

# **Entrepreneurial Competencies for Business Success**

**Martha Lucia Pachón-Palacios**

Associate Professor of the Faculty of Administration, Finance and Economic Sciences, of the EAN University, Bogotá, Colombia  
ORCID: <https://orcid.org/0000-0003-4170-1068>

**J. Divitt Ed. Velosa-Garcia**

Associate Professor. Production Engineering Program, Faculty of Engineering, of the EAN University, Bogotá, Colombia  
ORCID: <https://orcid.org/0000-0002-8265-9532>  
[mlpachon@universidadean.edu.co](mailto:mlpachon@universidadean.edu.co), [jvelosa@universidadean.edu.co](mailto:jvelosa@universidadean.edu.co)

## **Abstract**

The objective of this article is to examine the structure of the formation of entrepreneurial competencies required by university students to support the needs of Colombian SMEs in achieving competitive advantages, from the perspectives of academia and the business sector. To this end, experts in teaching, consulting, and human resources management were consulted to give their rating of 27 competencies. This study used a cross-sectional survey research design, with primary data sources collected through a structured questionnaire specific to the university context. A survey tool was designed to investigate and define the most relevant entrepreneurial competencies between the two analysis groups. The study revealed a group of entrepreneurial competencies that, if properly trained, can lead to the construction of competitive advantages in the company, according to the group of experts consulted. In addition, the study concluded that certain specific skill groups (personal and operational training in the company) are more effective in business training. Finally, learning should seek expertise and joint and synergistic activities to improve training and pedagogical processes in relation to these two approaches. Therefore, the results suggest that university institutions should focus on developing specific entrepreneurial competencies and pedagogical methodologies in university students to facilitate the promotion of entrepreneurship, considering student conditions and the business context.

## **Keywords**

Entrepreneurial skills, education for entrepreneurship, successful companies

## **1. Introduction**

As the world moves into the era of globalization and digitalization, entrepreneurial skills from being desirable virtues have become important characteristics for strategy planning within organizations. The ability to identify opportunities, manage risks, and foster creativity are examples of competencies used as drivers of business growth. In the same way, effective leadership, informed decision-making, and orientation to quality results with quality, among others, are competencies that converge to cultivate the path towards competitiveness and excellence in the company. These constant changes that companies face imply that achieving success requires the skills, knowledge, and attitudes of individuals in their contributions.

The sum of entrepreneurial and business skills makes it easier for the idea, initiative, and spirit of entrepreneurship to be transformed into authentic companies and projects that generate value. Different authors affirm that the study of entrepreneurship has an important component for its improvement and that is the study of the development of individual competencies (Batista-Canino et al. 2024). This approach has been proposed by several education researchers (Ferrerias-Garcia et al. 2021; Reis et al. 2021; Tittel and Terzidis 2020). The aim is to move from an entrepreneurial intention to an entrepreneurial behavior supported by the development of business skills (Batista-

Canino et al. 2024), with the aim of turning entrepreneurial initiatives into real companies, crossing the barrier of 3 and 5 years.

In their research, Zdolšek and Širec (2018) They have validated the need to possess entrepreneurial skills both for the initiation and for the development of a company. Therefore, they argue that entrepreneurial processes must consider both the competencies necessary to establish a company and those essential for its growth, sustainability, and durability over time. Kyndt and Baert (2015) They support this perspective by stating that entrepreneurship skills should be an integral part of the education offered by higher education institutions. In the research carried out by Batista-Canino et al. (2024), which focused on the evolution of studies on entrepreneurial intention from 1970 to 2021, it is highlighted that entrepreneurship competencies emerged as one of the essential topics from 2001 onwards. In addition, since 2011, there has been a broadening of the focus to include the issue of education as a crucial pillar for developing entrepreneurship.

### **1.1 Objectives**

One of the important elements in the study of business skills training is to analyze the difference between the competencies evidenced by companies and the educational area. Possibly, these differences, although not substantial, can make difference between what we teach and what employers really expect from graduates of a university training program.

For this reason, and to begin a more in-depth analysis, the research has focused on discriminating the perceptions of these two groups of approaches (entrepreneurs and teachers). It is hoped that determining these differences can serve as a starting point for a more in-depth study of entrepreneurial skills training in university students.

## **2. Literature Review**

In the literature, research has been conducted with the aim of identifying the traits, qualities, components, or knowledge necessary for an entrepreneur to make his or her business project last, be successful, profitable, and become a sustainable company over time (Cingula 2013; Hsu et al. 2011; Mitchelmore and Rowley 2010; Ng and Kee 2017; Postula and Majczyk 2018; Santos et al. 2014; Tehseen et al. 2019). In recent years, these characteristics have become more relevant due to the evidence found by the authors, in relation to the fact that entrepreneurial skills in individuals contribute to economic, social, and business growth (Reis et al. 2021; Rosenow-Gerhard 2020) and, in addition, to the argument that such competencies are possible to form (Peschl et al. 2021; Silveyra et al. 2021).

Business competencies play a critical role in assessing business performance (Khan et al. 2021). According to Reis et al. (2021, p. 180), these competencies are considered crucial assets to face and overcome the current COVID-19 situation. This impact is not only limited to urban environments with formal education but also extends to rural communities that receive entrepreneurial training. A clear example of this is reflected in the research carried out by Sutisna et al. (2021) in a region of Indonesia and Ataei et al. (2020) in Iran.

Several authors have studied the effects and impact of entrepreneurial skills on competitiveness and business performance (Man et al., 2002; Mitchelmore and Rowley 2010), due to the importance of innovation and adaptability that organizations must have. They concluded that the development of these competencies in entrepreneurs increases the probability of achieving business success and the durability of companies. "Entrepreneurial skills can be used as sources of competitiveness because they are not easily duplicated by competitors" (Hwang et al. 2020, p. 1).

### **2.1 Competencies**

Competencies are critical in academics; they play a crucial role in bridging the gap between education and job performance (Silveyra et al. 2021). Their importance lies in the fact that they can be developed through teaching and training methods (Oosterbeek et al. 2021; Tehseen et al. 2019). The term "competencies" has been the subject of extensive academic debates that transcend disciplines such as education, pedagogy, psychology, and organizational behavior (Kozlinska et al. 2020; Tittel and Terzidis 2020). This concept extends to diverse fields such as medicine, health sciences, strategic management, and public policy, generating diverse perspectives on its components, including skills, knowledge, values, attributes, behaviors, or attitudes, depending on the approach (Zdolšek and Širec 2018). Despite these variations among authors, there is a consensus that competencies encompass the knowledge, skills, and attitudes necessary to successfully execute a specific activity (Okolie et al. 2021).



operations, exert a decisive influence on their performance. In this scenario, the urgent need for these entrepreneurs to acquire entrepreneurial skills is presented as imperative (Man et al. 2002).

