

# Learning Strategies and Entrepreneurial Attitudes: A Predictive Model of Entrepreneurship Intention in Peruvian Undergraduate Students

Estrategias de aprendizaje y actitudes emprendedoras: un modelo predictivo  
de la intención emprendedora en estudiantes universitarios peruanos

Estratégias de aprendizagem e atitudes empreendedoras: um modelo preditivo  
de intenção empreendedora em estudantes universitários peruanos

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## Abstract

This study aims to empirically test how learning strategies would fit into an undergraduate entrepreneur's profile. The design is cross-sectional with a sample of 527 Peruvian undergraduate students. A structural equation model was specified, estimated, and tested

in Mplus 8.4. The model hypothesized direct effects of the different learning strategies on a factor of entrepreneurial attitudes (considering proactivity, professional ethics, empathy, innovation, autonomy, and risk-taking dimensions) which, in turn, explained two indicators of entrepreneurship intention as outcomes.

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The tested structural model adequately fits the data. It provided helpful information on learning strategies and entrepreneurial attitudes accounting for up to 20% of variance of entrepreneurship intention. The learning strategies most related to entrepreneurial attitudes are those related to creativity, transference, and assessment of one's own performance. This paper provides for the first time evidence about the predictive power of several learning strategies on the entrepreneurial attitudes in connection with entrepreneurship intention (willingness and likelihood). This work increases our understanding of entrepreneurs' learning strategies, so that we can improve the design and implementation of educational resources to promote entrepreneurs' careers in emerging markets.

*Keywords:* Entrepreneurial attitudes; learning strategies; entrepreneurship intention; entrepreneurship education; university students; Peru.

## Resumen

Este estudio busca comprobar empíricamente cómo las estrategias de aprendizaje encajarían en el perfil de un emprendedor de pregrado. El diseño es transversal, con una muestra de 527 estudiantes peruanos de pregrado. Se especificó, estimó y probó un modelo de ecuaciones estructurales en Mplus 8.4. El modelo hipotetizó efectos directos de las diferentes estrategias de aprendizaje sobre un factor de actitudes emprendedoras (considerando las dimensiones de proactividad, ética profesional, empatía, innovación, autonomía y asunción de riesgos) que, a su vez, explicaban dos indicadores de intención emprendedora como resultados. El modelo estructural probado se ajusta adecuadamente a los datos. Proporcionó información útil sobre las estrategias de aprendizaje y las actitudes emprendedoras que explican hasta el 20% de la varianza de la intención emprendedora. Las estrategias de aprendizaje más relacionadas con las actitudes emprendedoras son las relacionadas con la creatividad, la transferencia y la evaluación del propio rendimiento. Esta investigación proporciona la primera evidencia acerca del poder predictivo de varias estrategias de aprendizaje sobre las actitudes emprendedoras, en relación con la intención empre-

dedora (voluntad y probabilidad). Asimismo, aumenta nuestra comprensión de las estrategias de aprendizaje de los emprendedores, de modo que podamos mejorar el diseño y la implementación de recursos educativos para promover las carreras de los emprendedores en los mercados emergentes.

*Palabras clave:* actitudes emprendedoras; estrategias de aprendizaje; intención emprendedora; educación emprendedora; estudiantes universitarios; Perú.

## Resumo

Este estudo teve como objetivo verificar empiricamente como as estratégias de aprendizagem se encaixariam no perfil de um empreendedor de graduação. O desenho é transversal com uma amostra de 527 estudantes de graduação peruanos. Um modelo de equação estrutural foi especificado, estimado e testado no Mplus 8.4. O modelo hipotetizou efeitos diretos das diferentes estratégias de aprendizagem sobre um fator de atitudes empreendedoras (considerando as dimensões de proatividade, ética profissional, empatia, inovação, autonomia e assunção de riscos) que, por sua vez, explicaram como resultados dois indicadores de intenção empreendedora. O modelo estrutural testado ajusta-se adequadamente aos dados. Forneceu informações úteis sobre estratégias de aprendizagem e atitudes empreendedoras que explicam até 20% da variância da intenção empreendedora. As estratégias de aprendizagem mais relacionadas com as atitudes empreendedoras são as relacionadas com a criatividade, a transferência e a avaliação do próprio desempenho. Este trabalho fornece a primeira evidência analisando o poder preditivo de várias estratégias de aprendizagem sobre as atitudes empreendedoras em relação à intenção empreendedora (vontade e probabilidade). Este trabalho aumenta nossa compreensão das estratégias de aprendizagem dos empreendedores para que possamos melhorar o desenho e a implementação de recursos educacionais para fomentar a carreira dos empreendedores em mercados emergentes.

