

Journal of Engineering Research

RESEARCH ADVANCE “ENTREPRENEURSHIP PROFILE OF STUDENTS AT THE UNIVERSITY OF SONORA, NORTHERN UNIT OF MEXICO”

Jesús Martin Cadena-Badilla

Rafael Hernández León

Francisco Javier León Moreno

Joaquín Vásquez Quiroga

All content in this magazine is licensed under a Creative Commons Attribution License. Attribution-Non-Commercial-Non-Derivatives 4.0 International (CC BY-NC-ND 4.0).



Abstract: Currently, the majority of higher education institutions (HEIs) do not have a profile that allows the development of the entrepreneurial skills that the graduated professional needs. Entrepreneurial activity is one of the main drivers of economic development, mainly due to its role in job creation and the expansion of economic sectors; On the other hand, it is a still new area of knowledge in the global framework of research, and as such, it is in the process of consolidating a conceptual scenario, which makes this proposal pertinent. The methodological approach includes a review of the state of knowledge on the topic, the application of a measurement scale (Profile e20), analysis using multivariate statistical methods (Factor Analysis), and the validation and reliability of the scale used. It is expected to identify the dimensions and variables that characterize the entrepreneurship profile of the students of the University of Sonora, which would facilitate decision making in the design of curricular and teaching-learning strategies. This advance covers up to the Reliability of the Instrument and the Factor Analysis to determine the factors of this construct in the Mexican context.

Keywords: Entrepreneurship, Entrepreneurial Self-Efficacy Scale Instrument, Entrepreneurial Capacity Profile.

INTRODUCTION

Entrepreneurship has been studied over the years from the point of view of both economics and psychology, sociology and anthropology; developing contributions that are responsible for the study of the phenomenon from a social point of view, on which there are relatively few agreements (Guzmán and Trujillo, 2008). Entrepreneurship has been related to the discovery of profitable opportunities, concluding that entrepreneurial opportunities are those situations in which methods, goods

and services can be introduced to the market at a price higher than their production costs (Shane and Venkataraman, 2000).

Entrepreneurs at an international level have had greater importance, especially because they contribute to the generation of new jobs and greater development of nations, which is why there are international organizations that are interested in knowing what the characteristics of the people who They decide to start a new company. (Fernandez; 2015).

The entrepreneurial phenomenon has been considered in recent years as a factor of economic development and that seeks social development and the creation of new companies, through the creation of new products or services that have not existed until the moment of their creation. Entrepreneurs are considered to contribute to the processes where a person transforms resources, materials and work, taking risks and therefore generating wealth through the profits generated by the new productive organization (Hisrich, Langan-Fox & Grant, 2007).

For this reason, entrepreneurship is defined by Hisrich as the “Process of creating something new with value, dedicating the necessary time and effort, assuming the corresponding financial, psychological and social risks, and obtaining the resulting rewards of satisfaction and economic and personal independence.” (Hisrich, Peters, & Shepherd, 2005) the aforementioned reflects that people require a lot of decision to assume the risks involved in sacrificing financial, material and human resources to generate a new company.

People who decide to undertake business have certain characteristics or behaviors that characterize them, “some of these characteristics may be planning capacity (setting goals), contact management, effective communication, search for information,

creativity, teamwork, decision making and leadership” (Leiva Bonilla, 2008), from the aforementioned it is found that the characteristics that entrepreneurs possess are similar although the circumstances that surround each person tend to develop some characteristics more than others, then intervening a new element which is the motivations that border entrepreneurs to generate a new company.

The conditions of each of the entrepreneurs are different and that is why each one has different motivations for deciding to start a business out of necessity or opportunity and according to “an entrepreneur out of necessity is one who is immersed in the entrepreneurial process because he or she does not have a better choice in the labor market; while an opportunity entrepreneur is one who chooses to create a company based on the perception that there is a business opportunity not taken advantage of – or incompletely taken advantage of – by existing companies”, (Fernández, 2015) although it must be considered that in Sometimes those who start out of necessity tend to abandon their company when they manage to get a job with a fixed income.

As one of the goals to fulfill the objective of promoting sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all, the United Nations (2016) proposes promoting development-oriented policies that support the productive activities, the creation of decent jobs, entrepreneurship, creativity and innovation, and promoting the formalization and growth of micro, small and medium-sized enterprises, including through access to financial services.

Entrepreneurship has been approached from university research from multiple approaches. In recent years, several researchers have asked questions about the orientation and characteristics of entrepreneurship research, as a new area of knowledge that is gradually gaining more importance in the academic world worldwide (Matiz, 2009). In this sense, the works of Veciana (1999), Castillo (1999), Bruyat and Julien (2000), Low (2001), Busenitz et al. (2003), Cooper & Schindler (2003), Moriano, Sánchez and Palací (2004), Zahra et al. (2006), López (2008), Martínez (2008), Cardozo (2010), Wiklund, Davidsson, Audretsch, & Karlsson (2011), Nicolás and Rubio (2012), Herrera and Montoya (2013), Hidalgo, Kamiya and Reyes (2014), Karmarkar, Chabra and Deshpande (2014); and more recently, Murillo and Santillán (2015), Rodríguez (2015), Leitch and Volery (2017), among many others.