By evidencing that the competitiveness, business success, and profitability of companies are related to the competencies developed by individuals, the need to provide university students with these competencies becomes evident, not only technical knowledge facilitates the management of the company, but a fundamental part is also how the individual uses them and how they face them. The more competencies an individual possesses, according to their level within the organization, the easier it will be to deal with situations (Alles 2009).

Given that it is important to establish the business competencies that are part of entrepreneurship for an entrepreneur to be successful, many entrepreneurial competencies are compiled from the literature, considering the most cited authors on the subject, mainly in recent years (Table 1).

Table 1. List of variables (most relevant entrepreneurial competencies) and definitions

<b>Entrepreneurial competencies</b>	<b>Definitions</b>
Adaptability to change (V1)	Ability to quickly identify, understand, and act on changes in the organization's environment, both internal and external.
Strategic vision (V2)	Ability to visualize and drive the company or the area in charge as a comprehensive system to achieve objectives and goals.
Continuous learning of the industry and the market (V3)	Ability to understand the needs of customers, and consumers, both domestic and international.
Mastery of technical issues (V4)	Ability to possess, keep updated, and demonstrate all the knowledge and/or specific experience required for the position.
Continuous learning about products (V5)	Ability to understand the products and/or services of the organization and evaluate the feasibility of adapting them to the requirements, preferences, and needs of customers.
Productivity (V6)	Ability to set high performance goals and achieve them successfully, on time, and with the required qualities.
Orientation to quality results (V7)	Ability to guide one's own and/or others' behaviors toward achieving or exceeding expected results.
Planning and Organizational Capacity (V8)	Ability to effectively determine the goals and priorities of their task, area, or project, and specify the stages, actions timeframe, and resources required to achieve the objectives.
Integrity (V9)	Ability to behave in accordance with moral values, good customs, and professional practices, acting with confidence and congruence between what they say and do.
Toughness and dynamism (V10)	Ability to act with serenity, determination, firmness, enthusiasm, and perseverance to achieve challenging objectives.
People management (V11)	Ability to distribute tasks and delegate authority to a group of collaborators.
Management and achievement of objectives (V12)	Ability to mobilize organizational resources, control management, and integrate activities to achieve effectiveness, efficiency, and quality in the fulfilling the mission.
Leadership (V13)	Ability to develop the talent and potential of their people, motivating, stimulating, and inspiring their collaborators, allowing them to make their best contributions.
Strategic thinking (V14)	Ability to establish the short-, medium-, and long-term impact of environmental changes in the organization.
Public relations (V15)	Ability to establish networking relationships with individuals and organizations that allow him or her to influence the social, economic, and political referents of the community.
Teamwork (V16)	Ability to collaborate with others, be part of a group, and work with other areas of the organization to achieve the strategy collectively.

Internal and external customer orientation (V17)	Ability to have a permanent vocation to serve internal and external customers, understand their demands, and generate effective solutions to their needs.
Effective communication (V18)	Ability to listen and understand others to transmit the information that is required in a clear and timely manner, in pursuance of achieving organizational objectives.
Decision-making (V19)	Ability to analyze various variants or options, considering the existing circumstances, available resources, and their impact on the business, and then select the most appropriate alternative.
Innovation and creativity (V20)	Ability to devise new and different solutions aimed at solving problems or situations and adding value to the organization.
Initiative – autonomy (V21)	Ability to act proactively and think about future actions to create opportunities or avoid problems that are not evident to others.
Adaptability – flexibility (V22)	Ability to work effectively in varied and/or unusual situations, with diverse individuals or groups.
Perseverance in achieving objectives (V23)	Ability to act firmly and consistently in the execution of projects and achievement of objectives.
Economic sustainability (V24)	Ability to apply methods to maintain the company under favorable financial conditions for a given period.
Social sustainability (V25)	Ability to develop activities for the benefit of the internal and external community of influence of the organization.
Environmental sustainability (V26)	Ability to organize and conduct environmental education, conservation, or restoration activities.
Risk-taking (V27)	Ability to accept risks, mitigate the impact, and assume the responsibility that it brings.

Source: Pachón-Palacios et al. 2021.

### **3. Methods**

For the research, the method of consultation with experts was chosen as a qualitative method because of the characteristics of the topic and the possible influences between multiple variables. The experts' estimates were channeled through an online application designed for this purpose. Subsequently, the data were statistically worked, and the results were represented numerically. The application of the instrument was supported by a conceptualization interview before the application. The main result of this activity with experts from each group (teachers – entrepreneurs) was the generation of a scale of competencies that should be developed in training courses from their approaches.

### **4. Data Collection**

This instrument of inquiry for the experts was developed since the literature on the most recurrent and influential entrepreneurial competencies for the development of entrepreneurship, as mentioned above. The question for both groups, teachers, and employers, focused on inquiring about the most important, representative, and necessary competencies for them to be trained in university students. Results such as mean, and CV variability coefficient are presented in Table 2.

Table 2. Entrepreneurial skills and associated competitive advantages.

Entrepreneurial Competence	COD	Teacher			Entrepreneurial		
		$\sum_{i=1}^7 x$	$\bar{x}$	CV	$\sum_{i=1}^8 x$	$\bar{x}$	CV
Adaptability to change	V1	45	1,73	0,58	47	1,81	0,73
Strategic vision	V2	72	2,77	0,16	73	2,81	0,20
Continuous learning of the industry and the market	V3	68	2,62	0,19	73	2,81	0,18
Mastery of technical issues	V4	38	1,41	0,91	63	2,42	0,41
Continuous learning about products	V5	60	2,31	0,38	77	2,96	0,07
Productivity	V6	24	0,89	1,14	54	2,08	0,58
Orientation to quality results	V7	62	2,38	0,29	76	2,92	0,13
Planning and Organizational Capacity	V8	66	2,44	0,38	75	2,88	0,15
Integrity	V9	57	2,28	0,35	41	1,64	0,72
Toughness and dynamism	V10	35	1,30	0,77	44	1,69	0,76
People management	V11	64	2,46	0,21	57	2,19	0,50
Management and achievement of objectives	V12	65	2,50	0,23	72	2,77	0,16
Leadership	V13	74	2,85	0,19	70	2,69	0,23
Strategic thinking	V14	73	2,81	0,14	67	2,58	0,33
Public relations	V15	66	2,54	0,34	54	2,08	0,45
Teamwork	V16	62	2,38	0,29	67	2,58	0,27
Internal and External Customer Orientation	V17	72	2,77	0,16	67	2,58	0,27
Effective communication	V18	73	2,81	0,23	65	2,50	0,26
Decision-making	V19	69	2,65	0,28	71	2,73	0,24
Innovation and creativity	V20	64	2,46	0,37	73	2,81	0,20
Initiative: autonomy	V21	67	2,58	0,22	72	2,77	0,19
Adaptability – flexibility	V22	69	2,65	0,26	71	2,73	0,20
Perseverance in achieving objectives	V23	71	2,73	0,27	75	2,88	0,15
Economic sustainability	V24	69	2,65	0,34	73	2,81	0,18
Social sustainability	V25	69	2,65	0,28	75	2,88	0,11
Environmental sustainability	V26	71	2,73	0,24	58	2,23	0,46
Risk-taking	V27	77	2,96	0,07	63	2,423	0,312

Source: Authors’ own elaboration based on expert data.