*Palavras-chave:* atitudes empreendedoras; estratégias de aprendizagem; intenção empreendedora; educação empreendedora; estudantes universitários; Perú.

## Introduction

The study of entrepreneurial initiatives and entrepreneurs' characteristics has been a recurring topic for several decades in almost every area of country development, including political, social, or economic, and academic research. Business ventures are crucial for studying global, regional, and local economies, and they are the key to securing and sustaining global economic development (Fayolle et al., 2016; Raunelli et al., 2013; Serida et al., 2013). Indeed, entrepreneurship goes beyond mere business creation; however, it is a perspective of how business is conducted at every level and in every country (Kuratko, 2005).

One of the antecedents most widely studied in promoting entrepreneurship is entrepreneurial intention (Bae et al., 2014). Moriano et al. (2012) defined it as a conscious state of mind preceding the entrepreneurial behavior. This causal relation has been evidenced by a seminal longitudinal study carried out by Kautonen et al. (2015), among others (Figueiredo & Lyons, 2021; Gieure et al., 2020). Although the effectiveness of entrepreneurship education for the promotion of entrepreneurial intention has been deeply studied (Bae et al., 2014; Martin et al., 2013; Martínez-Gregorio et al., 2021), less is known about the underlying learning process and how learning strategies foster the entrepreneurial attitudes (Fayolle & Gailly, 2015; Wang & Chugh, 2014).

Learning strategies are defined as the set of mental processes to acquire, store, and use information; they are strategically goal-oriented and affect the decision-making of all psychological processes and activities (Beltrán, 1998, 2003; Gutiérrez, 2005). Knowing its mediating and purposeful presence in entrepreneurial intentions constitutes an interest in the field of teaching-learning.

Another study aimed at contributing to studying which learning strategies are related to entrepreneurial attitudes and, in turn, to entrepreneurial intention in the specific context of Peru. Global

Entrepreneurship Monitor (GEM) aims to monitor the wide variety of entrepreneurial activities existing between countries, the relationship between the rate of economic growth and entrepreneurial activity, and identify what makes a country entrepreneurial (Serida et al., 2013). Peru is currently the leader in climate for business in Latin America and leading, along with Chile and Guatemala, as the country with the highest economic growth. Peru is considered the fifth country with the highest number of early-stage ventures globally (Entrepreneurial Activity Rate, EAR 22.4%). In Latin America and the Caribbean, Peru is below Guatemala (EAR 27.5%) and Chile (EAR 25.1%) that hold first and second place, respectively, according to a study conducted by the GEM (Serida et al., 2020, p. 29).

Peru is the Latin American country with the most extraordinary diversity in the continent, both culturally and regarding natural resources; it has a population of 31 million (INEI, 2019). Its economy is based on the extraction and export of natural products such as minerals, agricultural products and fisheries. The percentage structure of the Gross Domestic Product (GDP) for economic activities shows that the extraction of oil, gas, minerals and related services represents 14.4%, manufacturing 16.5%, and agricultural and fisheries account for 6.7%. The GDP growth in 2019's first quarter was 2.3%, according to INEI statistical data, much of which was due to the evolution of extractive activities by 0.6% and service activities by 3.7%. With a 2.28% GDP growth in the first quarter, at the end of 2019, a 3.5% growth was expected according to the Banco Central de Reserva (BCR) and the perspectives of the International Monetary Fund in Latin America (García et al., 2019).

The entrepreneurs consulted by the GERA (2017/2018) posited entrepreneurship education at school and post-school stages as a primary entrepreneurial framework condition; that is, it is seen as an environmental feature expected to have a significant impact on the entrepreneurial attitudes and activities. Entrepreneurship can be

taught, and entrepreneurs are made, not born; as such, it is essential to study the entrepreneurial characteristics of undergraduate university students in order to encourage them to start up new business ventures.

