | - | - | - | - | - | - | - | - | - |
| 3. Autonomy | 0.260 | 0.299 | - | - | - | - | - | - | - | - | - | - | - |
| 4. Optimism | 0.375 | 0.349 | 0.219 | - | - | - | - | - | - | - | - | - | - |
| 5. Gender | 0.076 | 0.001 | -0.073 | -0.087 | - | - | - | - | - | - | - | - | - |
| 6. Age | 0.234 | 0.338 | 0.202 | 0.192 | -0.208 | - | - | - | - | - | - | - | - |
| 7. Access grades | 0.312 | 0.142 | -0.045 | 0.115 | 0.146 | 0.111 | - | - | - | - | - | - | - |
| 8. Experience | -0.121 | -0.293 | -0.227 | -0.140 | 0.142 | -0.311 | -0.052 | - | - | - | - | - | - |
| 9. Educational process | 0.186 | 0.196 | 0.145 | 0.360 | -0.059 | 0.187 | 0.049 | 0.035 | - | - | - | - | - |
| 10. Student effort | 0.301 | 0.236 | 0.085 | 0.167 | 0.068 | 0.163 | 0.141 | -0.053 | -0.065 | - | - | - | - |
| 11. Information | 0.227 | 0.264 | 0.169 | 0.152 | 0.061 | 0.092 | 0.185 | 0.008 | -0.123 | 0.433 | - | - | - |
| 12. Entrepreneurial intention | 0.363 | 0.345 | 0.138 | 0.208 | -0.088 | 0.105 | 0.056 | -0.007 | -0.018 | 0.370 | 0.234 | - | - |
| 13. Workshops and seminars | 0.004 | -0.119 | -0.104 | -0.126 | 0.123 | -0.321 | 0.038 | 0.008 | -0.123 | 0.433 | 0.225 | 0.357 | - |
| 14. School year | 0.045 | -0.080 | -0.059 | -0.130 | 0.016 | -0.137 | -0.005 | -0.001 | 0.065 | -0.333 | -0.086 | -0.139 | -0.096 |

3.4. Analysis Techniques

Structural equation analysis was used since it has certain advantages over traditional multivariate techniques (Haenlein and Kaplan 2004). Specifically, we used partial least squares (PLS) with PLS-graph software to analyse data. PLS is particularly suitable for data analysis during the early stages of theory development where the theoretical model and its measures are not definitively formed. The level of statistical significance of the coefficients of both the measurement and the structural models was determined through a bootstrap re-sampling procedure (500 subsamples). The measurement model shows that all variables have good individual reliability, composite reliability, convergent and discriminant validity. Table 3 shows the Cronbach's alpha values for all the variables, which were measured on Likert-type scales. As can be observed, all variables present a value above 0.7.

Table 3. Cronbach's alpha values for Likert-type scale variables.

| Control | 0.784 |
|---------------------|-------|
| Achievement need | 0.825 |
| Autonomy | 0.773 |
| Optimism | 0.875 |
| Educational process | 0.849 |
| Student effort | 0.867 |
| Information | 0.927 |

We evaluated the structural model by examining the size and significance of the path coefficients and the R^2 values of the dependent variables.

In the hypotheses, we proposed a mediating effect of the learning process on the relationship between psychological and biographical factors and entrepreneurial intention. To confirm this, the four conditions established by Baron and Kenny (1996) must be met. For this mediator effect, the first condition requires a significant influence of the independent variables—psychological and biographical characteristics—on the dependent variable—entrepreneurial intention. The second condition establishes a relationship between the independent variables and the mediator variable—learning process. The third condition requires a relationship between the mediator variable—learning process—and the dependent variable—entrepreneurial intention. The fourth condition establishes that the relationship between the independent variables and the dependent variable should be eliminated—or at least reduced—when the mediator variables are included in the model.