**Expert Features**

The data are obtained by direct inquiry to the experts, supported by the method of open and contextualized opinion, direct questions, and a Likert- type response instrument. The advantage of this method is that it collects the opinions of people with extensive experience, which makes it easier for the data obtained to be reliable and congruent with the specific empirical reality (Bastarrica and Romero-Lamorú, 2014; Fernandez et al, 2018). Table 3 shows the composition and characteristics of the group of 15 experts (7 teachers, 8 entrepreneurs) who participated in the study.

The experts were selected from different universities, for their higher education experience in the field of entrepreneurship. The group of entrepreneurs was filtered as they should be leaders in the selection and professional development of different companies.

Table 3. Characteristics of the expert groups

<b>Characteristics</b>	<b>Teachers</b>	<b>Entrepreneurs</b>
<b>Years of experience</b>	14 years on average in university teaching	10 years on average as an entrepreneur (President/General Manager/Owner)
<b>Basic academic training</b> <b>University Undergraduate</b>	23.1% Engineering and related professionals	76.9% Professional in management and related sciences
<b>Men</b> <b>Women</b>	57.1% male 42.9% Women	62.5% male 37.5% Women
<b>Main Role</b>	46.2% Teachers	53.8% Entrepreneurs

Source: Authors' own elaboration based on the experts' resumes.

Data collection was conducted over a period of two weeks prior to an exposition of the characteristics and scope of the project. From the initial sample, three expert evaluations were discarded because of the lack of variability in their responses and incomplete completion of the instrument.

## 5. Results and Discussion

To determine which entrepreneurial competencies will be used for research in university students, two variables or dimensions were used: the first is the variability of the experts' response ( $y$ ) and the second is the mean of the rating ( $x$ ) given each of the 27 entrepreneurial competencies identified. Variation was calculated as a measure of dispersion with the coefficient of variation [CV], and the statistical mean [Mean] with the answers of the experts for each competency. Figure 2 shows the results of the inquiry with the experts. The calculation of the coefficient of variation was performed using the following formula:

$$CV = \frac{\sigma}{\mu}$$

Where:

$\sigma$  = standard deviation of the population

$\mu$  = population mean

The 27 competencies were evaluated in the same way by both the teachers and employers. They were not singled out or organized in any special way to avoid bias.

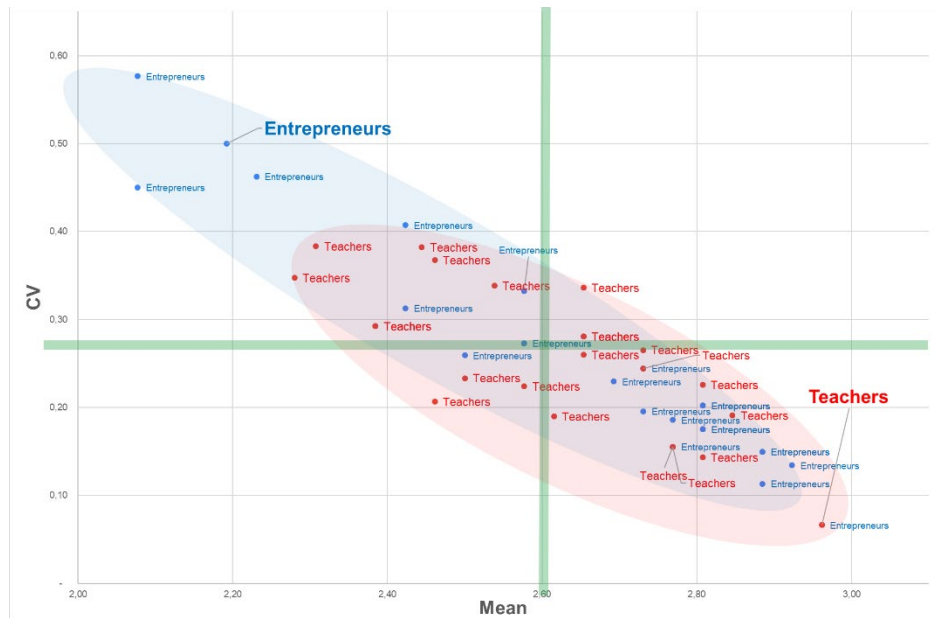


Figure 2. Organization of the most significant entrepreneurial competencies of teachers and entrepreneurs  
Source: Authors.

In Figure 2, where the responses of the two groups (teachers and employers) are presented together, we can see some important behaviors:

- The dispersion of entrepreneurial competition is greater for entrepreneurs (dots in blue). An important group of competencies is concentrated in the sector with the highest value (extreme right) and a lower variability value (lower part).
- For the competencies assessed by the teachers (dots in red), the dispersion is smaller, and the concentration of these competencies is carried out in the central axes of the graph.
- For the two data series (teachers and employers), the highest concentration of variables occurs in the sector where the variables are more representative and have less variability, except for some competencies.

Figure 3 shows the specific distribution of the most representative entrepreneurial competencies according to the evaluation conducted by the group of teachers. Changes in the distribution are noted as follows:

- The three entrepreneurial competencies in university students that are best valued by the group of teachers are: Risk-taking (V27) and Strategic thinking (V14).
- The three entrepreneurial competencies in university students with the lowest value and widely dispersed areas follows: Continuous learning about products (V5), Integrity (V9) and Planning and organizational capacity (V8).