With respect to the education that entrepreneurs have in Peru, 27.5%, who find entrepreneurship by opportunity, have a higher university education. It is known that there is a direct relationship between the number of entrepreneurs per business opportunity and the level of education they have (Serida et al., 2020). This figure is expected to continue increasing thanks to the investment in education that has already shown Peru's growth in the Pisa tests. From 2009 to 2015, a percentage increase of 7.58% has been noted in scientific competence; in reading competition, it increased by 7.57%, and in mathematical competition, it increased by 6.03% (Ministerio de Educación [ME], 2017).

The specific programs and interventions that aim to promote entrepreneurial competencies and venture creation have been called entrepreneurship education (Mwasalwiba, 2010; Pittaway & Cope, 2007). As has happened in general entrepreneurship research, within this particular area there has also been substantial growth during the last decades (Aparicio et al., 2019) with the development of several programs and courses for an "entrepreneurial" curricula (Sirelkhatim & Gangi, 2015) in a large and growing number of universities and colleges (Arias et al., 2018; Barba-Sánchez & Atienza-Sahuquillo, 2018; West et al., 2009). Nonetheless, when it comes to the study of entrepreneurs' learning process, most of the academic effort has been centered on teaching and pedagogical methods (for recent reviews, see Hägg & Gabrielsson, 2019; Nabi et al., 2017), but little has been done with regards to learning strategies (Wang & Chugh, 2014). Nevertheless, the fact is that how entrepreneurs learn is crucial for the increase of business-ventures emergence. By understanding entrepreneurs learning strategies, we can adequately invest our educational resources

to increase the supply of entrepreneurs in terms of quality and quantity (Harms, 2015; Martin et al., 2013).

## Literature Review

Some theoretical frameworks coexist in the literature to explain the entrepreneurial intention antecedents, including the Theory of Planned Behavior (TPB) (Ajzen, 1991) and the Entrepreneurial Event Model (EEM) (Shapero & Sokol, 1982). The TPB considers the attitudes towards entrepreneurship, perceived behavioral control and subjective norms as the antecedents (Ajzen, 1991; Liñán & Chen, 2009), while for the EEM, those are perceived desirability and perceived feasibility (Shapero & Sokol, 1982). Despite their differences, they are compatible (Liñán & Fayolle, 2015) because both explain the entrepreneurial intention as a result of a personal perception of the entrepreneurial process and the possibility of developing it effectively. The similarities between the models have been pointed out by some authors who tried to propose integrated models (e.g., Esfandiari et al., 2019; Schlaegel & Koenig, 2014). Furthermore, the consideration of the "subjective norm" by the TPB has been controversial because of its poor direct effect on entrepreneurial intention (Armitage & Conner, 2001; Barba-Sánchez et al., 2022; Heuer & Liñán, 2013).

Other constructs have been explored in the literature to build a more comprehensive explanation of entrepreneurial intention. The inclusion of the impact of the personality traits has been a prolific field of study (e.g., Munir et al., 2019; Sahin et al., 2019; Zhao et al., 2010), but also the entrepreneurial attitudes (e.g., Koe, 2016; Oliver et al., 2022; Rosique-Blasco et al., 2018). This construct derives from the study of the organizational orientation (Miller, 1983), which has also been named personal abilities (Rosique-Blasco et al., 2018) or entrepreneurial orientation (Bolton & Lane, 2012). All these names defined a set of

personal skills that influence business intentionality (Rosique-Blasco et al., 2018). Through this paper, we use the term entrepreneurial attitudes. Hermansen-Kobulnicky and Moss (2004) described the set of entrepreneurial attitudes considering proactivity, professional ethics, empathy, innovation, autonomy and risk-taking. In recent years, some studies have suggested that entrepreneurial attitudes are positively related to business performance (Bolton & Lane, 2012; Chien, 2014), but also, in an earlier stage, with entrepreneurial intention (Koe, 2016; Rosique-Blasco et al., 2018).