Regarding the quantitative approach, more towards the generation of measures of entrepreneurship, the works of De Noble, Jung and Ehrlich (1999), Ehrlich, De Noble and Singh (2005), Sánchez, Lanero and Yurrebaso (2005), Moriano, Palací and Morales (2006), Lanero, Sánchez, Villanueva and D’Almeida (2007), Tinoco (2008), Lanzas, Lanzas y Lanzas (2009), Salvador (2009), González and Zuñiga (2011), Campos, Figueroa and Sandoval (2011), Merino and Vargas (2011), Lanero, Vázquez, Gutiérrez and García (2011), Moriano, Topa, Molero, Entenza and Lévy-Mangin (2012), Cabana, Cortes, Plaza, Castillo and Álvarez (2013), Rodríguez and Gómez (2014), Alcaraz and Villasana (2015), Pérez and Torralba (2015), Renko, El Tarabishy, Carsrud & Brännback (2015), among others.

With much evidence of debate and application, the works of De Noble et al. (1999), who present the *Entrepreneurial Self-Efficacy Scale* (ESE, for its acronym in English), and

from the same work team (Ehrlich et al., 2005), the *Corporate Entrepreneurial Self-Efficacy Scale* (EESC, for its acronym in English); Likewise, its versions in Spanish, proposed by Moriano et al (2006) and Moriano et al. (2012), respectively.

On the other hand, authors such as Ugalde (2013), who proposes intellectual capital as a characteristic of the entrepreneur, Rodríguez (2015), who studies entrepreneurial intention in the public scientific field, Cardozo (2010), with the role of motivation in the entrepreneurship, López (2008), who evaluates the influence of the entrepreneur on corporate entrepreneurship, and Martínez (2008), who analyzes entrepreneurial skills in students, among others, have addressed the topic at the doctoral level.

The results of this research project include a profile of the entrepreneurial capabilities of the student at the University of Sonora, and that would eventually allow the development of university policies within the framework of curricular design, profile of the graduate, among other aspects. Likewise, it would allow the University to contribute to the development of government policies.

METHODOLOGICAL DESIGN

INVESTIGATION STRUCTURE

OBJECTIVE

Characterize the profile of the entrepreneurship capacity of the students of the University of Sonora by reviewing the state of knowledge on the topic of entrepreneurship in Mexico. Assess an instrument to measure your entrepreneurial capacity and thus be able to identify the factors that determine said capacity through determining the validity and reliability of the ENTREPRENEURIAL CAPACITY PROFILE instrument (e20 PROFILE) used in this research.

PROBLEM STATEMENT

This work requires determining the need to thoroughly study the entrepreneurship characteristics of young university students to promote development-oriented policies that support productive activities, the creation of decent jobs, entrepreneurship, creativity and innovation, and promote the formalization and growth of micro, small and medium-sized enterprises, including through access to financial services.

INVESTIGATION QUESTIONS

What entrepreneurial characteristics do university students possess?

How can you know the entrepreneurial skills and abilities of the students of the University of Sonora?

Hypothesis:

The entrepreneurship capacity of young university students is positive, derived from the good training and quality of services provided by the University of Sonora in the training provided to them.

VARIABLES

Dependent:

Entrepreneurship capabilities

Independent:

The quality of the services provided by the University of Sonora in its training.

Moderator:

The effectiveness of the services and training provided by the University of Sonora.

JUSTIFICATION

Entrepreneurship has been approached from university research from multiple approaches. In recent years, several researchers have asked questions about the orientation and characteristics of entrepreneurship research, as a new area of knowledge that is

gradually gaining more importance in the academic world.

The results of this research project include a profile of the entrepreneurial capabilities of the student at the University of Sonora, and that would eventually allow the development of university policies within the framework of curricular design, profile of the graduate, among other aspects. Likewise, it would allow the University to contribute to the development of government policies.

SAMPLE SIZE AND DESCRIPTIVE STATISTICS

The population object of this study is made up of a universe of 5th grade students. Semester onwards of the University of Sonora North Unit, with around 600 students, from here the sample size of 235 student surveys was determined, which resulted in simple random sampling, which were randomly distributed in the North Regional Unit. This sample size has a confidence level of 95% and an estimated error of 5%, used for validity conditions when the parameter estimator has normal behavior (Barón and Téllez, 2004). Once the students were selected, they were surveyed. In this type of sampling, all subjects in the population have the same probability of being selected.