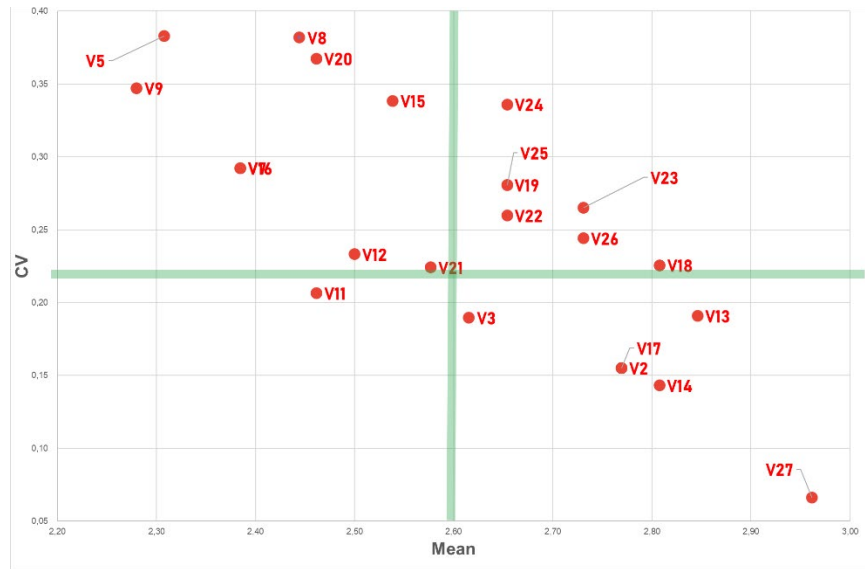


Figure 3. Most Representative Entrepreneurial Competencies for Teachers in University Students  
Source: Authors.

For evaluating of entrepreneurs in Figure 4, it is possible to observe the behavior of the distribution and characteristics of greater variability. The figure is based on the data in Table 2. As you can see, there are some particularities:

- The three entrepreneurial competencies in university students that are most valued by the group of entrepreneurs are as follows: Continuous learning about products (V5), Planning and organizational capacity (V8), and Orientation to quality results (V7).
- The three entrepreneurial competencies in university students with the lowest value and widely dispersed are: Productivity (V6), People management (V11), and Public relations (V15).

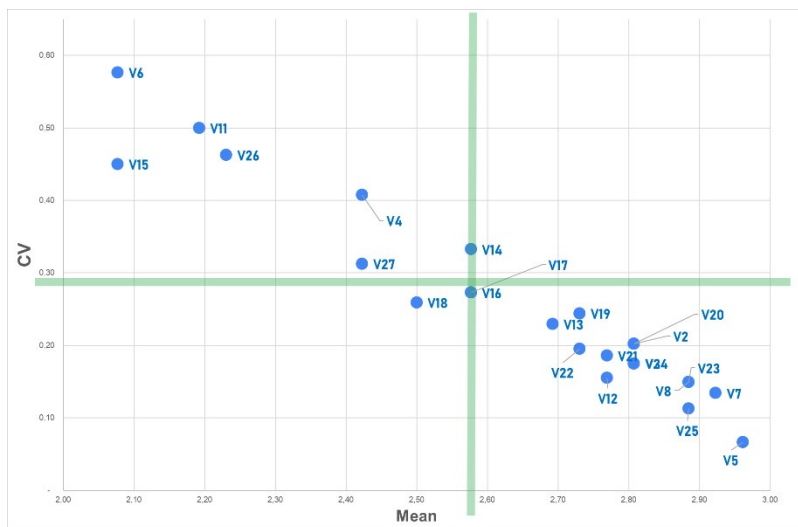


Figure 4. Most representative entrepreneurial competencies for entrepreneurs among university students  
Source: Authors.

A comparison of the distribution in the classification or categorization of entrepreneurial competencies estimated by teachers and entrepreneurs is shown in Figure 5. We see that the figure with comparative columns that in many of the

27 entrepreneurial competencies changes their position in the classification, depending on the group of the expert who carried out the analysis. The competencies that are most important in one group of experts – teachers or entrepreneurs – are not the same for the other.

In addition, an important element of this comparison is that there are entrepreneurial competencies that both groups rate as having a low value: Productivity (V6), Adaptability to change (V1), Integrity (V9), and Toughness and dynamism (V10).

### **5.1 Numerical Results**

First, the design of the survey scale is based on the evaluation of the structural analysis matrix,<sup>1</sup> so its content validity is good. Four levels were specified in the rating scale on the entrepreneurial competence evaluated: 0=no influence, 1=weak influence, 2=moderate influence, and 3=strongly influence the success of the company.

The results shown in Table 4 were used to accept or reject the hypothesis about the difference in the responses of the groups of professors and entrepreneurs on the entrepreneurial competencies most influential in business success. As shown in Table 4, there was a significant difference in the most important competencies for each of the two groups of jurors ( $p < 0.001$ ).

According to the extension of the t-student statistic,<sup>2</sup> the hypothesis that the first three variables (entrepreneurial competencies) of each group of jurors are different is initially accepted. The value of the competencies for teachers Risk-taking (V27), mean= 2.962 - Leadership (V13), mean= 2.846 and Effective communication (V18), mean= 2.808 were significant ( $p < 0.05$ ). The behavioral value of the employers' responses showed that the most important competencies for this group were: Continuous learning about products (V5) mean=2.962 - Orientation to quality results (V7), mean=2.923 and Planning and organizational capacity (V8) mean=2.885 (more operational and role competencies).

The competencies Integrity (V9), Public Relations (V15), Mastery of technical topics (V4), and Productivity (V6), are entrepreneurial competencies that scored low for the two groups of jurors.

---

<sup>1</sup> Using the MIC-MAC method to determine the relevance of a variable in a complex system.

<sup>2</sup> Test for independent samples assuming equal variances.

Table 4. Coefficients and p-values.