Less is known about the effect of learning strategies in developing these entrepreneurial attitudes. A seminal work in this arena was carried out by Benson Honig (2001). He studied four different learning strategies in a sample of 219 entrepreneurs: Random learning strategy, continual adjustment and assessment, research and development, and systematic strategy. He defined the first one as related to the discovery process and as based on the idea of a random component in the business venture, which is not suitable for directed, formal learning approaches. It was characterized as being used by more flexible and adaptive individuals but less for static environments. The continual adjustment and assessment represent adaptive and innovative strategies, and individuals who employ consensus, which is helpful for structured organizations, use it. Research and development strategy was thought to be the most central strategy to discovery and informed action, a learning characterized by curiosity and the search for information. Finally, the systematic strategy was used by individuals who were engaged in a deliberate, planned search for a new business venture but mainly focused on innovation and creation.

With Honig's (2001) definitions in mind, it is easy to find traditional learning strategies that would fit in an entrepreneur's strategies profile. Entrepreneurs would use learning strategies that allow them to be flexible, adaptive and in continual adjustment, including self-assessment and

context control (Fayena et al., 2020). They would also be in a continuous search of information, deeming necessary learning strategies related to the information process, such as knowledge of sources and information search, selection, elaboration, acquisition, or organization (Tsasis et al., 2013). In addition, they would need to do this in a planned but innovative and creative way, thus, having high levels of learning strategies such as planning, personalization and creativity.

Evidence on these hypotheses is limited to date and as far as we know. Thus, the aim of this study is to test the predictive power of several learning strategies on the entrepreneurial attitudes in connection with entrepreneurship intention (willingness and likelihood) of a sample of Peruvian undergraduate students. Consequently, the hypotheses are:

H1: Learning strategies will be positively related to entrepreneurial attitudes.

H2: Entrepreneurial attitudes will be positively related to entrepreneurship intention.

## **Methods**

### **Design and Procedure**

The present work follows a cross-sectional survey design with a convenience sample. The survey, which included socio-demographic issues and different instruments described below, was carried out at two universities in Peru: ESAN University (UESAN) —a private university in Lima— and the National University of Huancavelica (UNH) —a public university in the Huancavelica department (center-west of the country)—. For the sample size calculation, the population of both UESAN and UNH in the degrees of Accounting, Administration, Administration and Marketing, Economics, Consumer Psychology, Organizational Psychology, Administration and Finance, Industrial Engineering and Commercial Law was considered ( $N = 3.156$ ). With a confidence level of 95% and  $P = Q$ , and a

4% error, sample size estimation was  $n = 505$ , assuming simple random sampling. Some additional cases were gathered because of the classroom's composition ( $n = 527$ ).

The students completed the questionnaire on paper at the universities in 35 minutes, approximately. According to the human development index in Peru, the departments with the highest rates are Lima, Arequipa, and Moquegua. In contrast, the ones with the lowest index are Apurímac, Ayacucho, and Huancavelica (Ministerio de Educación, 2017).

Once the approval of the corresponding university authorities and ethical boards were reported, students were invited to participate, guaranteeing anonymity and confidentiality. The inclusion criteria were to have completed at least 50% of their university studies.

### Participants

Table 1 shows the sample's sociodemographic information. The total sample consisted of 527 stu-

dents, with 52.9% coming from UESAN and 47.1% from UNH. Of these 527, 57.9% were women. Age ranged between 19 and 20 years old (29.6%), 38.0% were between 21 and 22, 20.7% between 23 and 24, 8.2% between 25 and 30, and only 3.5% were over 30 years old. Finally, 28.7% studied Accounting, 18.4% Administration, 15.6% Administration and Marketing, 13.5% Economics. The rest studied Consumer Psychology, Organizational Psychology, Administration and Finance, Industrial Engineering or Commercial Law.