As mentioned above, the aim of the study was to explore the mediating role of the learning process to explain the relationships between several psychological and biographical characteristics and entrepreneurial intention. Therefore, we include all psychological, biographical, learning process and outcome variables in the PLS graph. Subsequently, we analyse the effect of independent variables on the mediator variables and on entrepreneurial intention through the specific learning process variables.

4. Results

The structural model was evaluated by examining the size and significance of the path coefficients and the R^2 values of the dependent variable (Table 4).

Table 4. Results.

| Constructs | | Learning Process | | | Entrepreneurial Intention ¹ |
|-----------------------|--------------------------------|------------------|---------------------|----------------|--|
| | | Information | Educational Process | Student Effort | |
| Psychological factors | Achievement need | 0.151 * | 0.191 * | 0.145 * | 0.191 ** (0.268 ***) |
| | Internal control | 0.081 | 0.050 | 0.175 * | 0.246 ** (0.284 ***) |
| | Optimism | 0.035 | 0.085 | 0.033 | 0.016 (0.013) |
| | Autonomy | 0.043 | 0.132 + | 0.023 | −0.057 (0.002) |
| Biographical factors | Age | −0.035 | 0.007 | 0.075 | −0.06 (−0.055 +) |
| | Work experience | −0.065 | 0.029 | 0.015 | 0.095 (0.096 +) |
| | Gender | 0.034 | −0.024 | 0.070 | −0.129 * (−0.124 *) |
| | University access grades | 0.146 * | −0.054 | 0.038 | −0.052 (−0.048) |
| Control | Academic year | −0.086 | −0.304 *** | −0.042 | −0.001 ^{ns} (−0.114 *) |
| | Workshops and seminars | 0.013 | 0.030 | −0.016 | −0.007 ^{ns} (0.010) |
| | R² | 0.106 | 0.213 | 0.124 | 0.220 |
| Learning Process | Information | | | | 0.145 * |
| | Student effort | | | | 0.017 |
| | Educational process | | | | 0.328 *** |
| | Total R² | | | | 0.361 |
| | Change in R² | | | | 0.141 *** |

+ $p > 0.1$; * $p > 0.05$; ** $p > 0.01$; *** $p > 0.001$; ^{ns} non-significant; ¹ the values in parentheses represent β without the mediator variable.

The initial results, when only the effect of biographical and psychological factors are taken into account (without the mediator variables), show that only two psychological variables influence the students' entrepreneurial orientation. Achievement need has a positive and significant effect on entrepreneurial intention ($\beta = 0.268$; $p < 0.001$), and internal control also has a positive influence on entrepreneurial intention ($\beta = 0.284$; $p < 0.001$). Both effects are similar in significance. With respect to biographical variables, three variables have a negative and significant effect on entrepreneurial intention: Age ($\beta = -0.055$; $p < 0.1$), work experience ($\beta = -0.096$; $p < 0.1$) and gender ($\beta = -0.124$; $p < 0.05$). In this case, the effect of gender is higher than that of the other two biographical variables. These results suggest that students with higher achievement need and internal control have greater entrepreneurial intention. Furthermore, younger students, students with more work experience and male students have greater entrepreneurial intention. The R^2 of this model is 0.220. These results allow us to accept Hypotheses 1 and 2.

With the mediator variable, the learning process, included in the model, it can be observed that student information ($\beta = 0.145$; $p < 0.05$) and, primarily, the educational process ($\beta = 0.328$; $p < 0.001$) have a significant and positive effect on entrepreneurial intention. The R^2 result of this model is 0.361. In this line, it can be observed that this model improves the previous one because the addition of the learning process significantly increases the R^2 (from 0.222 to 0.361), with an increment of 0.141 in significance at $p < 0.001$. Thus, it can be said that the learning process is an important mechanism to explain entrepreneurial orientation.