Variable	No	Teachers	Entrepreneurs	t - Statistics	P-value	Results
		MEAN	MEAN			
Integrity (V9)	V9	2,3	1,6	2,244	0,03	Supported
Risk-taking (V27)	V27	3,0	2,4	3,509	0,00	Supported
Environmental sustainability (V26)	V26	2,7	2,2	2,009	0,04	Supported
Public relations (V15)	V15	2,5	2,1	2,009	0,07	Supported
Effective communication (V18)	V18	2,8	2,5	2,009	0,05	Supported
People management (V11)	V11	2,5	2,2	2,009	0,26	No supported
Strategic thinking (V14)	V14	2,8	2,6	2,009	0,22	No supported
Internal and external customer orientation (V17)	V17	2,8	2,6	2,009	0,24	No supported
Leadership (V13)	V13	2,8	2,7	2,008	0,04	No supported
Strategic vision (V2)	V2	2,8	2,8	2,009	0,78	No supported
Adaptability to change (V1)	V1	1,7	1,8	2,009	0,81	No supported
Decision-making (V19)	V19	2,7	2,7	2,009	0,70	No supported
Adaptability – flexibility (V22)	V22	2,7	2,7	2,009	0,65	No supported
Perseverance in achieving objectives (V23)	V23	2,7	2,9	2,009	0,36	No supported
Economic sustainability (V24)	V24	2,7	2,8	2,009	0,44	No supported
Continuous learning of the industry and the market (V3)	V3	2,6	2,8	2,00758377	0,09	No supported
Initiative – autonomy (V21)	V21	2,6	2,8	2,009	0,21	No supported
Teamwork (V16)	V16	2,4	2,6	2,009	0,33	No supported
Social sustainability (V25)	V25	2,7	2,9	2,009	0,15	Supported
Management and achievement of objectives (V12)	V12	2,5	2,8	2,009	0,06	Supported
Orientation to quality results (V7)	V7	2,4	2,9	2,008	0,00	Supported
Toughness and Dynamism (V10)	V10	1,3	1,7	2,008	0,21	Supported
Innovation and creativity (V20)	V20	2,5	2,8	2,009	0,10	Supported
Planning and Organizational Capacity (V8)	V8	2,4	2,9	2,008	0,03	Supported
Continuous learning about products (V5)	V5	2,3	3,0	2,009	0,00	Supported
Mastery of technical issues (V4)	V4	1,4	2,4	2,008	0,00	Supported
Productivity (V6)	V6	0,9	2,1	2,008	0,00	Supported

Source: Authors.

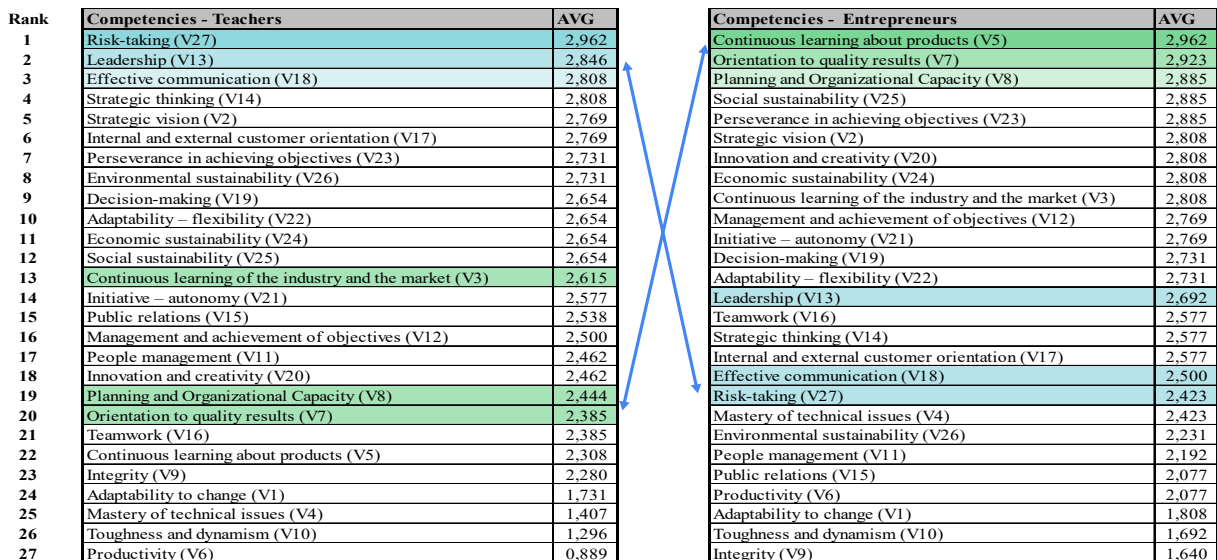


Figure 5. Comparison of the location of entrepreneurial competencies according to their assessment for the two expert groups

Source: Authors.

The most important entrepreneurial competencies for each group of experts are quite low compared with the other groups of experts. For example, for entrepreneurs, a fundamental entrepreneurial competence is Continuous learning about products (V5), located as the most important in its scale, while for teachers, this same entrepreneurial competence is in position 22; this effect only happens with the most valued competencies of each group of experts.

### 5.2 Graphical Results

Regarding valuation, most of the entrepreneurial competencies evaluated for entrepreneurs are important and obtain a higher rating than those of the group of teachers. Of the total of 27 competencies, 17 are mostly rated by entrepreneurs and only 10 are mostly rated by teachers over entrepreneurs. As shown in Figure 6.

In addition, it is highlighted that the behavior of the two groups, for the most part, is similar with respect to the qualification given to each of the competencies separately, but this trend is departed from that between the group of teachers and employers: Continuous learning about products (V5), and Integrity (V9).

Finally, it is revealed that the entrepreneurial competencies Toughness and dynamism (V10) rated by the group of teachers with 1.3 and by the group of entrepreneurs 1.7, and Adaptability to change (V1), with a score for teachers 1.8 and entrepreneurs 1.7, are among the lowest scores, but without a consensus among the groups of judges.

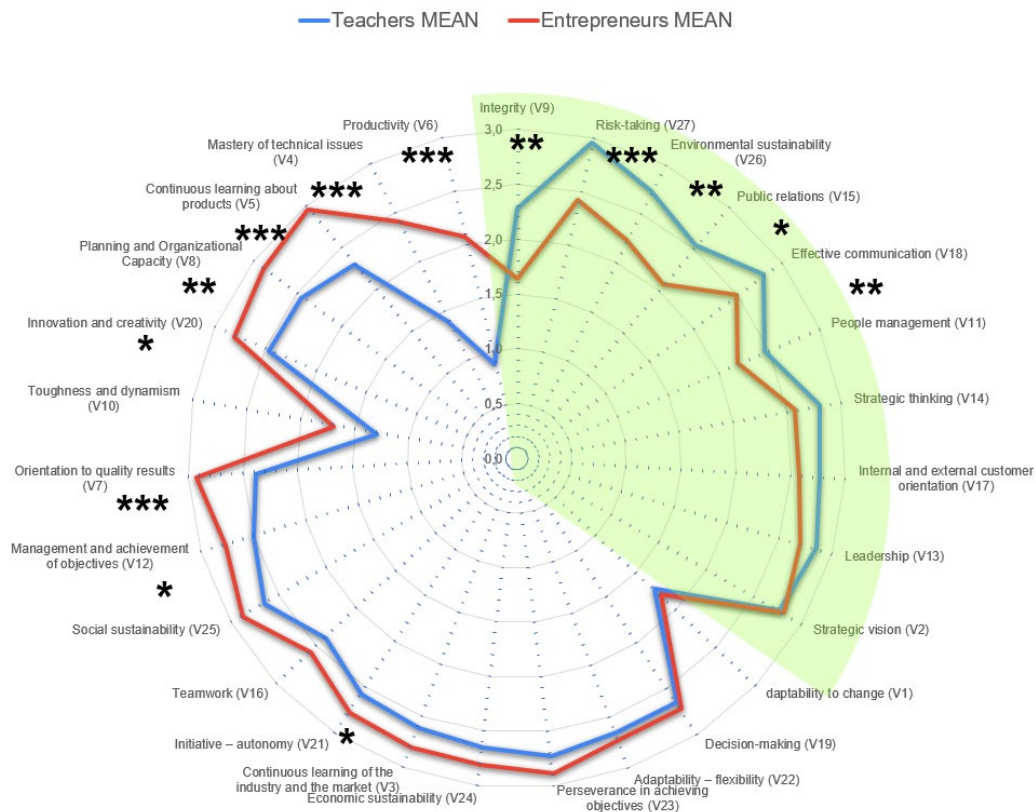


Figure 6. Ranking of Entrepreneurial Competitions and Groups of Judges

\*  $p < 0.1$  \*\*  $p < 0.05$ , \*\*\*  $p < 0.00$ .

