

Barrientos-Báez, A., Martínez-González, J.A., García-Rodríguez, F.J., & Gómez-Galán, J. (2022). Entrepreneurial competence perceived by university students: Quantitative and descriptive analysis. *Journal of International Studies*, 15(2), 40-49. doi:10.14254/2071-8330.2022/15-2/3

Journal
of International
Studies

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of International
Studies, 2022
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Scientific Papers

Entrepreneurial competence perceived by university students: Quantitative and descriptive analysis

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Abstract. According to the scientific literature, the entrepreneur is the key to entrepreneurship, which is an essential process for the economic and social development of a country. Within the framework of the psychological traits or attributes of the entrepreneur, entrepreneurial skills and vocation, which are the prelude to entrepreneurial intention and behaviour, are currently necessary – considering that young people will form the next generation of entrepreneurs and that higher education plays a fundamental role in entrepreneurship. This paper's main objective is to analyse university students' perceptions about their competence and vocation for entrepreneurship in this context. The research has

Received:

August, 2021

1st Revision:

March, 2022

Accepted:

May, 2022

DOI:

10.14254/2071-
8330.2022/15-2/3

been carried out in a sample of Spanish university students (N=380) using a quantitative, descriptive, and discriminant methodology. The obtained results allow us to conclude that young people view entrepreneurship competencies positively and have a vocation for entrepreneurship but do not consider themselves competent or self-efficient. Further, specific and significant gender differences have been identified in young people's perceptions, in line with other authors' conclusions and with the GEM reports. All these findings, which make up novel contributions, are of great use in promoting entrepreneurship in university.

Keywords: entrepreneurship, higher education, educational innovation.

JEL Classification: L26, L10, A20, I20

1. INTRODUCTION

Entrepreneurship is a dynamic process of vision and change. In the human capital approach, the entrepreneur becomes the missing link, the key to the success of creating a new company (Audretsch & Keilbach, 2004a, 2004b; Volery et al., 2015). This approach proposes that to manage such a process successfully, the entrepreneur must possess a specific profile (Schumpeter, 1934; Lupiáñez et al., 2014; Suárez-Álvarez & Pedrosa, 2016). Among the entrepreneurial traits that most stand out in the literature are psychological traits, motivations, experiences, skills, and behaviours (Timmons, 1999; Pérez-Sánchez et al., 2021). However, at present, the focus on competencies and vocation predominates in the study of entrepreneurship, aspects on which more research is needed (Wagener et al., 2010; Kuratko, 2014). Interest in the analysis of competencies derives from their causal relationship with entrepreneurial intention and entrepreneurial achievement (Shook et al., 2003; Hayton & Kelley, 2006). On the other hand, competencies can be developed through experience and education (Rodríguez & Prieto, 2009; Marina, 2010).

The entrepreneurial competencies approach replaces the study of personality traits and follows prior work on competencies developed in entrepreneurship (Brinckmann & Kim, 2015). Entrepreneurship competencies are defined as a "set" composed of values, knowledge, motivations, traits, attitudes, and skills necessary to successfully create an enterprise (Kyndt & Baert, 2015; Volery et al., 2015). Authors have also made efforts to identify and classify entrepreneurship competencies, and most authors present categories of competencies valid for all sectors (Cabana et al., 2013). Some authors have classified competencies according to the entrepreneur's project stage, i.e., analysis of the environment, planning, search for resources, start-up, and follow-up (Hayton & Kelley, 2006; Alda, 2010). In this context, therefore, establishing the attitudes, ideas, and perceptions of young university students concerning the business world can be fundamental for establishing training strategies and practices. In addition, it would also be essential to determine whether they change depending on age, gender, etc. The aim of this research is to obtain knowledge in precisely this regard.

