International Education Studies; Vol. 13, No. 5; 2020
ISSN 1913-9020 E-ISSN 1913-9039
Published by Canadian Center of Science and Education

Barriers Affecting the Passion and Entrepreneurial Intention of University of the ITSON

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Received: December 10, 2019 Accepted: January 30, 2020 Online Published: April 18, 2020

doi:10.5539/ies.v13n5p94 URL: https://doi.org/10.5539/ies.v13n5p94

Abstract

The purpose of this article is to analyze the internal and external barriers experienced by university students of the Technological Institute of Sonora (ITSON) for the development of entrepreneurship. The study is focused on a sample of 733 students from the areas of engineering, administrative sciences, and social sciences. The field work was carried out during the months of May to September 2018. The controlled statistical technique for data analysis was the structural equation model (SEM) with the support of SMARTPLS software version 3.2.8. The results have revealed that internal creativity barriers are the ones that most negatively impact the entrepreneurial passion of ITSON university students. This research contributes to the development of entrepreneurship literature from the area of psychology and business sciences through planned behavior theory, cognitive theory, and self-determination.

Keywords: creativity, entrepreneurial intention, entrepreneurial passion, university students

1. Introduction

In these times of social, economic, and environmental problems, most regions of different latitudes are focusing on resolving them through government policies with a traditional approach, but some nations are also launching new reforms aimed at improving education (Drucker, 2012; Zahra & Wright, 2011). Therefore, constant learning and training are and will be the key to preparing the young population in jobs and in ventures that have not yet been discovered (Real, Roldán, & Leal, 2014; Zahra, Sapienza, & Davidsson, 2006). With the enormous speed of globalization in open markets, in innovation and in new information and communication technologies, regions of all latitudes will have to strengthen their economic, educational, political, and social policies to improve the quality of life of the inhabitants and be in the elite of competitive markets (European Comission, 2018; Jiménez-jiménez & Sanz-valle, 2011). In developed countries, the level of training has been on the rise in the last two decades and one of the strategies to solve socio-economic problems has been the promotion of entrepreneurial education (Ernest, Matthew, & Samuel, 2015; GEM, 2018). In counterpart in less developed regions, some data issued by the OECD (2017) report that the population of young people in Latin America and the Caribbean (LAC) between ages 15 and 29 years amounts to more than 163 million, which is equivalent to 25% of the total population of this region in the United States. Despite notable progress in education during the last decade, less than a third of young Latin Americans between ages 25 and 29 years have received some entrepreneurial and innovative education in the universities. Young entrepreneurs in Latin America tend to have less education, on average, than their counterparts in first-world economies (CEPAL, 2018; UNESCO, 2018). Various entrepreneurs have expressed that this is due to a human capacity, which is strongly related to the level of creativity, the capacity for innovation, passion, and the intention to generate new innovative ideas (Drucker, 2012; Zahra, 2008). Creativity is a human process that consists acquisition of knowledge, imagination, and the implementation of the ideas generated for later evaluation (value propositions) (Drucker, 2014; Yar, Wennberg, & Berglund, 2008) and actions that later become innovative facts (Mishra & Zachary, 2014; Śledzik, 2013). However, for the development of creativity and entrepreneurship, there are some obstacles (intrinsic and extrinsic): (1) from the internal point of view: (a) the lack of motivation or disinterest to undertake, (b) fear of failure, (c) lack of entrepreneurship training, and (d) cultural and social paradigms (GEM, 2018; Mahendra, Djatmika, & Hermawan, 2017; Nawaser, Khaksar, & Shakhsian, 2011); (2) from an external point of view: (a)

the lack of economic and financial resources, (b) little government support, (c) lack of infrastructure, (d) lack of entrepreneurial training at an early age, (e) internal and external market regulations, and (f) little investment in research, development, and innovation (R&D&I) (GEM, 2018; Zahra & Wright, 2011). In the theoretical and empirical review from the point of view of psychology and business sciences, it has been detected that there are few studies in Latin America focused on the influence of barriers to the development of creativity and its effect on intention and in the entrepreneurial passion in the student context at university level (GEM, 2018; Stewart & Roth, 2007; Zahra, 2008). In most of the studies analyzed, they focus on studying these phenomena in economies of scale and in developed countries. Therefore, this article focuses on analyzing these variables related to the barriers to university entrepreneurship students of the Technological Institute of Sonora (ITSON-Instituto Tecnológico de Sonora). The objectives of the research work are the following: (1) to analyze the effect of barriers to creativity in entrepreneurial intention and on entrepreneurial passion, and (2) to examine the effect that entrepreneurial passion has on the entrepreneurial intention of ITSON university students.