Source: Authors.

### **5.3 Proposed Improvements**

Although university institutions try to adjust to the training requirements in entrepreneurship of companies for the training of university students, it is complex for universities to focus on a single type of industry or sector or type of competition. It is advisable to evaluate cross-cutting training elements or requirements to respond to the training of business skills, as suggested by the group of entrepreneurs. The so-called operational competencies that this business approach looks for in university students. For example, ISO standards, the use of widely known industry tools, and specialized software.

Similarly, it is important for companies to know that university institutions make a great contribution in generating certain personal, general, and/or soft skills so that they can be the starting point for the strengthening of skills focused on business operation and competitiveness. An example of this would be competencies for development in training in business challenges, support in professional internships, and/or linkages in micro-credential processes according to the needs of the environment.

### **5.4 Validation**

As part of the validation of the survey data, a confirmatory analysis was performed using Cronbach's alpha, with a value of 0.98 calculated with the SPSS V22 statistical program. This indicator is valid if it is greater than 0.66 -high reliability- (García-González and Ramírez-Montoya 2020), which is why it is accepted as a valid data application. The level of significance in research in the field of social sciences is usually set at 5% (or 0.05), although other levels may be used depending on the study. As can be seen in Figure 6, the entrepreneurial competencies with the greatest disagreement between the two groups  $***p < 0.00$ . They are the ones with the greatest difference between their assessments in each group of experts.

### **5.5 General findings**

#### **Entrepreneurial Competencies: Teachers' groups**

The most significant variable for teachers is Risk-taking (V27), which agrees with the argument of several authors that one of the main aspects of entrepreneurial education should be training in the attitude to risk (Blass, 2018). Risk tolerance leads to the ability to overcome challenges, face uncertainties, and take responsibility for the future of the business (Bagheri et al. 2013; Bauman and Lucy 2021), with the human elements of how risk is faced and what behavior is assumed, to make operational, pricing, and marketing decisions establishing competitive advantages (Man et al. 2002). The second most important variable for teachers is Effective Communication (V18). This variable is a social skill that, when developed in individuals, improves their ability to express ideas, objectives, and expectations. At the same time, they know how to listen and understand others (Morris et al. 2013), which facilitates the achievement of organizational objectives (Villa et al. 2008). The third variable is Leadership (V13), which, like the previous one, the development of this social skill allows the guide, inspire, motivate, foster collaborative work environments for informed decision-making, and allows the work team to make better contributions (Bagheri et al. 2013; Renko et al. 2015; Villa et al. 2008). Learning to be a leader, communicating effectively, and taking risks are individual traits that, in addition to making it easier for the entrepreneur to clearly explain why they want to start and manage a business, help them stay focused on their goals, face challenges, manage uncertainty, and maintain a competitive advantage over rivals (Bauma and Lucy 2021). This makes it possible for ventures to become real companies that last over time.

#### **Entrepreneurial Competencies: Entrepreneurs' groups**

It is evident that, for entrepreneurs, the most significant competencies are those related to attitudes and intellectual characteristics. They are those competencies that allow the individual to acquire and use resources to coordinate the interests of the company and its commercial activities (Mitchelmore and Rowley 2013), the most relevant competencies being: Orientation to quality results (V7), Planning and Organizational Capacity (V8), and Continuum learning about products (V5). Orientation to quality results (V7) refers to the ability to orient one's own behaviors and those of others toward achieving or exceeding expected results (Cingula, 2013; Ferreras-Garcia et al. 2019; Ferreras-Garcia et al. 2021), Planning and Organizational Capacity (V8) is the ability to effectively determine goals and priorities of your task, area, or project, and specify the stages, actions, deadlines, and resources required to achieve the objectives (Cingula 2013; Tehseen et al 2019; Villasana et al. 2016), and the Learning About Products Continuum (V5) is the ability to know the organization's products and services and evaluate the feasibility of adapting them to customer requirements, preferences, and needs (Bacigalupo et al. 2016; Dinning 2019).

The difference between the competencies selected by teachers and employers reflects the different priorities and contexts in which each operates. Teachers can focus on cultivating interpersonal and leadership skills, which are crucial in the startup and development phases of entrepreneurship. Entrepreneurs, with a more hands-on approach, can highlight skills related to strategic planning and business-specific knowledge to achieve successful results in a business environment. However, the six competencies are important to ensure that ventures become true companies, passing the 5-year barrier, ensuring that they last in the long term being successful, profitable, and with competitive advantages, as mentioned by the different authors (Bastista-Canino et al. 2024; Man et al. 2002).

As observed in Figure 4, some entrepreneurial competencies of the 27 selected competencies are qualified for both groups of experts as not very important and fundamental competencies to be trained in university students: V6. Productivity, V1. Adaptability to change, V9. Integrity, and V10. Toughness and dynamism. These competencies are mostly classified according to Alles (2009) as 'specific competencies by area', these competencies can be defined as those that are required for the performance of a specific occupation and that are more related to functions or jobs. The others are defined as cardinal competencies (Alles 2009), which are those that all members of the organization must possess generally.

## **6. Conclusion**

In a world where change is constant, there is no doubt that individuals must be trained to face the different challenges that must currently be faced and those that lie ahead, which is why different studies have shown the importance of having entrepreneurial and mainly business skills to cope with changes and guide companies toward competitiveness and success. with profitable and long-lasting companies.

The study concludes that the entrepreneurial competencies with which university students are trained, and that Colombian SMEs must support are not the same for groups of stakeholders unanimously. In addition, it reveals that they should be more proficient in certain business skills and knowledge skills depending on the approach with which they are being trained. The approaches of academia (teachers) and companies (entrepreneurs) are different both in terms of specific competence and the group of those that make it up. This is one of the important conclusions for the academy and is that it is necessary to delve into the educational objects of many undergraduate programs to adjust the intentionality of the training, since it may be training with entrepreneurial skills that the market does not value or are appreciated.