INSTRUMENT USED

In this study, an adaptation of the Entrepreneurial Self-Efficacy Scale (ESE) instrument proposed by Moriano, Palací and Morales, (2006) has been used, who adapted and validated it. It was developed at San Diego State University (SDSU) by professors Alex De Noble, Don Jung and Sanford Ehrlich (1999). These authors identified six dimensions that included the main tasks that an entrepreneur must develop to successfully create his or her own company.

The instrument used here has been the Entrepreneurial Self-Efficacy, ESE, but complemented with the contributions of the different authors mentioned and cited in the literary review of this document, so it has been complemented and adapted to the Mexican context. The instrument obtained has been called Entrepreneurial Capacity Profile (e20 PROFILE) and consists of 35 main items and 3 complementary global items for a more in-depth analysis (ANNEX 1). The results are expected to conform to the Dimensions of the instrument adapted to Spanish, which are the following:

ESE SCALE FACTORS

- 1) Develop new products and market opportunities. It refers to a set of skills related to opportunity recognition. The entrepreneur must believe in his creative capacity to discover opportunities that allow him to develop his products or services, and adapt to market changes. In fact, opportunity recognition is a key dimension pointed out by different authors in research on entrepreneurs (Chell, 2000; Chen et al., 1998; KruegerJR, Reilly and Carsrud, 2000).
- 2) Build an innovative environment. This dimension focuses on the individual's ability to stimulate the creativity, initiative and responsibility of the people who work with him. Therefore, the entrepreneur must believe in his ability to build an environment from scratch that favors innovation. This factor of the ESE scale is related to the "risk taking and innovation" dimension found by Chen et al. (1998).
- 3) Start relationships with investors. Entrepreneurs must use their social networks and establish contacts that allow them to obtain the necessary

resources to create their own company (Ehrlich, De Noble, Moore and Weaver, 1994). When the process of creating a new company begins, the entrepreneur must believe himself to be effective in carrying out this series of activities that can consume most of his time.

4) Define the central objective of the business. This dimension is fundamental because if a person believes himself incapable of establishing the main purpose of his business, then it is unlikely that he will feel motivated to start his own business adventure.

5) Face unexpected changes. It refers to the belief about the ability to work under uncertainty. Entering the world of business creation, leaving behind the comfort of working as an employee in an established company, requires a tolerance for ambiguity and adaptation to change.

6) Develop key human resources. It represents the belief in one's ability to attract and retain individuals who are key in the creation of a new company. Furthermore, it is essential that the entrepreneur recognizes the importance of involving others in the process of creating their company.

In section I of the instrument, a two-column format is used: The first contains the items with the entrepreneurship characteristics; the second dedicated to determining the degree of compliance with each item. Section II uses the same two-column format and focuses on security, feasibility, and entrepreneurial intention.

When analyzing the results, each of its dimensions are considered as continuous variables, and the subjects' scores are classified using a value system for each scale (Maneiro, Mejías, Romero and Serpa, 2008), (Table 1).

In this work, a Likert scale with five

response possibilities (from 1 to 5) has been applied, so the previous ranges to evaluate the level of the dimensions have been recalculated for this type of scale, respecting the percentile system for the Likert Scale proposed by Maneiro, Mejías, Romero and Serpa, (2008) and restated by Vega-Robles et al. (2014).

For this case, the averages of the instrument values that fall in values less than 1.79 are considered *Totally agree*. Averages greater than 1.79 and less than or equal to 2.59 are *considered Agree*. The averages that fall between 2.591 and 3.39 are considered *neither Agree nor Disagree*, the averages of the dimensions that fall between 3.391 and 4.19 are considered *Agree* and, finally, the averages that exceed At 4.21 to 5, they are considered *Completely Agree* to be able to be entrepreneurs.

To determine the level of customer satisfaction through the service received, the table referring to this scale is presented (see Table 1).

| Likert scale | | % Compliance |
|--------------|----------------------------|--------------|
| 1,00 to 1,79 | Totally Disagree | 20,0 to 35,9 |
| 1,80 to 2,59 | In disagreement | 36,0 to 51,9 |
| 2,60 to 3,39 | Neither disagree nor agree | 52,0 to 67,9 |
| 3,40 to 4,19 | Accordingly | 68,0 to 83,9 |
| 4,20 to 5,00 | Completely agree | 84,0 to 100 |

Table 1: Likert score for surveys administered to students.

VALIDATION OF THE MEASURING INSTRUMENT

DeNoble et al. (1999), present the Entrepreneurial Self-Efficacy Scale (ESE), likewise, its Spanish version was proposed by Moriano et al. (2006). All of them, together with Martínez (2008), who analyzes entrepreneurial skills in students, among others, have discussed the topic at a doctoral level.