2. Review of the Hypothesis Literature and Development

2.1 The Barriers of Creativity in Entrepreneurial Intention in the University Context

Entrepreneurship has been one of the topics most addressed in the last three decades by researchers in the social sciences (psychology) and business sciences. There are different contexts of entrepreneurship that have been approached from the theory of planned behavior, among the most cited are the social, business, and university (Ajzen, 1991). Starting from the social and business context, entrepreneurship has been visualized as the ability of the individual to create, face risks, and detect latent opportunities in a society. This model is based on the intention of the individual and contemplates three factors: (1) the attitude toward entrepreneurship, (2) subjective norms, and (3) the perceived control over the creation behavior of the organization. In addition, entrepreneurship can be developed from within an organization or as a new idea generated from the creativity of the individual's thinking. From a psychological perspective, entrepreneurial intent has been one of the topics with the greatest interest by scholars in the area, such is the case of McClelland (1965), Littunen (2000), and Kirby (2004); These researchers argue that individuals have achievement needs, power needs, and affiliation needs, this allows people to have internal impulses that moves them to develop their creativity and generate new ideas. Another of the theoretical currents from a psychological perspective that reinforce the entrepreneurial intention is the theory of self-determination (SDT). In their conceptual postulates on motivation, experts have concluded that a psychological theory is motivational only if it explores energy (generated in needs) and if it is directed toward internal and external impulses, orienting action toward satisfying needs (Ryan & Deci, 1985, 2000). In this same direction, SDT assumes that human beings are very active organisms with tendencies toward growth to dominate the environments and to integrate the new experiences that are in the internal and external environment (Ryan & Deci, 2017). These actions lead them to face opportunities, risks, and barriers to achieve efficiency and meet the full variety of their needs, such as entrepreneurial intent and entrepreneurship (Deci & Ryan, 2016). Authors, such as Schumpeter (2000) and Drucker (2014), have stated that entrepreneurship is creative and innovative destruction, that is, it is a strategic action that breaks down and breaks with existing paradigms (common goods and services) of consumers in a potential market. From the university point of view, entrepreneurship has been visualized as a complementary assignment to the student's training, but at present, educational institutions are incorporating greater training and education programs oriented toward entrepreneurship (Sirelkhatim & Gangi, 2015). However, university students face different limitations and/or barriers that prevent them from developing their creativity for business creation. Among the most prominent are the internal ones: these barriers are associated with socio-logical aspects (gender, age, distrust-locus control) (Din, Anuar, & Usman, 2016; Mueller & Thomas, 2001), demographic (family influence, poor training in entrepreneurship) (Zellweger, Sieger, & Halter, 2011), and socioeconomic (little access to financing) (Smith & Beasley, 2011), and external ones are associated with socio-cultural aspects, such as fear of failure and fear of economic environment situations (recession and financial crises) (Robertson, Collins, Medeira, & Slater, 2003; Rosique-Blasco, Madrid-Guijarro, & García-Pérez-de-Lema, 2018). There are some studies that relate the barriers of creativity with entrepreneurial intention, which point out that when there are greater barriers (fear of failure, locus control, and poor academic preparation in entrepreneurship), the entrepreneurial intention is negatively affected, this is mainly due to external factors, such as poor access to financing and macro-economic phenomena (Fatoki & Patswawairi, 2012; Rosique-Blasco et al., 2018). In this same direction, external barriers to the development of creativity, such as cultural prejudices and social paradigms, are factors that inhibit entrepreneurial intent (Ip, Liang, Wu, Law, & Liu, 2018; Yar et al., 2008). Other research affirms that creativity is an individual capacity that generates greater motivation and intention to undertake in university students (Smith, Sardeshmukh, & Combs, 2016; Zampetakis & Moustakis, 2006). On the other hand, authors, such as Bagheri (2011) and Bagheri, Lope Pihie, & Krauss

(2013), have concluded that students at an early age before starting their university studies have high entrepreneurial intent and see less obstacles to developing creative ability. Some schools have managed to implement and strengthen some teaching practices through the case study and business simulators, actions that eliminate obstacles to entrepreneurial intent. However, other authors point out that the main barriers to the development of creativity and that drives entrepreneurial intent are emotions and attitudes (Gomes da Costa Pedro Mares, 2016; Kalitanyi & Bbenkele, 2019). From the previous context, the following hypotheses are proposed (view Figure 1):

H1. The greater intrinsic barriers to creativity, the lower entrepreneurial intentions in university students.