Analysing the mediating role of the learning process variables, only achievement need affects the three components of the learning process. Furthermore, as previously stated, the learning process influences entrepreneurial intention. Finally, it can be observed in Table 4 that when we consider the

dependent, independent and mediator variables in the same model, the initial effect of achievement need on entrepreneurial intention is reduced (specifically information and the educational process) through the learning process. Thus, these results show a partial mediating effect between achievement need and entrepreneurial intention through two variables of the learning process—information and educational process. Thus, the detection of a partial mediator effect of the psychological factors on entrepreneurial intention, such as achievement need, allows us to partially accept Hypothesis 3.

Finally, we can observe that biographical factors have no effect on the learning process. Our results show no mediating effect of the biographical variables on entrepreneurial intention through the learning process. Therefore, Hypothesis 4 cannot be accepted.

Table 5 shows the principal significant effects.

Table 5. Direct, indirect and total effects on entrepreneurial intention.

| | Direct | Indirect | Total |
|--|--------|----------|--------|
| Internal control | 0.246 | – | 0.246 |
| Gender | –0.129 | — | –0.129 |
| Information | 0.145 | | 0.145 |
| Educational process | 0.328 | | 0.328 |
| Achievement need through educational process | 0.191 | 0.063 | 0.254 |
| Achievement through information | 0.151 | 0.022 | 0.173 |

5. Discussion

Achievement need is a key psychological characteristic in explaining entrepreneurial intention. The students with higher achievement need are those who improve their entrepreneurial intention. However, the potential of students with achievement need to obtain high entrepreneurial intention will only be realized if they follow a suitable learning process. Internal control also determines the improvement of entrepreneurial intention. Autonomy is not a key psychological characteristic in improving students' entrepreneurial intention. Thus, we find that the learning process represents an interceding factor, which is able to bridge the gaps between the psychological factors and entrepreneurial intention. Therefore, the results obtained with respect to the influence of achievement need and internal control on entrepreneurial intention are in agreement with the proposed hypotheses. These factors have been highlighted in the entrepreneurship literature due to their strong relationship with entrepreneurial motivation when confronting the uncertainty of the business creation process (Barba-Sánchez and Atienza-Sahuquillo 2018). In contrast, the results concerning autonomy and optimism are not in agreement with the hypothesis, since the influence of these psychological factors is mainly manifested through work experience, which most students lack, and they could thus focus on other professional orientations.

Certain biographical factors, such as age, work experience and gender, have a significant direct effect on entrepreneurial intention. Specifically, it is observed that younger people with previous work experience and men have greater entrepreneurial intention, coinciding with other studies. However, no empirical evidence was found regarding university access grades, which may lead to other professional orientations. Likewise, we can observe that the learning process does not mediate between the biographical characteristics of individuals and their entrepreneurial intention.

6. Conclusions and Implications

The results provide important theoretical and practical contributions for the study of the background to entrepreneurial intention. First, following the previous literature (De Pillis and Reardon 2007; Kautonen and Palmroos 2010), this study offers a better understanding of determinants of entrepreneurial intention, helping to fill this gap in the literature. Second, another theoretical contribution is that we provide new evidence about one of the key predictors of entrepreneurship, namely entrepreneurial intention (Kautonen et al. 2015). In this sense, an integrated approach to an

in-depth understanding of the key role of the learning process is proposed in order to help explain how to improve students' entrepreneurial intention. Third, an empirical contribution to the role of the learning process is shown, taking into account the relationship between student characteristics and entrepreneurial intention. Fourth, in line with the previous literature, our results support the role of the learning process (Hailikari and Parpala 2014). Thus, we have found that the effect of students' characteristics—mainly psychological aspects—on their entrepreneurial intention depends on the extent to which students are able to leverage their personal capabilities to develop an effective learning process.

Among the practical implications, the results of the study can provide recommendations for students, teachers and academic institutions. Students can learn how to take advantage of their psychological capabilities together with academic and work experience in order to adopt the most suitable learning process to improve their entrepreneurial intention. In sum, students should develop a learning process in effective entrepreneurship.