### Instruments

Together with the aforementioned demographic data, the survey included several indicators and scales related to learning strategies and entrepreneurship education:

- a. The Questionnaire for the Assessment of Learning Strategies in university students—CEVEAPEU, for its initials in Spanish, Cuestionario de

Table 1  
*Participants' characteristics*

Variables/categories	%	n
<b>University</b>		
UESAN	52.9	279
UNH	47.1	247
<b>Sex</b>		
Women	57.9	304
Men	42.1	221
Missing		2
<b>Age</b>		
19-20 years old	29.6	152
21-22 years old	38.0	195
23-24 years old	20.7	106
25-30 years old	8.2	42
Over 30 years old	3.5	18
Missing		14

Evaluación de Estrategias de Aprendizaje de los Estudiantes Universitarios— (Gargallo et al., 2009), which integrates affective and cognitive strategies. It consists of 88 items grouped into 25 subscales. The subscales for affective strategies are Intrinsic motivation (three items) ( $\alpha=.73$ ,  $\Omega=.73$ ); Extrinsic motivation (two items) ( $\alpha=.48$ ,  $\Omega=.48$ ); Task value (four items) ( $\alpha=.78$ ,  $\Omega=.78$ ); Internal attributions (three items) ( $\alpha=.61$ ,  $\Omega=.65$ ); External attributions (two items) ( $\alpha=.51$ ,  $\Omega=.51$ ); Self-efficacy and expectancies (four items) ( $\alpha=.77$ ,  $\Omega=.77$ ); Intelligence conception as modifiable (two items) ( $\alpha=.07$ ,  $\Omega=.07$ ); Physical and psychological state (four items) ( $\alpha=.50$ ,  $\Omega=.50$ ); Anxiety (four items) ( $\alpha=.56$ ,  $\Omega=.60$ ); Self-assessment (three items) ( $\alpha=.46$ ,  $\Omega=.47$ ); Objectives knowledge and evaluation criteria (two items) ( $\alpha=.57$ ,  $\Omega=.57$ ); Planning (four items) ( $\alpha=.68$ ,  $\Omega=.69$ ); Control/Self-regulation (seven items) ( $\alpha=.56$ ,  $\Omega=.61$ ); Context control (four items) ( $\alpha=.77$ ,  $\Omega=.78$ ), and Social interaction skills and colleagues work (six items) ( $\alpha=.74$ ,  $\Omega=.75$ ). The cognitive strategies are: Knowledge of sources and information search (four items) ( $\alpha=.72$ ,  $\Omega=.73$ ); Information selection (four items) ( $\alpha=.50$ ,  $\Omega=.53$ ); Information elaboration (four items) ( $\alpha=.65$ ,  $\Omega=.66$ ); Information acquisition (three items) ( $\alpha=.65$ ,  $\Omega=.66$ ); Information organization (five items) ( $\alpha=.79$ ,  $\Omega=.81$ ); Personalization and creativity (five items) ( $\alpha=.76$ ,  $\Omega=.76$ ); Storage of information, simple repetition (two items) ( $\alpha=.65$ ,  $\Omega=.65$ ); Storage of information, memorizing, use of mnemonics (three items) ( $\alpha=.71$ ,  $\Omega=.72$ ); Resource management to effectively use information (two items) ( $\alpha=.58$ ,  $\Omega=.58$ ), and Transference (three items) ( $\alpha=.71$ ,  $\Omega=.71$ ). All the items presented a 5-point Likert response scale. The sub-dimensions with reliability problems were excluded from the studied structural equation model.

b. Entrepreneurial Attitudes Scale for Students (EASS; Oliver & Galiana, 2015). In order to

provide information on entrepreneurial traits, participants completed the EASS, initially developed in Spanish and English, which showed good psychometric properties in the Peruvian population (Bilbao, 2017, Bustos, 2015;). The scale provides scores for six different dimensions of entrepreneurial attitudes: proactivity ( $\alpha=.71$ ,  $\Omega=.75$ ), professional ethics ( $\alpha=.74$ ,  $\Omega=.81$ ), empathy ( $\alpha=.79$ ,  $\Omega=.85$ ), innovation ( $\alpha=.86$ ,  $\Omega=.90$ ), autonomy ( $\alpha=.80$ ,  $\Omega=.90$ ), and risk-taking ( $\alpha=.77$ ,  $\Omega=.80$ ). Participants were asked to rate their agreement on a 1-to-7 scale for each item, where 1 indicated “strongly disagree” and 7 “strongly agree.”

c. Two indicators of Entrepreneurship Intention (EI) were evaluated using a Likert scale: Willingness “If choosing between having your own business and being employed by someone, what would you prefer?” —0 (I prefer to be employed by another) to 5 (I prefer to have my own business)—. The second indicator, Perceived Likelihood “How likely is it that you develop a career as self-employed?” scores from 0 (not likely) to 5 (very likely) (Bustos, 2015).