H2. The greater extrinsic barriers to creativity, the lower entrepreneurial intentions in university students.

2.2 The Barriers of Creativity in the Entrepreneurial Passion in the University Context

Entrepreneurial intention and entrepreneurial passion are capacities that individuals show when generating new ideas; however, there are barriers that impede the development of creative thinking, and they impact in two directions to the passion to start a new business (positive and/or negative) (Smith & Beasley, 2011). Cognitive theory and self-determination have suggested that individuals create and move through impulses that move them toward clearly preestablished goals, achievement, and self-realization (Shepherd, Patzelt, Shepherd, & Patzelt, 2018). Therefore, from the point of view of psychology, the individual's knowledge has become a resource and a capacity that allows for effective decision making and more rational human behavior (De Carolis & Saparito, 2006; Mitchell et al., 2007). This theory (entrepreneurial behavior) contemplates a series of elements and capacities that an individual possesses for the development of the intention and passion toward entrepreneurship, among which is the capacity for reasoning, the ability to communicate, the creative capacity, and the capacity for innovation (De Carolis & Saparito, 2006). That is why entrepreneurs have the ability not only to detect opportunities but also perceive and measure risks based on their cognitive ability. Entrepreneurial passion can be defined as positive emotions and feelings that constantly perspire and motivate a future entrepreneur (GEM, 2017; Gibb, 2007). Entrepreneurial passion is a combination of abilities and emotions, such as joy, the enthusiasm that a person has to face business challenges and challenges (Biraglia & Kadile, 2017; Cardon, Wincent, Singh, & Drnovsek, 2009a). Recent studies have shown that barriers to creativity (intrinsic and extrinsic), such as fear of failure, introversion, self-mistrust, low self-esteem, and social stereotypes, seriously affect the full development of entrepreneurial passion (create, invent, and develop) (Bhansing, Hitters, & Wijngaarden, 2018; Biraglia & Kadile, 2017). These factors have been limiting the creation of new ventures in the university context, which has led universities to adopt new business strategies that allow them to have graduate students with a greater culture and entrepreneurial passion (Liu & Gu, 2017; Rosique-Blasco et al., 2018). From the previous context, the following hypotheses are proposed (view Figure 1):

H1a. The greater intrinsic barriers to creativity, the lower the entrepreneurial passion (create) in university students.

H1b. The greater intrinsic barriers to creativity, the lower the entrepreneurial passion (develop) in university students.

H1c. The greater intrinsic barriers to creativity, the lower the entrepreneurial passion (in-sale) in university students.

H2a. The greater extrinsic barriers to creativity, the lower the entrepreneurial passion (create) in university students.

H2b. The greater extrinsic barriers to creativity, the lower the entrepreneurial passion (develop) in university students.

H2c. The greater extrinsic barriers to creativity, the lower the entrepreneurial passion (inventing) in university students.

2.3 The Entrepreneurial Passion and the Relationship with the University Entrepreneurial Intention

Literature has stated that entrepreneurial passion is the central axis and the vital organ that moves people toward entrepreneurship. Experts on the subject, such as Cardon et al. (2009), have stated that entrepreneurial passion is the "accessible intense positive feelings that the individual consciously experiences through participation in business activities associated with roles that are significant and relevant to the identity of an entrepreneur." From the theoretical perspective of the motivation that drives the entrepreneur toward its realization, it has been shown that the mixture between the feelings and the cognitive aspects of the entrepreneurial individuals are the key factors that strengthen the entrepreneurial spirit and action. For example, some authors, such as Kauanui, Thomas,