To use this Entrepreneurship Characteristics instrument, it is first necessary to corroborate the reliability of the instrument overall.

The objective of reliability analysis is to determine that a set of elements (items) of a scale can lead to results that are highly correlated with the results that would be obtained if the test were repeated. That is, it consists of achieving a scale that leads to similar results when different people administer it and when they use alternative forms of the test (Merino and Lautenschlager, 2003).

To determine reliability there are different ways to do it, the most common is to use Cronbach's Alpha, which is oriented towards the internal consistency of a test, for values less than 0.6 it is considered low reliability, between 0.6 and 0.8 is acceptable and above 0.8 is excellent (Caetano and Nuno, 2003).

According to Carretero and Pérez (2005), Cronbach's Alpha coefficient is directly proportional to the number of questions, this means that it increases the greater the number of items considered. This is why, when subjecting each of the six dimensions to the reliability analysis, the coefficients usually give below 0.8, which makes them look like they are not valid enough, where validity is already seen is when The 35 questions are considered globally.

Once the Entrepreneurial Capacity Profile instrument has been applied, it is necessary to carry out periodic evaluations to know if the entrepreneurial capacities respond effectively to the training needs of the students. At the same time, during this process, the weaknesses, opportunities, strengths and threats can be identified. the academic and professional training of these students. The importance of this study is that the information generated can allow the University of Sonora to consider the development of university policies within the framework of curricular design, graduate

profile, among other aspects. Likewise, it would allow the University to contribute to the development of government policies and this research will also generate knowledge when compared with other institutions in other parts of Mexico.

PROCEDURE

Data analysis was carried out using the SPSS 23 statistical package for Windows. The Principal Components method with Varimax rotation was used to extract factors, and those factors with an *eigenvalue* greater than 1 were retained (Kaiser, 1960;

Tabachnik and Fidell, 2007). Before carrying out the factor analysis (FA), compliance with certain criteria was reviewed to meet its viability.

The determinant of the correlation matrix obtained a value of 0.0000001744. Bartlett's test of sphericity was significant, the KMO sample adequacy test gave a value of 0.917, the reliability of the instrument was 0.942 and the detailed Kolmogorov-Smirnov Normality test was significant for all items. These results indicate that it is valid to carry out a factor analysis of the correlation matrix (Tabachnick and Fidell, 2007; Hair et al. 2010) and that the instrument is very reliable. Hair et al. (2010) suggests that for a factor loading to be considered significant, its value must not be less than 0.45 (this is equivalent to $n=150$). On the other hand, Morales (2011) suggests that a factor loading of 0.25 (equivalent to $n=400$) can already be considered significant, although both recognize that it depends greatly on the empirical experience of the researcher and the theoretical support of the construct. In the case of this study, since $n=235$, then the significance cut-off point for a factor loading is equal to or greater than 0.38. To achieve greater consistency, 0.4 and above were chosen as significant loadings.

RESULTS

In the present study, the Cronbach's Alpha reliability level was equal to 0.942, which is considered very acceptable in studies referring to the social sciences. With this indicator, the application of the instrument shows a very good level of reliability.

Factor analysis (FA) has been applied to present the results obtained to provide quantitative support that allows obtaining an objective measure of the entrepreneurship characteristics of the students and identifying the factors that can be considered most important when analyzing these characteristics. The mentioned analysis has been carried out using the principal components analysis technique, with which the data have been synthesized and can be related to each other, obtaining the main characteristics that define the dimensional structure of the construct that must be included in the measurement analysis (see Table 2).

The AF yielded an arrangement of 8 factors, but to bring this result closer to the theoretical dimensions of the authors of this measurement instrument, the authors of this work, in an effort to bring the factorial arrangement obtained closer to the theoretical dimensional arrangement of the construct of six Dimensions already described in this work, have chosen to repeat the factor analysis for 7 and 6 factors to study the variation of the statistical parameters and apply the Principle of Parsimony (López and Baniandrés, (2013)), seeking to obtain a model simpler, with fewer dimensions but that also faithfully represents the data analyzed. The results obtained are summarized in Table 2 and the factorial arrangement obtained is presented in Table 3.

When obtaining the initial factorial arrangement with eight factors, it was observed that the variables P7, P24, P27, P31 and P34 were ambiguous since their eigenvalues were very close in more than one Factor

with differences less than 0.1, so these were eliminated. variables, carrying out the factor analysis again, but now for the remaining 30 variables. From the AF of seven factors, it was observed that the variables P4, P12, P24, P31 and P34 were also ambiguous for the same reason already described, and from the AF for six factors, ambiguity was also observed in the variables P4, P8, P9, P12, P17., P23, P29 and P32, so these variables were eliminated, and the AF was carried out again for both cases with 30 and 27 variables respectively. The results of all cases are presented in Table 2. The factorial arrangement for six factors is presented in Table 3.