### Data Analyses

Data analyses were performed using SPSS 26 and Mplus 8.4. Statistical analyses included the study of reliability, assessed through Cronbach’s Alpha and Omega. They were considered adequate if greater than .7 (Hernández et al., 2016). The dimensions that did not meet this criterion were excluded from the structural equation model. Finally, a structural equation model with reflective indicators for predicting self-employment intention was performed. The multiple-indicators multiple-causes model (MIMIC model) was specified, estimated, and tested in the sample. The model shows the hypotheses stated in the previous section: a direct effect of learning strategies on entrepreneurial attitudes and these two indicators of entrepreneurial intention (Figure 1). The factor of entrepreneurial attitudes

had six indicators, the entrepreneurial attitudes posed by Oliver and Galiana (2015): proactivity, professional ethics, empathy, innovation, autonomy, and risk-taking.

The model plausibility was assessed using the currently most recommended fit criteria (Kline, 2015): (a) chi-square statistic; (b) the comparative fit index (CFI) of more than .90 (and, ideally, greater than .95); and (c) the root mean squared error of approximation (RMSEA) of .05 or less.

### Results

Figure 2 shows the MIMIC model. Results of the model pointed to an excellent overall fit:  $\chi^2(89)=150285$  ( $p < .001$ ), CFI=.967; RMSEA=.036 [.026, .046]. When the analytical fit was examined, the measurement showed that one factor did appropriately represent the six entrepreneurial

attitudes with statistically significant, positive and high factor loadings for each of them: .708 for proactivity, .737 for professional ethics, .713 for empathy, .817 for innovation, .804 for autonomy, and .704 for risk taking.

The predictive part showed that three learning strategies significantly predicted the entrepreneurial attitudes: information organization ( $\beta = .090$ ,  $p < .05$ ), personalization and creativity ( $\beta = .151$ ,  $p < .05$ ), and transference ( $\beta = .280$ ,  $p < .001$ ). The rest of the variables did not significantly impact entrepreneurial attitudes ( $p > .05$ ). Altogether, they explained 14.4% of the factor variance. Finally, the entrepreneurial attitudes factor explained both Entrepreneurship Intention indicators, Willingness ( $.369$ ,  $p < .001$ ) and Perceived Likelihood ( $.279$ ,  $p < .001$ ), with a correlation between them of  $r = .428$  ( $p < .001$ ). Entrepreneurial attitudes explained 13.6% of the variance of Willingness and 7.8% of Perceived Likelihood.

