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Intention of entrepreneurship of undergraduate students of business sciences

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Abstract

Business education plays an important role within universities, since, from their training role, they represent an important column in the development and training of new professionals to face the growing challenges that are presented in the current economic environment. The objective of this research is to determine the relationship of business education in the entrepreneurial intentions of university students through the Theory of Planned Behavior. A questionnaire is applied to 141 university undergraduates of the business careers of an Institution of Higher Education in northeast Mexico, and the statistical analysis by means of a second-generation statistical tool based on Modeling Equations Structural such as SmartPLS. The results highlight the importance of entrepreneurial education in the entrepreneurial intentions of university students by developing favorable attitudes towards entrepreneurship. However, of the three factors that precede intentions, a lesser influence of subjective norms is observed for those with greater perceived behavioral control.

Keywords: Entrepreneurship intention, financial education, Theory of Planned Behavior

Introduction

Entrepreneurship activities are an essential stimulant for economic growth in most countries (Rico & Cabrer-Borrás, 2019). Throughout history, the role of business creation as well as the success of existing ones has been recognized as an element that is related to innovation activities and job creation (Françoise & Gaëlle, 2015). For this reason, there is an interest on the part of those in charge of preparing public policies on how to encourage and promote business activities (Hamdan & Barone, 2019), considering that nowadays, micro, small and medium-sized companies are an important element within economies, especially in countries with emerging economies (Daou et al, 2014).

Entrepreneurship activities offer great opportunities for people to obtain financial independence (Hamdan & Barone, 2019). This matter is relevant, since the intense increase in global competition has reduced to a certain extent the security of obtaining a job as a result, promoting the desirability of self-employment (Payne, 2015). In this sense, it is that business education is essential in the training of people. By becoming a facilitator of entrepreneurship when it stimulates and empowers individuals to be able to imagine, establish a business, create and value individual or

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collective actions or projects with creativity, responsibility and critical sense (Zubizarreta et al., 2014).

Understanding how business education impacts business intentions is becoming noteworthy, as governments and societies struggle to find a continuous supply of new entrepreneurs to drive economic growth in their regions (Joensuu et al., 2013). Certainly, the importance of business education and its impact on business intentions in college students can be highlighted. Therefore, the objective of this research is to determine the relationship of business education in the entrepreneurial intentions of university students.

To achieve the above, a questionnaire is prepared and applied to university students of the business careers of an Institution of Higher Education in northeast Mexico, precisely in the state of Tamaulipas, and through a second generation statistical tool based on In Structural Equation Modeling such as SmartPLS, it is proposed to check hypotheses, as well as to make the corresponding contributions to knowledge.

Literature Review

Business Education

Over time, studies have been carried out that show that entrepreneurial education has a significant impact on students' intentions to develop a business when starting a business (Fayolle & Gailly, 2015). Entrepreneurial education, according to some researchers, makes reference of the importance of curricular courses and their impact on the development of knowledge, skills and competencies in students within the business environment (Imo & Oswald, 2011).

Obviously, entrepreneurship activities carry a certain degree of uncertainty (Campbell, 2018; Zichella, 2019) as a consequence of the challenges that arise when trying new and innovative things. Although it is not essential to have business training to start a company, it must be borne in mind that the lack of knowledge regarding business management can have a negative impact on the entrepreneur and thus have an adverse effect on activities business (Hong et al., 2012).

There are studies focused on business education and entrepreneurial intentions, which have been used to predict business behavior, where the results obtained have shown that there is a significant relationship between these two variables (Bird, 1988; Liñán & Fayolle, 2015; Ferrandiz et al., 2018).

It can be noted that in the course of the individual's training in business education, intentions are constantly increasing in relation to the knowledge acquired and the skills developed, that these

issues, in turn, can help in decision-making complex (Ilonen et al., 2018), in addition, being a means to achieve a higher level of self-confidence, as well as minimizing the perception of barriers and risks within entrepreneurial activities (Jiménez et al., 2015). Consequently, the importance of business education as a facilitator of entrepreneurship can be highlighted (Zubizarreta et al., 2014).

Studies such as that of Ahmed et al. (2010), show that young students in their last years of university career are more susceptible to start a business compared to new students, since according to Ilonen et al. (2018), business education improves the level of confidence in the student, as a result increasing their intention to start a business. Similarly, there are studies that show that business education can affect university students in an action that is adverse to the intention to endeavor (Von Graevenitz et al., 2010), which is an extremely interesting inquiry, in which it might be deduced that college students during their training may have gained a more realistic image of the features involved in venturing into business.