Due to the Principle of Parsimony already explained before and seeking greater simplicity in the arrangement obtained, the factorial arrangement of six factors and 27 variables was chosen as an acceptable result, since the differences with the original arrangement of eight factors and 35 variables are not significant. : the value of the Determinant is still very close to zero, the Total Explained Variance only drops from 59.039% to 55.854%, a decrease of only 3.18%, the value of KMO only decreases from 0.917 to 0.916 and the alpha of Cronbach only decreases from 0.942 to 0.923, these being very high values and appropriate for an analysis of this type. (Kaiser, 1960; Tabachnik and Fidell, 2007; Hair et al. 2010).

As a result of the accepted Factor Analysis, the arrangement of the Factors that Determine the Entrepreneurship Capacity of a Student was obtained. See Table 4.

PARTIAL CONCLUSIONS

The ENTREPRENEURIAL ABILITY PROFILE instrument (e20 PROFILE) was applied to a sample of 235 5th grade students. Semester onwards of the University of Sonora North Unit. The required tests were carried out to consider a factor analysis valid, and

| Factor Analysis With Variable Reduction | Result Total Variance Explained | Determinant | KMO | Cronbach's alpha |
|---|---------------------------------|--------------|-------|------------------|
| With 35 Variables | 8 Factors and VTE = 59.039% | 0,0000001744 | 0,917 | 0,942 |
| With 35 Variables | 7 Factors and VTE = 56.096% | 0,0000001744 | 0,917 | 0,942 |
| With 35 Variables | 6 Factors and VTE = 52.950% | 0,0000001744 | 0,917 | 0,942 |
| Results with 6 Dim and 35 Items without P4, P8, P9, P12, P17, P23, P29 and P32 (27 variables) | 6 Factors and VTE = 55.854% | 0,0000359 | 0,916 | 0,923 |
| Results 7 Dim and 35 Items without P4, P12, P24, P31 and P34 (30 Variables) | 7 Factors and VTE = 58.669% | 0,000003966 | 0,914 | 0,932 |
| Results 8 Dim and 35 Items without P7, P24, P27, P31 and P34 (30 Variables) | 7 Factors and VTE = 58.638% | 0,000004398 | 0,914 | 0,932 |

Table 2: Results of the different Factor Analyzes carried out.

Source: Own elaboration with SPSS results.

| | |
|-----|---|
| P15 | I like to achieve the goals I set for myself |
| P7 | I am confident in my abilities and possibilities |
| P31 | I usually keep commitments to finish a job |
| P30 | I consider myself good at the job I do. |
| P6 | I like to take responsibilities |
| P14 | I like having decision-making capacity |
| P35 | You usually meet the deadlines you set for doing work |
| P20 | I consider myself an ambitious person |
| P26 | I consider myself a motivated person |
| P24 | I like challenges |
| P33 | I feel my adventurous spirit |
| P22 | Finding solutions to problems |
| P19 | I find it easy to assign tasks to others |
| P13 | If I need help, I ask for it. |
| P11 | For me it is important to have autonomy in my work |
| P27 | If work requires it, I am capable of sacrificing my free time |
| P25 | I am good at managing financial resources |
| P21 | I am willing to take risks |
| P20 | I consider myself an ambitious person |
| P34 | If there is something that "there is no way to do", I find that way |
| P16 | I consider myself a creative person |
| P5 | I am an intuitive person |
| P3 | I adapt easily to changes |
| P1 | I consider myself an entrepreneurial person |
| P28 | I have ease of communication |
| P2 | I am a person with a positive attitude |
| P18 | I consider myself an optimistic person |

Table 4: Factors that determine the Entrepreneurship Capacity of a Student.

these tests were valid with a determinant of 0.0000001744. Bartlett's test of sphericity was significant, the KMO sample adequacy test was 0.917, the reliability of the instrument was 0.942 and the Kolmogorov-Smirnov Normality test was significant for all items and the Cronbach's Alpha reliability level was equal to 0.942. In the case of this study, since $n=235$, then the significance cut-off point for a significant factor loading is equal to or greater than 0.38.

The factor analysis yielded an arrangement of eight factors that deviates from the construct theory of this instrument to measure Entrepreneurship. This analysis was repeated to obtain seven and six factors and thus obtain values and be able to make a comparison regarding the Total Explained

Variance (VTE), its Determinant, its KMO and its Cronbach's Alpha. When analyzing the result with six dimensions, it could be seen that the variables P4, P8, P9, P12, P17, P23, P28 and P32 were very ambiguous since their eigenvalues fell in more than one factor, so they were eliminated, in accordance with the Principle of Parsimony and seeking to obtain simplicity of description and calculation. The number of variables decreased from 35 to 27. This factorial arrangement was chosen since its VTE was 55.854%, the value of the Determinant 0000.359, KMO= 0.916 and with a reliability of 0.923; all these values considered very good for experimentation.