Rubens, and Sherman (2010) and Cardon, Gregoire, Stevens, and Patel (2013), express that entrepreneurial passion integrates two dimensions: intense positive feelings and centrality of identity. These factors are related to other aspects, such as emotion and cognition, elements that play a decisive role in entrepreneurship. One of the most cited conceptual models in studies on entrepreneurial passion is that developed by Cardon, Wincent, Singh, and Drnovsek (2009b), which contemplates the following dimensions: (1) goals related to cognition (challenges, commitment and effort), (2) entrepreneurial behavior (creative, persistent, and absorption), and)3) business effectiveness (opportunity recognition-inventor identify, innovativeness, venture creation, and venture growth). Therefore, this study contemplates the analysis of the variable of entrepreneurial behavior. Entrepreneurship education has been one of the most recently studied topics and more in the university context, not only by researchers but also by global organizations which are focused on predicting the abilities of individuals to face the challenges of the present and future (GEM, 2018; OECD, 2019). From the university, students are encouraged toward entrepreneurship with the analysis of case studies and readings on success stories in the business context (OECD, 2019; UNESCO, 2018). Recently, some institutions have been incorporating entrepreneurial training programs and business incubation and acceleration projects (Hornsby, Messersmith, Rutherford, & Simmons, 2018). From thinking and/or cognitive current, individuals who are potential entrepreneurs usually detect opportunities and minimize latent risks, this is generally achieved through converting experiences into applied knowledge (Miller & Le Breton-Miller, 2017; Tipu, 2015). Studies in this context have shown that the behavior and entrepreneurial passion of individuals is focused on creating, developing, and inventing new ways of doing things, facing problems, and/or creating new prototypes and that it also manages to develop positive impulses, which promote the strengthening of the intentions to undertake (Costa, Santos, Wach, & Caetano, 2018; Neneh, 2019). From the theoretical and empirical review, we emit the following hypothesis (view Figure 1):

H3a. The greater entrepreneurial passion (creating), the greater entrepreneurial intention of the university student.

H3b. The greater entrepreneurial passion (to develop), the greater entrepreneurial intention of the university student.

H3c. The greater entrepreneurial passion (inventing), the greater entrepreneurial intention of the university student.

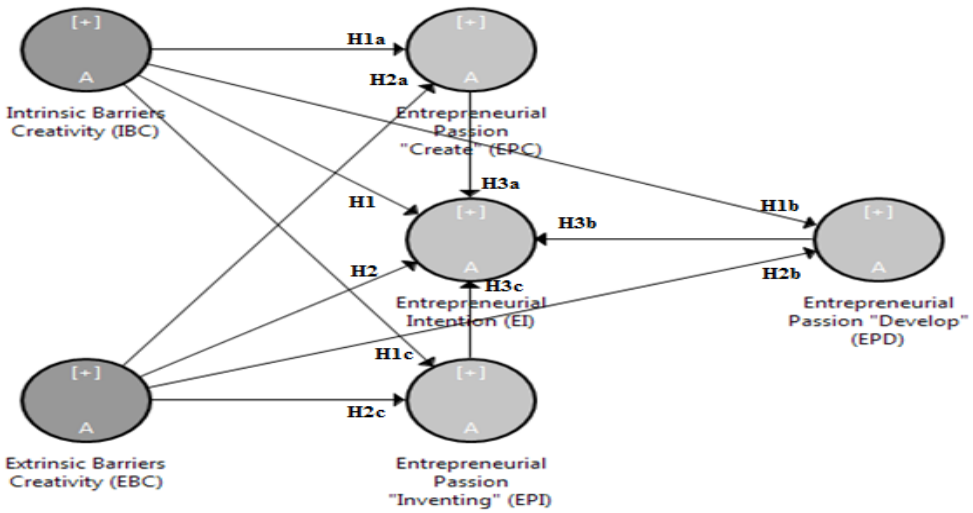

Figure 1. Theoretical model

Figure 1 shows the proposed theoretical model of the investigation. In this same Figure 1 you can see the constructed structural relationships (independent variables with dependent variables) to verify the results of the hypotheses.

3. Methodology

The study is quantitative and based on the principles of stratified sampling for finite populations. The population is made up of students enrolled in ITSON in its three academic units established in the cities of Guaymas, Obregon, and Navojoa Sonora in Mexico. The number of students in the areas of engineering, administrative

sciences, and social sciences is the focus of this study, and the information has been obtained from existing data in the school's registration department of the institution. The sample size was determined to ensure that the maximum margin of error for the estimation of a proportion (relative frequency of response in a specific item of a question) was less than 0.03 points with a 95% confidence level (see Table 1). The technique for collecting the information was through an online questionnaire addressed to the student through google docs (see Appendix A). The field work was carried out during the months of May to September 2018. Finally, a sample of 733 surveys was obtained, a figure that represents a response rate of 74.34% (see Table 2).