2. LITERATURE REVIEW

The interest in studying entrepreneurship among young people and considering age and gender differences is clear in the GEM reports and the literature (Sánchez, 2012). According to the GEM reports, the average generation of entrepreneurs has decreased by around one year on average each year, with more young people deciding to start a business. In this sense, some authors argue that the generation born in this century is the most entrepreneurial in history (Muntean & Nistor, 2011; Sánchez, 2011; Sánchez, 2012). With gender differences, it is found that entrepreneurs are at least 10% more than women, although the

difference narrows from year to year, as evidenced in GEM reports (Kozubíková et al., 2016; Nassif et al., 2016). Among the reasons for such differences, socio-cultural aspects and attitudes stand out and women's perceptions of their entrepreneurial competencies (Maes et al., 2014; Zhang et al., 2014). Regarding this point, Barrientos-Báez et al. (2019) argue that changes in the environment were valued, such as the agreements on higher education policy in Europe and the boost that the European Union intended to give to research in all its member countries. One novelty pointed out is the introduction of specific programs on gender equality, help to victims of terrorism, and the promotion of active policies to guarantee equal opportunities for people with disabilities (BOE, 2007).

Also, there is a high level of interest in entrepreneurship literature in delving into two relevant issues. First, the interest in knowing and enhancing the link between education and entrepreneurship is because education plays a critical role in the development of entrepreneurial competence, particularly university education within the framework of the European Higher Education Area (EHEA) (Ripollés, 2011; Jiménez et al., 2012). Additionally, it should be considered that graduates are more likely to start new businesses than non-graduates, employ more people, and make more significant investments in their companies than non-academic entrepreneurs (Von Graevenitz et al., 2010). The second issue is related to the growing interest in knowing subjects' perceptions of entrepreneurship, which is due to two reasons. First, perceptions underpin the GEM reports. Second, in the academic context it has been shown that positive perceptions of students regarding the competencies they must learn favourably influence the results of the educational process (Herrero et al., 1999; Yara, 2009; Miranda & Gómez Galán, 2017; Veytia et al., 2019; González-Zamar et al., 2020).

The university adapts to the changes produced in society (Khan et al., 2020; Ehlers, 2020) and therefore introduces improvements for the optimal development of the activities proposed within the classroom (López-Meneses et al., 2021). The aim is to enrich learning processes and rethink how students can gain knowledge essential for their professional careers (Barrientos-Báez, 2016; Miranda et al., 2016; Concepción et al., 2019). All this in educational innovation, fundamental today in the digital society in which we live (López-Meneses et al., 2017; Gómez Galán, 2020; Feruza, 2020; Gómez-Galán et al., 2021). In short, that demands an adaptation of Higher Education to a new social reality (Ponce et al., 2018; Abad-Segura et al., 2020).

3. METHODOLOGY

Given the above, this study has two primary objectives. The first is to determine the ideas and perceptions of young university students concerning certain entrepreneurial variables considered essential because they influence entrepreneurial intention and behaviour. Second, to determine whether there are significant gender differences in these ideas and perceptions. Fulfillment of these objectives will make it possible to improve the teaching and learning processes in Higher Education and to implement innovative ideas to advance in this process.

Regarding the first objective, the 1st hypothesis (H1) states: young people possess attitudes, ideas, and perceptions favourable to entrepreneurship. With the second objective, the second hypothesis (H2) states: There are significant gender differences in young people's attitudes, ideas, and perceptions about entrepreneurship.

To achieve the objectives and test the hypotheses, a descriptive and discriminant quantitative methodological approach was carried out using the SPSS-22 program.) The research was carried out in 2019 using a sample composed of almost 400 young university students. The sample was purposively selected to consist of students from the four years of business-related degrees. In these degrees, it is more workable to foster entrepreneurial skills and vocation to carry out programs and actions. The questionnaire was applied

to the subjects in the classroom when the days and times had been previously chosen randomly. Table 1 shows the sample data (N=380). Initially, the sample included 391 subjects, but students who gave the same score to all items, or those who left things blank, were excluded. The sample size meets the minimum requirements: at least ten times the number of variables observed (Nunnally, 1978, p. 276). The age of the subjects in the sample was between 18 and 22 years old in 98%. On the other hand, this work's generational nature clarifies that the sample used represents the segment of young people (millennials), who share similar values, preferences, and behaviours (Bruwer et al., 2011, Martínez, 2014).