Theory of Planned Behavior

Nowadays, the importance of scientific research on the field of entrepreneurship is highlighted, which is constantly evolving (Carlsson et al., 2013), this is why there are attempts to make sense out of the research within the existing business as well as foresee future research trends in the field of entrepreneurship from psychological, social, economic perspectives, and future directions for teaching and practical research (Bedo et al., 2020; Raposo et al., 2020).

Studies have been carried out in order to identify the factors that influence decisions to start a business, some of the aspects that have been taken into account in previous research are demographic issues such as sex, ethnic issues, family support, as well as personality characteristics (Aldrich & Ward, 1990; Edelman et al., 2016). The theoretical background described above, allow to confirm the existence of factors that intervene in the intentions to start a business, and that constitute relevant aspects when demonstrating the existence of factors that impact on business behavior. However, there is a significant number of studies that show that the most important predictor for entrepreneurship is intentions (Ajzen, 1991).

A variety of intention models have been proposed, however, the model that has predominated in recent years involves the Theory of Planned Behavior (Botsaris & Vamvaka, 2016). This theory is considered as the means by which an evaluation of people can be carried out in order to improve the potential understanding of business behavior (Zhang et al., 2015), since it has been mentioned that before entrepreneurship exists, there must be a potential for entrepreneurship to be carried out (Krueger & Brazeal, 1994).

The Theory of Planned Behavior considers three factors as antecedent of the intentions to start a business: subjective norms, attitudes and perceived control (Mehtap et al., 2017). Subjective norms refer to the perceptions that close people in the lives of individuals think about working on their own (Krueger et al., 2000), the attitudes are those that the subject takes towards a certain behavior. Finally, the perceived control defines the perception of ease or difficulty on the part of the subject to become an entrepreneur (García et al., 2015).

Attitudes

In relation to the Theory of Planned Behavior, attitudes have an impact on the intention towards a certain behavior (Botsaris & Vamvaka, 2016), which can be understood as the state in which an individual can respond positively or negatively to a certain appreciation and is related to a specific behavior (Sánchez et al., 2011).

According to Souitaris et al. (2007), the attitude towards entrepreneurial intentions is related to the difference between the desire to work as an employee of an organization and that desire to work on their own. In this sense, Ajzen (1991) points out that the appreciations that individuals have in relation to certain tasks increase the probability that the attitude favors the intention and this in turn impacts on subsequent behavior.

As a result, there are studies that have examined the relationship between how attitudes affect the intention to start a business (Botsaris & Vamvaka, 2016; Fernández et al., 2017), which suggest that the business results play an important role in the intentions to start a business, that is, if individuals believe that they have the ability to carry out the creation of a business, it will result in the achievement of the expected business results (Renko et al., 2012).

In relation to the above, it is that the education of the individual should focus on providing the necessary tools to provide more technical knowledge about the process of creating a business, since in this way adverse attitudes to the intentions to start a business could be eliminated and have a significant impact on business decisions.

Subjective norms

Subjective norms refer to the perceptions that close people have in the life of the individual who thinks to work on their own (Krueger et al., 2000), these incorporate beliefs about the extent to which other people close to the circle socially evaluate and support a particular behavior in the person (Ajzen, 1991; Kim et al., 2006). In other words, social norms can be understood as the probability that a certain social group approves or disapproves of a certain behavior by the individual, which can significantly impact their intentions to create a business (Mohammed et al., 2017) and be a favorable

factor towards intentions, as long as the social group closest to the individual values the entrepreneurial actions positively and when this group approves the individual's decision to start a business (Liñán et al., 2011).

Research has been done, in which subjective norms have been evidenced as a predictor of business intention (Usman, 2019). Consequently, an individual's entrepreneurial intentions are influenced to some extent by sociocultural norms, which can influence the formation of conducive attitudes towards entrepreneurship and also a greater perceived behavioral control that influences entrepreneurial intentions.

However, despite the fact that subjective norms play an important role within the intentions to start a business, some researchers have shown evidence that this variable is the one that exerts the least influence of the three factors that precede intentions (Ajzen, 1991; Liñán, 2004), for those with greater perceived behavioral control (Ajzen, 2002).

Perceived Control

Perceived behavioral control, according to Liñan and Chen (2006), reflects an individual's perception of the ease or difficulty in performing a certain behavior. Ajzen (2002) points out that within perceived behavioral control two important components are immersed: the first of them is in relation to the various resources that the individual has to carry out a certain behavior (money, time, among others), and the second is in relation to their confidence to carry out a certain behavior, where the belief of a person in himself for the execution of a certain behavior is immersed. This variable was added to the theory in order to take into account the situations in which people consider that they may or may not influence a certain behavior.