Table 1. Sample determination

Data		Conversion
N	13,000	Population
p	50%	0.50
q	50%	0.50
δ	95%	1.96
e	3%	0.03
n	986	Sample

Note. Table 1 shows the description of the formula for populations under 500 thousand subjects. N = Population, p = Probability in favor, q = Probability against, δ = Degree of reliability, e = Margin of error, n = total of the sample.

Table 2. Sample characteristics

Bachelor's degree	Average age	Women	Men	Total
Engineering (Industrial and Software)	23	94	182	276
Administrative Sciences (Administration, Tourism and Accounting)	22	132	118	250
Social Sciences (Education and Psychology)	22	116	91	207
Total	22.33	342	391	733

Note. Table 2 shows the total of the students participating in the research and their main characteristics such as age and gender.

3.1 Measurement of the Variables.

For barriers to creativity, this construct was divided into 1) intrinsic barriers to creativity and 2) extrinsic barriers to creativity. For statistical analysis and validation, it was measured as a first-order, one-dimensional, reflective type construct in A mode. The studies of Ajzen (1991), Ajzen (2011) and Audretsch and Belitski (2013) have been taken as a reference to develop the measurement scales of this construct. To measure the intrinsic barriers, 4 questions were structured in the questionnaire and provided to the student. Extrinsic barriers were measured through 3 structured questions in the questionnaire that were also provided to university students for their response to identify the main barriers (internal and external) that affect the development of creativity and the entrepreneurship. The options for answering the questionnaire are based on a 7-point Likert scale with 1 as strongly disagree and 7 as strongly agree. All the questions comply with the internal consistency and validity indicators, the factor loads are in a range of 0.661 to 0.797, and all significant at 99%, in addition to exceeding the allowed indicators in the composite reliability (0.846 and 0.777) and alpha of Cronbach (0.686 and 0.763).

Entrepreneurial Intention (EI). This construct was measured in a one-dimensional reflective type in A mode. Based on the review carried out on the theories that relate to creativity with entrepreneurial intention, this variable was measured taking reference to the studies developed by Smith and Beasley (2011), Ajzen (2011), and Drucker (2014). The variable has been measured with 5 questions formulated in a questionnaire addressed to university students expressing their answers related to the intention they have to start a business. For this, a 7-point Likert scale has been used with 1 as total disagreement and 7 as total disagreement. All questions comply with the internal consistency and validity indicators, the factor loads are in the range of 0.812 to 0.922, and all values are significant at 99%, in addition to exceeding the permitted thresholds of composite reliability (0.940) and Cronbach's alpha (0.929).

Entrepreneurial Passion (EP). This construct was measured in a one-dimensional reflective type in A mode. To develop the measurement scales for this construct, studies developed by Zahra and Nambisan (2012), Cardon et al.

(2013) and by Drucker (2014). This variable was measured using a 7-point Likert scale, with 1 as total disagreement and 7 as strongly agree. This variable has been broken down into the following: (1) passion to create, measured with 3 questions; (2) passion to develop, measured with 4 questions; and (3) passion to invent, variable measured through 4 questions. The questions were structured in a questionnaire aimed at university students. All the questions comply with the internal consistency and validity indicators, the weights are in the range of 0.860 to 0.922, and all are significant at 99%, in addition to exceeding the permitted thresholds of composite reliability (0.934, 0.939, and 0.930) and Cronbach's alpha (0.894, 0.913, and 0.900).

4. Results

4.1 Measurement Model

This section shows the convergent and discriminant validity of the proposed theoretical model. First, the average extracted variance (AVE) is analyzed; this indicates the average amount of the variance explained by the indicators of the construct. Our AVE values range from 0.544 to 0.826, these results should be above 0.500, as indicated by Hair Jr et al. (2010). Also, the discriminant validity of the constructions in the model was verified through the analysis of the square root of the AVE. The results (diagonal) of the vertical and horizontal AVE are below the correlation between the constructs (Henseler, Ringle, & Sarstedt, 2015). Additionally, to verify the discriminant validity, the Heterotrait-Monotrait Ratio (HTMT) test was performed, indicating that the correlation values must be below 1 (Henseler, Ringle, & Sarstedt, 2015). This checks and detects that there is no anomaly (see Tables 3 and 4). Our results provide adequate convergent, discriminant validity, and adequate model reliability.