Another less important element is to understand the needs of entrepreneurs in the processes of training skills in university students in their companies. As evidenced by the competitions. More valued for entrepreneurs, the intention is that these skills are put into action to generate value and competitive advantages in the medium or long term.

Faced with these approaches to the need for training in entrepreneurial skills in university students, university institutions should seek mechanisms to harmonize the challenges that both approaches (academia and business) generate in terms of training, curriculum development, and pedagogical methodologies. Training in certain competencies or groups of competencies will require special curricular schemes that prioritize certain types of methodologies, that teachers can foster competencies, and that students develop integrative and flexible structures of knowledge.

## **References**

- Abdullah, S., Rehman, A., Abdullah, S., & Abdul, M., How entrepreneurial competencies influence the leadership style: A study of Saudi female entrepreneurs. *Cogent Business and Management*, 10(2), 2023. <https://doi.org/10.1080/23311975.2023.2202025>
- Alles, M., *Dictionary of Competencies The Trilogy: The 60 Most Used Competencies. Volume I (Vol. 1)*, 2009. <https://doi.org/10.1017/CBO9781107415324.004>
- Ataei, P., Karimi, H., Ghadermarzi, H., & Norouzi, A., A conceptual model of entrepreneurial competencies and their impacts on rural youth's intention to launch SMEs. *Journal of Rural Studies*, 75(January), 185–195, 2020. <https://doi.org/10.1016/j.jrurstud.2020.01.023>
- Bacigalupo, M., Kampylis, P., Punie, Y., & Van den Brande, G., *EntreComp: The entrepreneurship competence framework* (Luxembourg. JRC Science for Policy Report, Ed.), 2016. <https://doi.org/https://doi.org/10.2791/593884>
- Bagheri, A., Lope, Z. A., & Krauss, S. E., Entrepreneurial leadership competencies among Malaysian university

- student entrepreneurial leaders. *Asia Pacific Journal of Education*, Vol. 33, pp. 493–508, 2013. <https://doi.org/10.1080/02188791.2013.822789>
- Bastarrica, D., & Romero-Lamorú, I., Structural analysis for the strategic strengthening of the University Institute of Technology of the State of Bolívar (IUTEB). *International Journal of Knowledge Management and Technology*, 2(4), 1–17, 2014.
- Batista-Canino, R., Santana-Hernandez, L., & Medina-Brito, P., A scientometric analysis on entrepreneurial intention literature. *Journal of Business Research*, 174(114480), 1–23, 2024. <https://doi.org/10.1016/j.jbusres.2023.114480>
- Bauman, A., & Lucy, C., Enhancing entrepreneurial education: Developing competencies for success. *International Journal of Management Education*, 19(1), 100293, 2021. <https://doi.org/10.1016/j.ijme.2019.03.005>
- Blass, E., Developing a curriculum for aspiring entrepreneurs: What do they really need to learn? *Journal of Entrepreneurship Education*, 21(4), 1–14, 2018.
- Cingula, M., Entrepreneurial competences in contemporary management. *Ekonomski Horizonti*, 15(1), 77–86, 2013. <https://doi.org/10.5937/ekonhor1301077c>
- Dinning, T., Articulating entrepreneurial competencies in the undergraduate curricular. *Education and Training*, 61(4), 432–444, 2019. <https://doi.org/10.1108/ET-09-2018-0197>
- Fernández, A., Armijos, L., Cárdenas, F., Calero, S., Parra, H., & Galarza, S., Elementos clave para perfeccionar la enseñanza del inglés en la Universidad de las Fuerzas Armadas ESPE Key aspects for improving english teaching in the University of the Armed Forces ESPE. *Higher Medical Education*, 32(1), 94–105, 2018. Retrieved from <http://scielo.sld.cuhttp://scielo.sld.cu>
- Ferreras-Garcia, R., Hernández-Lara, A. B., & Serradell-López, E., Entrepreneurial competences in a higher education business plan course. *Education and Training*, 61(7–8), 850–869, 2019. <https://doi.org/10.1108/ET-04-2018-0090>
- Ferreras-Garcia, R., Sales-Zaguirre, J., & Serradell-López, E., Developing entrepreneurial competencies in higher education: a structural model approach. *Education + Training*, ahead-of-p(ahead-of-print), 2021. <https://doi.org/10.1108/ET-09-2020-0257>
- García-González, A., & Ramírez-Montoya, M., Social entrepreneurship competency in higher education: an analysis using mixed methods. *Journal of Social Entrepreneurship*, 1–19, 2020. <https://doi.org/10.1080/19420676.2020.1823872>
- Hsu, C.-C., Tan, K., Laosirihongthong, T., & Leong, G., Entrepreneurial SCM competence and performance of manufacturing SMEs. *International Journal of Production Research*, 49(22), 6629–6649, 2011. <https://doi.org/10.1080/00207543.2010.537384>
- Hwang, W.-S., Choi, H., & Shin, J., A mediating role of innovation capability between entrepreneurial competencies and competitive advantage. *Technology Analysis and Strategic Management*, 32(1), 1–14, 2020. <https://doi.org/10.1080/09537325.2019.1632430>
- Khan, M., Zubair, S., Rathore, K., Ijaz, M., Khalil, S., & Khalil, M., Impact of Entrepreneurial Orientation Dimensions on Performance of Small Enterprises: Do Entrepreneurial Competencies Matter? *Cogent Business & Management*, 8(1), 1943241, 2021. <https://doi.org/10.1080/23311975.2021.1943241>
- Kozlinska, I., Rebmann, A., & Mets, T., Entrepreneurial competencies and employment status of business graduates: the role of experiential entrepreneurship pedagogy. *Journal of Small Business and Entrepreneurship*, 0(0), 1–38, 2020. <https://doi.org/10.1080/08276331.2020.1821159>
- Kyndt, E., & Baert, H., Entrepreneurial competencies: Assessment and predictive value for entrepreneurship. *Journal of Vocational Behavior*, 90, 13–25, 2015. <https://doi.org/10.1016/j.jvb.2015.07.002>
- Man, T., Lau, T., & Chan, K., The competitiveness of small and medium enterprises: A conceptualization with focus on entrepreneurial competencies. *Journal of Business Venturing*, 17(2), 123–142, 2002. [https://doi.org/10.1016/S0883-9026\(00\)00058-6](https://doi.org/10.1016/S0883-9026(00)00058-6)
- Mitchelmore, S., & Rowley, J., Entrepreneurial competencies: A literature review and development agenda. *International Journal of Entrepreneurial Behaviour & Research*, 16(2), 92–111, 2010. <https://doi.org/10.1108/13552551011026995>
- Mitchelmore, S., & Rowley, J., Entrepreneurial competencies of women entrepreneurs pursuing business growth. *Journal of Small Business and Enterprise Development*, 20(1), 125–142, 2013. <https://doi.org/10.1108/14626001311298448>
- Morris, M. H., Webb, J. W., Fu, J., & Singhal, S., A competency-based perspective on entrepreneurship education: Conceptual and empirical insights. *Journal of Small Business Management*, 51(3), 352–369, 2013. <https://doi.org/10.1111/jsbm.12023>
- Ng, H., & Kee, D., Entrepreneurial SMEs surviving in the era of globalisation: Critical success factors. In *Global*