Table 1

Sample Description

Gender/Course	1°	2°	3°	4°	Total	%
Men	46	42	38	32	158	41,58%
Women	63	60	51	48	222	58,42%
Total	109	102	89	80	380	100%

Source: own evaluation

An ad hoc designed questionnaire was used, as is usual in studies of this type (Morris et al., 2013). First, a group of experts and students analyzed the literature to identify a broad set of entrepreneurial competencies, thus ensuring content validity (Roy et al., 2001). According to Morris et al. (2013), the Delphi technique was then used with two groups and two rounds to build the fundamental relationship of entrepreneurial competencies. Finally, a questionnaire measured the competencies and other relevant aspects using a reduced number of items to reduce the costs and methodological problems associated with using numerous indicators (Bergkvist & Rossiter, 2007). After a pretest and considering the requirements of simplicity and fairness, an initial Likert-type scale of 34 items was got, with five response alternatives (1: not at all or not at all agree, 5: strongly agree). After exploratory factor analysis, four items were eliminated, resulting in a final scale composed of 14 factors or latent variables and 30 items (see Table 2). A dichotomous control item related to gender was included. The dimensions or factors are: V: Values and attitude towards entrepreneurship; E: Work and entrepreneurial experience; I: Importance of entrepreneurship; F: Relevance of young and trained entrepreneurs; A: Analyse the environment and plan the project; C: Reflection and creativity; R: Relationships and communication; I: Regulation in the face of uncertainty; B: Seek resources and support with flexibility; N: Negotiate with tenacity; O: Action to identify and take advantage of opportunities; D: Deciding, problem-solving, generating ideas and evaluating alternatives; L: Leadership, cooperation, and teamwork; M: Vocation and perceived competence for entrepreneurship. The items and dimensions in italics in Table 2 correspond to entrepreneurial competencies, strictly. M1 is the item related to vocation. "V" refers to values related to entrepreneurship. "E" refers to the importance given by young people to experience. "I" and "F" refer to young people's ideas about entrepreneurship and the role of young people as future entrepreneurs. M2 is an item associated with self-efficacy.

Table 2

Variables

Latent Variable	Items
V	V1: Entrepreneurship is a value in itself.
	V2: One must have a positive attitude towards entrepreneurship.
E	E1: The entrepreneur must have previous experience as an entrepreneur
	E2: Entrepreneur must have previous work experience
I	I1: Socio-economic progress depends on entrepreneurship
	I2: Entrepreneurship is the most important thing in entrepreneurship
F	F1: Young people must assume that they will be the future entrepreneurs
	F2: Young entrepreneurs need to be technically prepared
A	A1: For entrepreneurship, it is essential to analyse the environment
	A2: To be an entrepreneur, it is essential to plan the business project.
C	C1: The entrepreneur must use reflection and logic.
	C2: The entrepreneur must be creative
R	R1: The entrepreneur must have empathy
	R2: To be an entrepreneur, it is necessary to communicate adequately
	R3: To be an entrepreneur, you must build and manage relationships
G	G1: The entrepreneur must manage uncertainty
	G2: The entrepreneur must be self-controlled and self-regulating
B	B1: The entrepreneur must be flexible and adaptable according to needs
	B2: The entrepreneur must seek resources and support
N	N1: Entrepreneurship requires negotiation
	N2: The entrepreneur must be persistent and tenacious to become an entrepreneur.
O	O1: The entrepreneur must take advantage of opportunities
	O2: The entrepreneur must be action-oriented and start the activity
D	D1: Entrepreneurship involves generating and evaluating alternatives and new ideas
	D2: Entrepreneurship involves identifying, preventing, and solving problems
	D3: Entrepreneurship involves making decisions
L	L1: The entrepreneur must manage the project cooperatively
	L2: Entrepreneurship requires leading people and teams.
M	M1: I would like to be an entrepreneur
	M2: I am already trained and competent to be an entrepreneur