The next step is to identify the Dimensions of this Construct according to the grouping of the variables in each dimension.

REFERENCES

- Alcaráz, R. y Villasana, M. (2015). Construcción y validación de un instrumento para medir competencias emprendedoras. XIX Congreso Internacional de Investigación en Ciencias Administrativas: Gestión de las Organizaciones rumbo al 3er milenio "de la Regionalización a la Globalización", pp. 1-31. Academia de Ciencias Administrativas ACACIA, México.
- Bruyat, C. and Julien, P.A. (2000). Defining the Field of Research in Entrepreneurship. *Journal of Business Venturing*, Vol. 16, No.2, pp.165-80.
- Busenitz, L., West, G., Shepherd, D., Nelson, T., Chandler, G., and Zacharakis, A. (2003). Entrepreneurship Research in Emergence: Past Trends and Future Directions. *Journal of Management*. 29(3) 285–308. DOI: 10.1016/S0149-2063_03_00013-8.
- Cabana-Villca, R.; Cortes-Castillo, I.; Plaza-Pasten, D.; Castillo-Vergara, M. y Alvarez-Marin, A. (2013). Análisis de Las Capacidades Emprendedoras Potenciales y Efectivas en Alumnos de Centros de Educación Superior. *Journal of Technology, Management & Innovation*, Vol. 8, No. 1, pp. 65-75.
- Caetano, A. y Gonzalo, N. (2003). Marketing en los servicios de educación modelos de percepción de calidad. Tesis Doctoral Universidad Complutense de Madrid, Facultad de Ciencias Económicas y Empresariales, Departamento de Comercialización e Investigación de Mercados.
- Campos, R.; Figueroa, G. y Sandoval, M. (2011). Medición de las habilidades emprendedoras: base para mejorar el programa de desarrollo emprendedor. XV Congreso internacional sobre innovaciones en docencia e investigación en ciencias económico administrativas. Chihuahua, Chihuahua, 5, 6 y 7 de septiembre de 2012.
- Cardozo, A. (2010). La motivación para emprender. Evolución del modelo de rol en emprendedores argentinos. Tesis Doctoral. Universidad Nacional de Educación a Distancia, España.
- Carretero-Dios, H. Pérez, C. (2005). Normas para el desarrollo y revisión de estudios instrumentales. *International Journal of Clinical and Health Psychology*. Vol. 5, No. 3, pp. 521-551 [Fecha de consulta: 31 de julio de 2019] Disponible en: <http://www.redalyc.org/articulo.oa?id=33705307> ISSN 1697-2600.
- Castillo, A. (1999). Estado del arte en la enseñanza del emprendimiento. Programa Emprendedores como creadores de riqueza y desarrollo regional Intec. Chile: Intec.