- Opportunities for Entrepreneurial Growth: Coopetition and Knowledge Dynamics within and across Firms (pp. 75–90), 2017. <https://doi.org/10.1108/978-1-78714-501-620171007>
- Okolie, U., Igwe, P., Ayoola, A., Nwosu, H., Kanu, C., & Mong, I., Entrepreneurial competencies of undergraduate students: The case of universities in Nigeria. *International Journal of Management Education*, 19(1), 100452, 2021. <https://doi.org/10.1016/j.ijme.2021.100452>
- Oosterbeek, H., van Praag, M., & Ijsselstein, A., The impact of entrepreneurship education on entrepreneurship skills and motivation. *European Economic Review*, 54(3), 442–454, 2010. <https://doi.org/10.1016/j.euroecorev.2009.08.002>
- Pachón-Palacios, M., Velosa-García, J., & Osorio-Vega, F., Entrepreneurial competencies: An indispensable requirement for business success - Structural analysis in the higher education sector. In *Handbook of research on management techniques and sustainability strategies for handling disruptive situations in corporate setting* (pp. 439–463), 2021.
- Peschl, H., Deng, C., & Larson, N., Entrepreneurial thinking: A signature pedagogy for an uncertain 21st century. *International Journal of Management Education*, 19(1), 2021. <https://doi.org/10.1016/j.ijme.2020.100427>
- Postuła, A., & Majczyk, J., Managers and leaders in need of entrepreneurial competences. *Entrepreneurial Business and Economics Review*, 6(1), 91–103, 2018. <https://doi.org/10.15678/EBER.2018.060105>
- Reis, D., Fleury, A., & Carvalho, M., Consolidating core entrepreneurial competences: toward a meta-competence framework. *International Journal of Entrepreneurial Behaviour and Research*, 27(1), 179–204, 2021. <https://doi.org/10.1108/IJEBR-02-2020-0079>
- Renko, M., El Tarabishy, A., Carsrud, A. L., & Brännback, M., Understanding and measuring entrepreneurial leadership style. *Journal of Small Business Management*, 53(1), 54–74, 2015. <https://doi.org/10.1111/jbsm.12086>
- Rosenow-Gerhard, J., Lessons learned—configuring innovation labs as spaces for intrapreneurial learning. *Studies in Continuing Education*, 0(0), 1–17, 2020. <https://doi.org/10.1080/0158037X.2020.1797662>
- Santos, R., Barroso, F., & Ávila, J., Results of the measurement and analysis of entrepreneurial competencies for the creation of agribusinesses. Experience the Mayan area of Campeche. *Revista Mexicana de Agronegocios*, 35, 979–991, 2014.
- Silveyra, G., Herrero, Á., & Pérez, A., Model of Teachable Entrepreneurship Competencies (M-TEC): Scale development. *International Journal of Management Education*, 19(1), 2021. <https://doi.org/10.1016/j.ijme.2020.100392>
- Sutisna, A., Dalimunthe, H., & Retnowati, E., Building entrepreneurial literacy among villagers in Indonesia. *Rural Society*, 30(1), 45–58, 2021. <https://doi.org/10.1080/10371656.2021.1895472>
- Tehseen, S., Ahmed, F., Qureshi, Z., Uddin, M., & Ramayah, T., Entrepreneurial competencies and SMEs' growth: the mediating role of network competence. *Asia-Pacific Journal of Business Administration*, 11(1), 2–29, 2019. <https://doi.org/10.1108/APJBA-05-2018-0084>
- Tittel, A., & Terzidis, O., Entrepreneurial competences revised: developing a consolidated and categorized list of entrepreneurial competences. In *Entrepreneurship Education* (Vol. 3), 2020. <https://doi.org/10.1007/s41959-019-00021-4>
- Villa, A., Poblete, M., García, A., Malla, G., Marín, J., Moya, J., ... Solabarrieta, J., Competence-based learning. A proposal for the assessment of generic competences. In *Deusto University Press* (Vol. 1), 2008. <https://doi.org/10.15835/buasvmcn-hort:1894>
- Villasana, M., Alcaraz-Rodríguez, R., & Alvarez, M., Examining entrepreneurial attributes of Latin American female university students. *Gender and Education*, 28(1), 148–166, 2016. <https://doi.org/10.1080/09540253.2015.1093100>
- Zdolšek, T., & Širec, K., Conceptual Research Model for Studying Students' Entrepreneurial Competencies. *Naše gospodarstvo/Our Economy*, 64(4), 23–33, 2018. <https://doi.org/10.2478/ngoe-2018-0020>

## **Biographies**

**Martha Lucía Pachón-Palacios** is an Associate professor of the Faculty of Administration, Finance and Economic Sciences of the EAN University, Bogotá - Colombia. Ph.D. in Administration at the Externado University of Colombia. Her main research topics focus on Corporate Finance, Teacher Leadership, and skills training. Among her most notable publications are: Full-range leadership in the classroom. An analysis of the moderating role of teaching effectiveness in academic performance (2023), Leadership in educational project managers. A case applied in a university in Colombia (2023), Brick Building: virtual reality and entrepreneurial skills in a financial context (2022), Morphological analysis in foresight. Case applied to the training of transformational leaders of future projects (2022), Entrepreneurial competencies, an indispensable requirement for business success: Structural analysis in the Higher



Education sector (2021), Leadership in teachers and teamwork in hybrid training (2020), Construction and application of an instrument to measure entrepreneurial skills. An empirical case (2019), among others.

**J. Divitt Ed. Velosa** is a Mechanical Engineer from the National University of Colombia, Bogotá, Colombia. MSc. in Engineering - Materials and Manufacturing Processes. With a doctorate in Process Engineering from the EAN University, Colombia. He is currently a full professor at the Faculty of Engineering at EAN University. The research area in manufacturing and materials and pedagogical models applied in Engineering.