Source: own evaluation

4. EMPIRICAL RESULTS AND DISCUSSION

To test hypothesis 1 (H1), a descriptive analysis was carried out. The data in Table 3 show that the levels of all the variables are medium/high since none of the items got scores lower than 50% of the maximum possible value ($380 \times 5 = 1.900$) if all the subjects ($N=380$) had rated the different items with the maximum score (5). Over 83% of the items obtained more than 75% of the maximum possible score ($380 \times 5 = 1.900$). Most of the items were not given the minimum score (1) by any student, almost all of them getting a minimum score of 2. Particularly item D3 ("Entrepreneurship implies making decisions") did not get any score lower than 3. The items with the highest scores were item O1 ("The entrepreneur should take advantage of opportunities in the environment": 91.16%), item A2 ("For entrepreneurship, it is important to plan the business project": 89.68%), and item D3 ("Entrepreneurship involves making decisions": 89.05%). On the other hand, minor valued items were item M2 ("I am already qualified and competent to

be an entrepreneur": 50.11%), item E2 ("The entrepreneur must have previous work experience": 60.21%), and item F1 ("Young people must assume that they will be the future entrepreneurs": 65.05%). However, these last two items got scores above 60%. Therefore, hypothesis 1 (H1) is confirmed since the student's value entrepreneurship competencies with high levels. However, the young people affirm they would like to be entrepreneurs (M1: 81.26%). They consider they are not yet fully trained or competent to be entrepreneurs.

Table 3

Basic descriptive statistics

Latent Variable	Items	Mín.	Max.	Sum	%	Average	DT
V	V1	2	5	1.480	77,89%	3,89	0,91
	V2	2	5	1.652	86,95%	4,35	0,69
E	E1	1	5	1.244	65,47%	3,27	1,09
	E2	1	5	1.144	60,21%	3,01	1,18
I	I1	2	5	1.520	80,00%	4,00	0,85
	I2	2	5	1.412	74,32%	3,72	0,84
F	F1	1	5	1.236	65,05%	3,25	1,11
	F2	2	5	1.576	82,95%	4,15	0,81
A	A1	1	5	1.436	75,58%	3,78	0,93
	A2	2	5	1.704	89,68%	4,48	0,66
C	C1	2	5	1.544	81,26%	4,06	0,81
	C2	2	5	1.612	84,84%	4,24	0,81
R	R1	2	5	1.524	80,21%	4,01	0,88
	R2	2	5	1.668	88,84%	4,39	0,72
	R3	2	5	1.588	83,58%	4,18	0,75
G	G1	2	5	1.336	70,32%	3,52	0,88
	G2	2	5	1.528	80,42%	4,02	0,81
B	B1	2	5	1.444	76,00%	3,80	0,72
	B2	2	5	1.540	81,05%	4,05	0,75
N	N1	2	5	1.492	78,53%	3,93	0,80
	N2	2	5	1.612	84,84%	4,24	0,75
O	O1	2	5	1.732	91,16%	4,56	0,65
	O2	2	5	1.488	78,32%	3,92	0,78
D	D1	2	5	1.684	88,63%	4,43	0,72
	D2	2	5	1.576	82,95%	4,15	0,73
	D3	3	5	1.692	89,05%	4,45	0,66
L	L1	2	5	1.648	86,74%	4,34	0,79
	L2	2	5	1.676	88,21%	4,41	0,73
M	M1	2	5	1.544	81,26%	4,06	0,93
	M2	1	5	952	50,11%	2,51	0,94

Source: own evaluation

To contrast hypothesis 2 (H2) regarding gender differences in the perceptions of young people (direct responses to the items), a discriminant analysis was performed, a method that facilitates the identification of significant differences in the reactions of the groups according to the desired criteria, in this case by gender (Redondo & Rodriguez, 2014). According to the data in Table 4, the self-value and the canonical correlation exceed the mean value (0.500), and the Lambda indicator is far from one (with a high significance $P \leq 0.005$).