Table 3. Convergent and discriminant validity

	AVE	BExt	BInt	IEMP	PE (Creative)	PE (Develop)	PE (Inventiveness)
BExt	0.544	0.738					
BInt	0.580	0.524	0.761				
IEMP	0.758	0.065	0.132	0.871			
PE (Creative)	0.826	0.046	0.146	0.599	0.909		
PE (Develop)	0.793	0.076	0.155	0.509	0.815	0.891	
PE (Inventiveness)	0.769	0.059	0.169	0.468	0.756	0.767	0.877

Note. Table 3 shows the results of the discriminant validity and the value of the average variance extracted less than 0.500.

Table 4. HTMT discriminant validity

	BExt	BInt	IEMP	PE (Creative)	PE (Develop)	PE (Inventiveness)
BExt						
BInt	0.770					
IEMP	0.083	0.150				
PE (Creative)	0.056	0.169	0.658			
PE (Develop)	0.089	0.175	0.552	0.901		
PE (Inventiveness)	0.081	0.202	0.513	0.843	0.846	

Note. Table 4 shows the results of the discriminant validity test through Heterotrait-Monotrait Ratio (HTMT), the values are below 1.

4.2 Structural Model

The statistical technique of structural equations based on variance was used to verify the hypotheses raised in this investigation through the SmartPLS version 3.2.8 Professional program. The use of this statistical technique is appropriate in predictive, exploratory, and confirmatory research (Henseler, Hubona, & Ray, 2016). Table 5 shows the results of the β coefficient, the degree of significance (p value), the importance of the distribution of the values using Student's *t* test and standard deviation. To test the hypothesis, the bootstrapping procedure was used with 5,000 sub-samples as recommended Chin (1998).

Table 5. Hypothesis test results

Hypothesis	Beta	T Score	Standard Deviation	P Value	F^2	Results
H1. BInt -> IEMP	−0.037	0.041	0.913	0.181	0.008	Rejected
H2. BExt -> IEMP	−0.011	0.057	0.196	0.422	0.009	Rejected
H1a. BInt -> PE (Creative)	−0.168	0.044	3.826	0.000	0.025	Confirmed
H1b. BInt -> PE (Develop)	−0.159	0.043	3.716	0.000	0.020	Confirmed
H1c. BInt -> PE (Invent)	−0.191	0.044	4.316	0.000	0.033	Confirmed
H2a. BExt-> PE (Creative)	0.042	0.046	0.915	0.180	0.011	Rejected
H2b. BExt-> PE (Develop)	0.008	0.049	0.153	0.439	0.006	Rejected
H2c. BExt -> PE (Invent)	0.041	0.048	0.855	0.196	0.005	Rejected
H3a. PE (Creat) -> IEMP	0.543	0.074	7.311	0.000	0.136	Confirmed
H3b. PE (Develop) -> IEMP	0.051	0.065	0.796	0.213	0.006	Rejected
H3c. PE (Invent) -> IEMP	0.011	0.057	0.192	0.424	0.004	Rejected

Note. The table shows the results of the hypotheses (beta value), the value of *t*, the standard deviation, and the size of the effect of the predictive model through the F^2 test, and the levels of significance according to the values of: *, **, ***, 10% to 5%, and 1%, respectively.