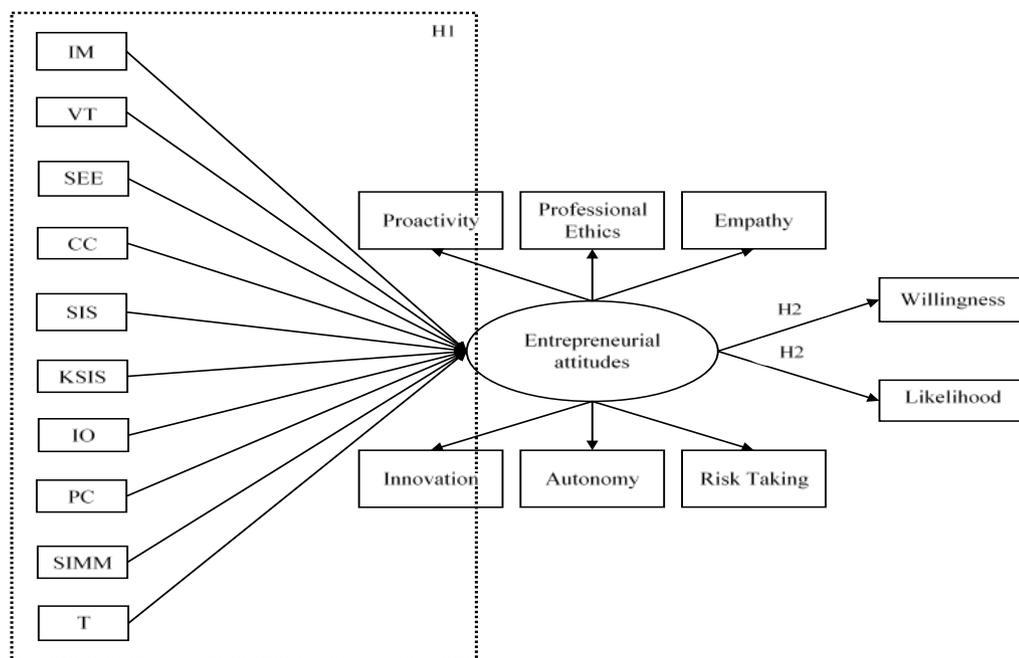


Figure 1. Effect of learning strategies on entrepreneurial attitudes and intentions

Notes. IM= Intrinsic motivation; VT = Task value; SEE = Self-efficacy and expectancies; CC = Context control; SIS = Social interaction skills and colleagues' work; KSIS = Knowledge of sources and information search; IO = Information organization; PC = Personalization and creativity; SIMM = Storage of information, memorizing, use of mnemonics; T = Transference.

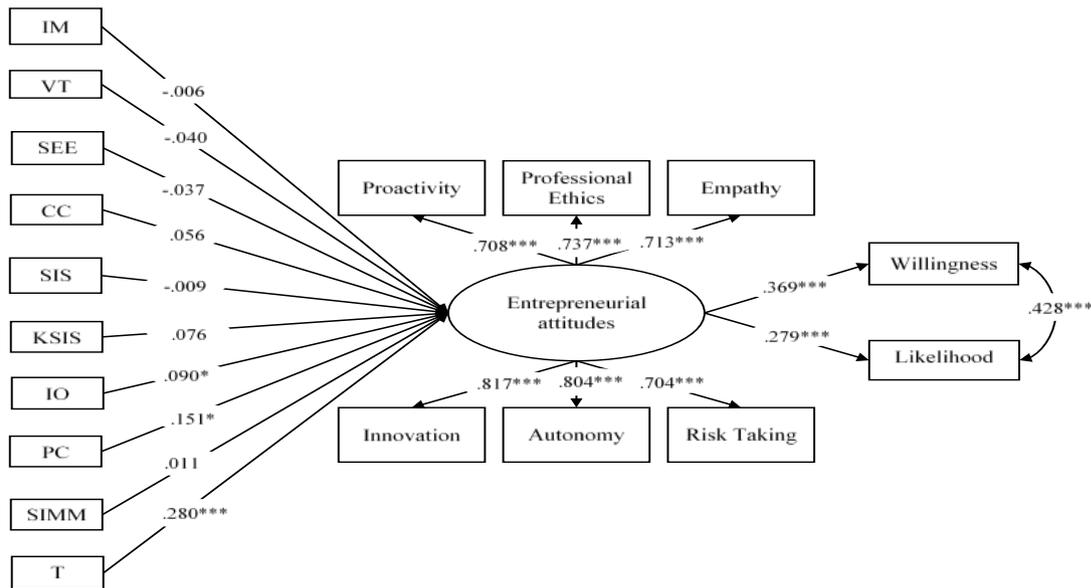


Figure 2. Structural equation model

Notes. IM= Intrinsic motivation; VT = Task value; SEE = Self-efficacy and expectancies; CC = Context control; SIS = Social interaction skills and colleagues' work; KSIS = Knowledge of sources and information search; IO = Information organization; PC = Personalization and creativity; SIMM = Storage of information, memorizing, use of mnemonics; T = Transference. \* $p < .05$ , \*\* $p < .01$ , \*\*\* $p < .001$ .

## Discussion

Previously reviewed research aimed at explaining entrepreneurship intention considered attitudes, perceived control, locus of internal control, risk propensity, personal values, self-efficacy, external and personal barriers, motivation, emotional intelligence, desirability, creativity, personal traits, stress tolerance and some personality factors from big five—conscientiousness, openness to experience, extraversion— (Ferreira et al., 2017). However, learning strategies, which could be a key factor for entrepreneurship education, have not been included in recent and extensive reviews that explain entrepreneurship in education (Ghulam et al., 2017, Liñán & Fayolle, 2015; Oliver & Galiana, 2015).