In addition, teachers will find evidence that will help them adapt the learning process to the specific psychological and biographical characteristics of each student, so as to improve their skills and so develop better entrepreneurial intention. In this sense, according to Barba-Sánchez and Atienza-Sahuquillo (2018), it would be advisable for teachers to develop idea-generation workshops or inter-university business-plan competitions to promote entrepreneurial skills and link them with the learning process. These results can also have implications for academic managers and academic authorities. In this sense, academic authorities should develop programs with a view to promoting more effective learning processes. Thus, they would promote entrepreneurial intention, and as a consequence, they would be able to contribute to economic growth and employment generation in their community.

7. Limitations and Future Lines of Research

This work is not exempt from limitations. Our research has focused on certain psychological traits (achievement need, internal control, optimism and autonomy) and biographical characteristics (age, work experience, gender and university access grades) of the students under study to analyse their influence on entrepreneurial intention. However, the wide range of exogenous environmental factors (political, economic, demographic and technological) that may influence entrepreneurial intention have not been taken into account. As Fatoki (2010) established, personality and biographical traits are linked to contextual ones. This limitation is useful to propose, as a line of future research, the incorporation of an integrated model that includes internal and exogenous factors to improve the understanding of the antecedents of entrepreneurial intention. On the other hand, entrepreneurial intention represents the best predictor of a person's commitment to becoming an entrepreneur in the future (Kautonen et al. 2015). However, intention is a necessary aspect, but not sufficient alone to becoming an entrepreneur. This is why some authors (e.g., Roth and Lacoa 2009) have recommended a longitudinal study to verify how many students with entrepreneurial intention really create a new business. Similarly, few studies have addressed the evolution of entrepreneurial intention before and after completing an entrepreneurship course, so it is recommended to analyse these results at the beginning and the end of the entrepreneurial learning process, as already stated by Azanza and Campos (2014). Furthermore, we propose to include other students' characteristics, such as the jobs and entrepreneurial experience of parents, other family members or friends, courses passed, external control locus, empathy, emotional intelligence, among other things, in a binary logistic model of entrepreneurial intention.

Another limitation is that the study only shows a partial model to explain entrepreneurial intention. In this sense, a new proposal for the development of future research is to expand the information on both the mediating and moderating roles of the learning process to help explain entrepreneurial intention. Another proposal might be the analysis of how students' characteristics and the learning process affect other professional orientations. Finally, our sample only consisted of students from one Spanish university, and thus the results obtained might vary in other countries,

or even according to the degree course in which the entrepreneurship course is delivered. Therefore, we propose to replicate this study in other countries and degrees in order to compare and contrast the results, while increasing the understanding of the antecedents of entrepreneurial intention.

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Appendix A

General Competencies:

| | |
|------|---|
| G01: | Ability to search, analyse and summarise information to build arguments and make judgments in the different areas of performance. |
| G02: | Ability to present and defend orally and/or in writing matters or issues related to their specialty. |
| G03: | Capacity for continuous, self-directed and autonomous learning, allowing students to develop learning skills necessary to undertake further study with a high degree of autonomy. |
| G04: | Ability to adequately use ICT in the different areas of performance. |
| G05: | Ability to understand general information in a foreign language, employing frequently used expressions. |
| G06: | Ability to develop professional activities in accordance with ethical principles and respect for fundamental rights. |

Specific Competencies:

| | |
|------|--|
| E06: | Knowledge of the theories and fundamentals of business organization and business management from structural and behavioural perspectives, to ensure effective and efficient operation, paying attention to the human aspects of organizations. |
| E07: | Ability to fully understand the behavioural approaches of people the organization, management of work and human resource management |
| E08: | Capacity for analysis and diagnosis, support and decision-making regarding organizational structure, work organization, working method studies and working time studies. |
| E09: | Ability to participate in the development and design of human resources strategies, integrating people into the organization's overall strategy. |
| E10: | Ability to apply management techniques and motivational groups to improve the working environment. |

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