Table 4

Discriminant Analysis: Basic Indicators

Autovalor	Canonical correlation	Wilks Lambda	Sig.
0,669	0,633	0,599	0,000

Source: own evaluation

The data in Table 5 show the standardized coefficients. All of them have reached high significance ($P \leq 0.005$). As Table 5 shows, men (negative scores) give more value than women to items F1 ("Young people should assume that they will be the future entrepreneurs"), B2 ("The entrepreneur should seek resources and support"), O1 ("The entrepreneur should take advantage of the opportunities in the environment") and L1 ("The entrepreneur should manage the project by cooperating with others"). Women value more highly items V1 ("Entrepreneurship is a value in itself"), E1 ("The entrepreneur must have previous experience as an entrepreneur"), A1 ("To be an entrepreneur, it is important to analyse the environment"), R2 ("To be an entrepreneur you must communicate adequately") and, to a lesser extent, items D2 ("Entrepreneurship involves identifying, preventing and solving problems") and D3 ("Entrepreneurship involves making decisions"). As seen, men give more importance to action and women to values and security. To a lesser extent, men seem to be more motivated to undertake than women (M1), although women feel more competent, in the latter case with reduced significance (M2). Therefore, hypothesis 2 (H2) is confirmed since there are gender differences in young people's ideas and perceptions regarding entrepreneurship and entrepreneurial competencies.

Table 5

Discriminant Analysis: Standardized Coefficients

Latent Variable	Items	CE	Latent Variable	Items	CE
V	V1	0,343	G	G1	-0,041
	V2	-0,179		G2	0,036
E	E1	0,633	B	B1	0,002
	E2	-0,012		B2	-0,349
I	I1	0,007	N	N1	0,226
	I2	-0,132		N2	0,017
F	F1	-0,424	O	O1	-0,655
	F2	-0,037		O2	0,218
A	A1	0,334	D	D1	0,225
	A2	-0,099		D2	0,328
C	C1	0,084		D3	0,301
	C2	0,176	L	L1	-0,516
R	R1	0,039		L2	0,000
	R2	0,780	M	M1	-0,236
	R3	-0,049		M2	0,160

Source: own evaluation.

5. CONCLUSION

This research responds to the concerns and suggestions found in the literature and institutional reports regarding the need to clarify certain essential aspects related to entrepreneurship. We have taken as premises the social and economic relevance of entrepreneurship as a process, the importance of the entrepreneur and his or her entrepreneurial skills, and the inevitable generational relay that young people must carry out as

entrepreneurs. We have also considered the existing gender differences in the entrepreneurial context and the importance of education in promoting entrepreneurship and entrepreneurs. Integrating all these aspects and realities is one contribution of this work.

It has been found that the segment studied values entrepreneurial skills positively, as proposed in the GEM reports and the literature regarding the decrease in the average age of the entrepreneur and the acceptance of entrepreneurship by young people (Sánchez, 2012). However, although the segment has a vocation for entrepreneurship, they do not feel as qualified for it, possibly because they are immersed in the educational process and lack previous work and entrepreneurial experiences, which they value and are determinants for their vocation perceived competence. In general, there is a pleasant disposition by the studied segment towards entrepreneurship and concerning their role as future entrepreneurs, which favours its approach in the university educational context, focused on developing competencies. Entrepreneurship makes up a transversal competence in education and specific competence in many undergraduate degrees. More specifically, young people have a favourable attitude towards entrepreneurship, which they value and for its socio-economic importance, and give foremost priority to the skills traditionally studied to create a company.

About gender differences, it has been found that there are indeed differences in competency ratings (item responses), which is in line with the GEM reports and the literature (Joensuu et al., 2013; Bae et al., 2014). That men place more importance on action than women and that women value security and values more than men seems to confirm the influence of stereotypes and gender role orientation on entrepreneurship, and social and cultural influences (Langowitz & Minniti, 2007; Mueller & Conway Datoon, 2008, 2011). It is also confirmed that men are more motivated for entrepreneurship and that women consider themselves somewhat more competent to start a business (Sanchez and Fuentes, 2013). Education in general and Higher Education have an essential mission aimed at diminishing and, as far as possible, eliminating the existing gender differences in entrepreneurship in the segment studied. Following Barrientos-Báez (2018), the university professor facilitates techniques and tools, and the students and their experiences facilitate everyday learning.

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