We found out to which extent entrepreneurship dimensions' reliability in Peru replicated the initial validation results in Spain (for a recent review, see Nabi et al., 2017). Current reliability results are slightly better, as for the original were .70 for proactivity, .72 for ethics, .78 for empathy, .87

for innovation, .85 autonomy and .63 risk-taking. To contribute to explain entrepreneurship in education, we studied the role of learning strategies in entrepreneurship attitudes and intention. Specifically, we tested a MIMIC model for that purpose, which perfectly fitted our data. Regarding the measurement part of the model, the different entrepreneurial attitudes were explained by one factor. This structure was tested for the first time, as previous research conceptualized entrepreneurial attitudes as related but different (Oliver & Galiana 2015). It is an interesting point, as it gives us a deeper understanding of attitudinal aspects of entrepreneurship: entrepreneurial attitudes are not watertight; neither individuals can present some of them in large numbers and none of the others. People interested in entrepreneurship have it holistically, with high scores in all the entrepreneurial attitudes.

As the predictive part of the model, our results pointed to a clear relationship between learning strategies and entrepreneurial attitudes. In fact, this relationship was found between three specific

learning strategies: information organization, personalization and creativity, and transference. Results are in line with Honig's (2001) model. Random, research and development strategies would significantly entrepreneurial attitudes with learning strategies based on personalization and creativity being positively related to entrepreneurial attitudes. Results did not offer evidence, however, of the role of the systematic learning strategy posed by Honig (2001). This finding could be due to the specificity of the context, undergraduate students who have not yet entered the labor market. Maybe this latest strategy, based on deliberate, planned search for business ventures, would be the clue for entrepreneurial attitudes in those "nascent" entrepreneurs, as in the case of Honig's (2001) study, but would be less important for future entrepreneurs, as in our sample.

Another crucial result to highlight is the role played in the model by transference. This strategy, not included in Honig's (2001) model, has shown an interesting pattern in current research. First, transference was the learning strategy with greater predictive power over entrepreneurial attitudes. Transference is essential for aspiring entrepreneurs, as evidenced by early entrepreneurship literature that noted the connection between scientific advancements and new ventures (Schumpeter, 1950).

### **Conclusion, limitations, and future research**

Taking results altogether, we conclude that the learning strategies more related to entrepreneurial attitudes are those close to creativity, transference and context control. Understanding the learning style leading to higher entrepreneurial attitudes is crucial for achieving efficiency in educational programs aiming to promote business ventures. By fostering these learning strategies, we could change the way students approach problems and

reality to obtain more and better entrepreneurs. Additionally, and from an educational point of view, this knowledge of students with higher entrepreneurial attitudes learning process will be the clue for the provision of learning tools and environments more suitable for them, improving the results of programs and courses of the entrepreneurial curricula. Future research focused on these ad hoc learning programs would be welcomed.

The principal limitation of this research was the instrument used to assess the learning strategies. Although it has been used in previous literature with good psychometric properties (Aizpurua et al., 2018; Bustos et al., 2017, Gargallo et al., 2009), its dimensions showed poor reliability in our sample. Consequently, the study only considered some of the learning strategies included in the original scale. Further literature should deepen in the study of the role of learning strategies in the entrepreneurial process using instruments with better psychometric properties. Another limitation of this research on undergraduate students is the lack of information about their actual development and performance as entrepreneurs once they finish their university studies. As Peterman and Kennedy (2003) pointed out, the combination of theory and real-world experience encourages the student's entrepreneurial intent. Additionally, it would be interesting to assess the role of learning strategies in more comprehensive models, including the traditional predictors of entrepreneurship intention, such as personality traits or personal abilities.

There are also several lines for future research. Firstly, it would be interesting to analyze whether the results are different according to the student's profile, considering, for example, the type of university (private vs. public), economic context, etc. Secondly, our study was cross-sectional research, which constitutes a limitation when aiming to study mediation models. Future research could benefit from longitudinal studies built upon the knowledge of crucial learning strategies identified in the present paper.

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