Table 5 shows the results of the estimation of the structural equations made with PLS. We find empirical support for the hypotheses (H1a, H1b, H1c, and H3a), the other hypotheses have not shown a significant relationship. The hypothesis results show significant effects at 99%. To evaluate the adjustment of the proposed model with the SEM techniques that are based on the variance through PLS, we consider: (1) the value of the trajectory coefficients; (2) the analysis of (R^2); and (3) the values of (F^2), which are significant individual measures to explain the predictability of the structural model (Chin & Dibbern, 2010). Our strongest model coefficients are from 0.543***, −0.191***, −0.168*** and −0.159***. For the analysis of the explained variance and the prediction quality of the model through (R^2), the results of 0.116, 0.126, 0.100 of the variable Entrepreneurial Passion and for the Entrepreneurial Intention (0.112, .042, 0.056) show a low and medium effect (Hair, Jr., Sarstedt, & Ringle, 2017). The value of F^2 is measured according to the values of 0.02, 0.15, and 0.35, and these indicate weak, medium, or large effect (Ringle, Wende, & Becker, 2017). The analysis of F^2 shows the results of the key relationships of the model with values of 0.005 and 0.136. The statistical test Q^2 (cross-validated redundancy index) is used to evaluate and test the predictive relevance of endogenous constructs in a model. The model was evaluated through the blindfolding technique (Ringle et al., 2017). Our values are above the value of (0), which demonstrates the existence of a remarkable explanatory quality of the model (Chin, 1998; Hair, Hult, Ringle, Sarstedt, & Thiele, 2017). To explain more accurately the predictive effect, we have added a goodness of fit test. When the standardized value of the residual quadratic mean (SRMR) is in a range (<0.08-0.1), there is an acceptable adjustment (Schuberth, Henseler, & Dijkstra, 2018). Our result (0.090) confirms that the proposed model has an acceptable predictive quality and that the empirical results are consistent with the theory.

5. Discussion and Conclusion

In this section, the conclusions and discussions of the main findings of the study are issued, all based on theories of psychology, such as planned behavior, cognitive theory, and self-determination theory. The results show greater force in the proposed theoretical model, which negatively affects the development and strengthening of entrepreneurial passion, the internal barriers that university students emit (H1a, H1b y H1c). These findings confirm that university students have failed to overcome intrinsic barriers that are related to psychological factors, which consequently prevent them from focusing deeply on the ability to create, develop, and invent ideas that lead to entrepreneurship (H1a, H1b y H1c). These findings are aligned with the planned behavior theory and cognitive theory (Ajzen, 1991; Kautonen, van Gelderen, & Fink, 2015; Begley, 1995) and with most empirical studies (Miller & Le Breton-Miller, 2017; Robertson et al., 2003; Rosique-Blasco et al., 2018). In this same context, but with a positive direction, we find that entrepreneurial (creative) passion has an important effect on entrepreneurial intention (H3a), which allows inferring that ITSON university students put a greater emphasis on their creativity for the development of entrepreneurial ideas. These findings are aligned with the psychological theories of planned behavior and with various empirical studies (Kautonen et al., 2015; Kautonen, van Gelderen, & Tornikoski, 2013; Mitchell et al., 2007; Rosique-Blasco et al., 2018). However, our study has not been able to empirically verify that external barriers have any significant effect mainly on entrepreneurial passion and, to some extent, on entrepreneurial intentions. This may be because university students are not paying attention to the external factors

that impede the development of entrepreneurship and are focusing more on the locus of control, that is, on cultural, social and psychological aspects to launch innovative ideas and entrepreneurs (Bhola, Verheul, Thurik, & Grilo, 2006; Smith & Beasley, 2011). In the context of underdeveloped regions in the social, educational, and economic fields, some recommendations derived from the findings of the studies are issued, which can be strengthened in the establishment of policies focused on the development and training of entrepreneurship: (1) governments in conjunction with universities, research centers, and the business sector could articulate to work collaboratively and initiate training programs in entrepreneurial and business education (Carayannis, Barth, & Campbell, 2012; Carayannis, Grigoroudis, Campbell, Meissner, & Stamati, 2018); (2) universities should adopt new business models focused on creativity development and agile methodologies for entrepreneurial development (Teece, 2010; Zahra & Wright, 2016; Zahra, Newey, & Shaver, 2011); and (3) the different actors of the government, business, and education sector should promote new laws and educational reforms aimed at the development of entrepreneurship and sustainability (Carayannis et al., 2018; Jiménez, Palmero-Cámara, González-Santos, Gonzalez-Bernal, & Jiménez-Eguizábal, 2015; UNESCO, 2018).