- Chell, E. 2000. "Towards researching the "opportunistic entrepreneur": A social constructionist approach and research agenda." *European Journal of Work & Organizational Psychology* 9(1):63-80.
- Chen, C., Green, P. and Crick, A. (1998). Does Entrepreneurial Self-efficacy Distinguish Entrepreneurs from Managers? *Journal of Business Venturing*, 13, 295-316.
- Cooper, D. R., & Schindler, P. S. (2003). *Business research methods*. 8th ed. Boston, Mass.: McGraw-Hill/Irwin.
- Denoble, A., Jung, D. & Ehrlich, S. (1999). Entrepreneurial self-efficacy: The development of a measure and its relationship to entrepreneurial actions. Trabajo presentado en el *Frontiers of Entrepreneurship Research*, Waltham.
- Ehrlich, S., De Noble, A., Moore, T. y Weaver, R. (1994). After the cash arrives: A comparative study of venture capital and private investor involvement in entrepreneurial firms. *Journal of Business Venturing*, 9, 67-82.
- Ehrlich, S., De Noble, A. y Singh, J. (2005). Corporate Entrepreneurial Self-Efficacy: Toward the Development of a Domain-Specific Measure. Paper pre-sented at the *Frontiers of Entrepreneurship Research*, Babson.
- Fernández, A. (2015). Informe GEM España 2014. España: Universidad de Cantabria.
- González, R. y Zúñiga, A. (2011). Método CEPCES para la Evaluación del Potencial Emprendedor. *Journal of Technology, Management & Innovation*, Vol. 7, No. 1, pp. 77-99.
- Guzmán V., y Trujillo, D. (2008). Emprendimiento social – revisión de literatura. *Estudios gerenciales*. 24 (109), 105-125.
- Hair, J., Anderson, R., Tatham, R. y Black, W. (2010). *Análisis Multivariante*. 5ta. Ed. Madrid: Ed. Pearson Prentice-Hall.
- Herrera, C. y Montoya, L. (2013). El emprendedor: una aproximación a su definición y caracterización. *Punto de vista*, Vol. 4, No. 7, pp. 7-30.
- Hidalgo, G.; Kamiya, M. y Reyes, M. (2014). Emprendimientos dinámicos en América Latina. Avances en prácticas y políticas. Serie Políticas Públicas y Transformación Productiva, N°16. Corporación Andina de Fomento / Banco de Desarrollo de América Latina.
- Hisrich, R., Peters, M., & Shepherd, D. (2005). *Entrepreneurship* (Sexta ed.). México: Mc Graw Hill 2005. ISBN: 9780072873740
- Hisrich, R., Langan-Fox J., & Grant, S. (2007). *Entrepreneurship Research and Practice: A Call to Action for Psychology*. *American Psychologist*. Vol. 62, No. 6. pp. 575-589. DOI: 10.1037/0003-066X.62.6.575.
- Kaiser, H. (1960). The application of electronic computers to analysis factorial. *Educational and Psychological Measurement*, 20, 141-151.
- Karmarkar, Y., Chabra, M., and Desphande, A. (2014). Entrepreneurial Leadership Style(s): A Taxonomic Review. *Annual Research Journal of Symbiosis Centre for Management Studies*. 2(1), 156-189.
- Krueger Jr, N., Reilly, M., & Carsrud, A. (2000). Competing models of entrepreneurial intentions. *Journal of business Venturing*, 15(5), 411-432.
- Lanero, A., Sánchez, J., Villanueva, J., y D'Almeida, M. (2007). La perspectiva cognitiva en el proceso emprendedor. Guillén C. & R. Guil (Coords.), *X Congreso Nacional de Psicología Social: Un Encuentro de Perspectivas* (Vol. 2, pp. 1594-1604). Cádiz, Spain: University of Cádiz.
- Lanero, A.; Vázquez, J.; Gutiérrez, P. y García, M. [2011]. Evaluación de la conducta emprendedora en estudiantes universitarios. Implicaciones para el diseño de programas académicos. *Pecunia*, No. 12, pp. 219-243.

Lanzas, V.; Lanzas, F. y Lanzas, A. (2009). Propuesta para medir el perfil de los emprendedores de base tecnológica. *Scientia et Technica*, Año XV, No. 43, pp. 267-272.

Leitch, C., & Volery, T. (2017). Entrepreneurial leadership: Insights and directions. *International Small Business Journal*, 35 (2), 147-156.

Leiva, J. (2008). ¿Nacen empresas de las actividades de fomento al espíritu emprendedor?: un vistazo a empresas surgidas del Concurso Nacional de Emprendedores y el Programa de Formación en Espíritu Emprendedor del Instituto Tecnológico de Costa Rica. *Tec Empresarial*, ISSN-e 1659-3359, Vol. 2, N°. 1, 2008, pp. 16-27.

López, C. (2008). Influencia del comportamiento emprendedor de los mandos medios en el fomento del Corporate Entrepreneurship. Tesis Doctoral. Universitat Ramon Llull, España.

López, C., y Baniandrés, N. (2013). El principio de parsimonia en la ciencia cognitiva actual: Riesgos y soluciones. *Ciencia Cognitiva*, 7:2, 28-30. Recuperado de <http://www.cienciacognitiva.org/files/2013-10.pdf>

Low, M. (2001). The Adolescence of Entrepreneurship Research: Specification of Purpose. *Columbia Business School*. Volume: 25 issue: 4, page(s): 17-26. <https://doi.org/10.1177/104225870102500402>

Maneiro, N.; Mejías, M.; Romero, M. y Zerpa, J. (2008) Evaluación de la Calidad de los Servicios, una Experiencia en la Educación Superior Venezolana. *EDUCERE*, Vol. 12, No. 43, pp. 797-804.

Matiz, F. (2009). Investigación en emprendimiento, un reto para la construcción de conocimiento. *Revista EAN*, No. 66, pp. 169-182.

Martínez, F. (2008). Análisis de competencias emprendedoras del alumnado de las escuelas taller y casa de oficio en Andalucía. Primera fase del diseño de programas educativos para el desarrollo de la cultura emprendedora entre los jóvenes. Tesis Doctoral. Universidad de Granada, España.

Merino, César. & Lautenschlager, Gary. (2003). Comparación estadística de la confiabilidad alfa de Cronbach: Aplicaciones en la medición educacional y psicológica. *Revista de Psicología – Universidad de Chile*, 12(2), 129 – 139.

Merino, M. y Vargas, D. (2011). Evaluación comparativa del potencial emprendedor de Latinoamérica: una perspectiva multinivel. *Academia, Revista Latinoamericana de Administración*, No. 46, pp. 38-54.