Under the theoretical cognitive and self-determination perspective, research has proven that the internal factors and impulses that human beings develop are the elements that determine the achievement of goals and the exploration of new environments. In this sense, we observe that one of the main contributions of research work focuses on the intrinsic barriers to the development of creativity and entrepreneurial intention. Therefore, individuals (students), who fail to reach professional self-realization (passion and entrepreneurial intention), are generally due to psychological inhibitors (lack of mental concentration, attention, retention, memory, perception, among other important ones) that are deeply rooted in the cognitive process (Ajzen, 2011; Miller & Le Breton-Miller, 2017; Ryan & Deci, 2000). These manifestations have also been experienced and argued by the theory of planned behavior and by the conceptual model of experience and entrepreneurial passion developed by Cardon et al. (2009b). Some limitations of the study are: (1) the surveys were conducted to university students of different semesters and from different areas from their subjective perception, in the future the sample can be segmented, evaluate their entrepreneurial behavior, and develop longitudinal studies; and 2) the statistical technique used in the study is based on the analysis of variance; in the future, other techniques that are related to the analysis of covariance may be used. Finally, given the importance of the barriers of creativity to the development of entrepreneurship in the university context and the global study of the value of entrepreneurship for social and economic stability, it is convenient to continue with the development of this type of research. To strengthen and complement research in this context, it is interesting to add new constructs and/or variables that contemplate entrepreneurial leadership and innovation.

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Appendix A

Survey (Entrepreneurial Intention and Creativity)

Block I

A1. Age _____years old

A2. ☐ Male ☐ Female

A3 Name of the bachelor's degree_____

A4. Have you ever completed a course or program related to entrepreneurship? ☐Yes ☐No

Block II

Please indicate to what extent you agree or disagree with the following statements:

	Strongly disagree -Strongly agree						
Barriers to creativity	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Intrinsic barriers to creativity							
IBC1. Lack of skill or experience in creativity	☐	☐	☐	☐	☐	☐	☐
IBC2. Being unwilling to do different things	☐	☐	☐	☐	☐	☐	☐
IBC3. Lack of ability to evaluate new ideas	☐	☐	☐	☐	☐	☐	☐
IBC4. Insufficient time to think creatively	☐	☐	☐	☐	☐	☐	☐
Extrinsic barriers to creativity							
EBC1. Follow cultural behavior patterns	☐	☐	☐	☐	☐	☐	☐
EBC2. Aversion to social changes	☐	☐	☐	☐	☐	☐	☐
EBC3. Lack of external motivation to develop creative activities	☐	☐	☐	☐	☐	☐	☐
Entrepreneurial Passion	**1**	**2**	**3**	**4**	**5**	**6**	**7**
Passion to create							
EPC1. Creating a new company excites me.	☐	☐	☐	☐	☐	☐	☐
EPC2. Owning my own company gives me energy	☐	☐	☐	☐	☐	☐	☐
EPC3. Nurturing a new business through its emerging success is pleasant.	☐	☐	☐	☐	☐	☐	☐
Passion to develop							
EPI1. I really like to find the right people to market my product / service	☐	☐	☐	☐	☐	☐	☐
EPI2. It is exciting to gather the right people to work in my business.	☐	☐	☐	☐	☐	☐	☐
EPI3. Pushing my colleagues and myself to make our project better motivates me.	☐	☐	☐	☐	☐	☐	☐
EPI4. Growing and growing businesses is an important part of who I am	☐	☐	☐	☐	☐	☐	☐
Passion to invent							
EPD1. It is exciting to discover new ways to solve the unmet market needs that can be marketed.	☐	☐	☐	☐	☐	☐	☐
EPD2. I find it nice to look for new ideas for products / services to offer.	☐	☐	☐	☐	☐	☐	☐
EPD3. I am motivated to discover how to improve existing products / services.	☐	☐	☐	☐	☐	☐	☐
EPD4. Scanning the environment for new opportunities really excites me.	☐	☐	☐	☐	☐	☐	☐
Entrepreneurial Intention (EI)	**1**	**2**	**3**	**4**	**5**	**6**	**7**

IE1. I am prepared to do anything to be an entrepreneur	☐	☐	☐	☐	☐	☐	☐
IE2. My professional goal is to become an entrepreneur	☐	☐	☐	☐	☐	☐	☐
IE3. I am determined to create a company in the future	☐	☐	☐	☐	☐	☐	☐
IE4. I have thought seriously about the possibility of starting a business	☐	☐	☐	☐	☐	☐	☐
IE5. I intend to start a company someday	☐	☐	☐	☐	☐	☐	☐