Moriano, J.; Sánchez, M. y Palací, F. (2004). Un estudio descriptivo sobre los emprendedores en España, la República Checa y Bulgaria (cap. 10). En “Congreso El emprendedor innovador y la creación de empresas de I+D+I”, capítulo 10, pp. 161-178. Universidad de Valencia: Valencia, España.

Moriano, J.; Palací, F. y Morales, J. (2006). Adaptación y validación en España de la escala de Autoeficacia Emprendedora. *Revista de Psicología Social*, Vol. 21, No.1, pp. 51-64.

Moriano, J.; Topa, G.; Molero, F.; Entenza, A. y Lévy-Mangin, J. (2012). Autoeficacia para el Liderazgo Emprendedor. Adaptación y Validación de la Escala CESE en España. *Anales de psicología*, Vol. 28, No. 1, pp. 171-179.

Murillo, E. y Santillán, L. (2015). Revisión de las Investigaciones sobre teoría y práctica del Emprendimiento. Posibilidades del Monitor Global de Emprendimiento (MGE). *Revista Publicando*, Vol. 2, No. 5, pp. 285-299.

Naciones Unidas (2016). Agenda 2030 y los Objetivos de Desarrollo Sostenible. Una oportunidad para América Latina y el Caribe. Santiago. CEPAL/UN.

Nicolás, C. y Rubio, A. (2012). El emprendimiento social: una comparativa entre España y países sudamericanos. *Revista FIR, FAEDPYME International Review*, Vol. 1, No. 1, pp. 38-49.

Pérez, A y Torralba, A. (2015). Medición del emprendedurismo en el municipio de Puebla: Diagnóstico para el desarrollo empresarial. *Tec Empresarial*, Vol. 9, No. 1, pp. 19-30.

- Renko, M., El Tarabishy, A., Carsrud, A., Brännback, M. (2013). Understanding and measuring entrepreneurial leadership style. *Journal of Small Business Management*. Vol.53, No. 1. pp 54–74. <https://doi.org/10.1111/jsbm.12086>
- Rodríguez, D. y Gómez, A. (2014). Las competencias emprendedoras en el departamento de Boyacá. *Apuntes del CENES*, Vol. 33, No. 58, pp. 217-242.
- Rodríguez, F. (2015). Estudio de la intensión emprendedora en el ámbito científico público. El caso de las ciencias de la vida en España. Tesis Doctoral. Universidad de Valencia, España.
- Salvador, C. (2009). Ecuaciones estructurales como modelos predictivos de la autoeficacia emprendedora en una muestra de jóvenes mexicanos y españoles. *Apuntes de Psicología*, Vol. 27, número 1, pp. 65-78.
- Sánchez, J.; Lanero, J. y Yurrebaso, A. (2005). Variables determinantes de la intención emprendedora en el contexto universitario. *Revista de Psicología Social Aplicada*, Vol. 15, nº 1, pp. 37-60.
- Shane, S. y Venkataraman, S. (2000). The Promise of Entrepreneurship as a Field of Research. *Academy of Management Review*, 25 (1), 217-226.
- Tabachnick, B. y Fidell, L. (2007). *Using multivariate statistics*. 5th Edition. Boston: Harper Collins.
- Tinoco, O. (2008). Medición de la Capacidad Emprendedora de ingresantes a la Facultad de Ingeniería Industrial de la UNMSM. *Revista de la Facultad de Ingeniería Industrial*, Vol. 11, No. 2, pp 18-23.
- Ugalde, N. (2013). Capital intelectual, características del emprendedor e innovación. El caso de las MIPYMES Costarricenses. Tesis Doctoral. Universidad de Valencia, España.
- VECIANA, J. (1999) “Creación de Empresas como programa de investigación Científica” *Revista Europea de Dirección y Economía de la Empresa*, Vol. 8, No. 3. pp 11-36.
- Vega, R., Cadena, J., Mejías., A. y Guzmán, R. (2014). Análisis de la calidad de los servicios académicos: caso de estudio Ingeniería Industrial y de Sistemas Campus Caborca, Universidad de Sonora, México. *Memorias del VII Simposio Internacional de Ingeniería Industrial: Actualidad y Nuevas Tendencias 2014*. Universidad Nacional Mayor de San Marcos Lima, Perú 2014. ISSN 1856-8343.
- Wiklund, J., Davidsson, P., Audretsch, D. & Karlsson, C. (2011). The Future of Entrepreneurship Research. *Entrepreneurship Theory and Practice*. Volume: 35 issue: 1, page(s): 1-9. <https://doi.org/10.1111/j.1540-6520.2010.00420.x>
- Zahra, S., Sapienza, H. & Davidsson, P. (2006) ‘Entrepreneurship and dynamic capabilities: a review, model and research agenda’, *Journal of Management Studies*, 43: 917–955.