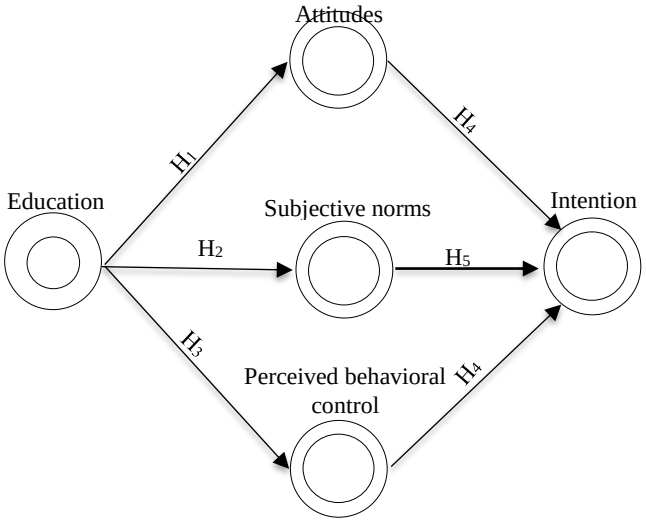
According to Fietze and Boyd (2017), perceived behavioral control is often measured with the internal locus of control, and for Nasution and Östermak (2012), the internal locus of control is when people consider what happened in their lives is the result of the decisions and actions they take. Studies have shown that perceived behavioral control is a strong predictor of business behavior. Therefore, the Theory of Planned Behavior has been widely supported based on the empirical studies that have been carried out and the assumption in which this theory is supported is that the more favorable the attitude variables and subjective norms are and the greater the perceived behavioral control, the stronger should be the intention of the person to perform the specific behavior in question.

That is why understanding and knowing the factors that influence students' entrepreneurship intentions are fundamental since they play an important role in promoting business activities, and also based on the development of the study and the results obtained, it could have an impact on the generation of strategies that can affect the development and economic growth of the region.

After conducting the literature review of the variables involved, the working hypotheses to be tested are presented below, and in Figure 1 (Research Model), the relationships can be observed graphically.

- H_1. The knowledge acquired in the economic-administrative sciences increases the attitudes towards entrepreneurship in university students.
- H_2. The knowledge acquired in the economic-administrative sciences influences how university students perceive subjective norms.
- H_3. The knowledge acquired in the economic-administrative sciences propitiate a greater perception of behavioral control in university students.
- H_4. The attitudes of university students favor their intentions to create a business.
- H_5. Subjective norms influence the increase of the intention to start a business of university students.
- H_6. Perceived behavioral control influences the entrepreneurial intentions of university students.

Figure 1: Research Model



Method

In Mexico, according to information from the National Survey on Productivity and Competitiveness of Micro, Small and Medium Enterprises, there are more than 4 million companies (INEGI, 2015), which generate 72% of employment and 52% of the country's gross domestic product (GDP). In this sense, higher education institutions, within their role as trainers of new professionals, play an important role when providing students with the tools and skills necessary so that they can contribute

to the creation of productive companies that generate a virtuous circle for the benefit of entrepreneurs, society and the government.

This research analyzes the role of entrepreneurial education in the intentions of entrepreneurship by university students, the study is based on the Theory of Planned Behavior of Ajzen (2002), since as Zhang et al. (2015), this model is considered as the means by which an evaluation of people can be carried out with the purpose of improving the potential understanding of business behavior. The fieldwork is carried out in the state of Tamaulipas, located in the northeast of Mexico, a country with an emerging economy. To achieve the goal, the literature of the dependent and independent variables was analyzed, which are operationalized as follows:

- Education: training, knowledge, abilities, skills obtained.
- Attitudes: self-confidence, perseverance, initiative, creativity, personal improvement.
- Subjective Norms: motivation, social recognition, social value.
- Perceived Behavioral Control: trust, security, identification of opportunities.
- Intent: conviction, goals, decision, actions, effort.

Regarding the review of the state of the art, it was detected that, although there are investigations related to the application of the Theory of Planned Behavior at the international level, a weak investigation was detected in Mexico. As a result of this situation, as there is no exact instrument to achieve the objective pursued by the research, through a review of the state of the art, the items of the constructs to be investigated were elaborated. The preliminary version of the instrument was sent to academic experts and based on the observations indicated, the pertinent corrections were made. Then, a pilot study was carried out with 34 university students in order to reach the final validation. The pilot study yielded the elimination of three items as they did not meet the minimum significance required, and the adequacy in the wording of some items in order to have greater validity at the time of their application. It was chosen to apply a Likert scale from 1 to 7 points (1. Totally disagree… 7. Totally agree), in order to have the final instrument in which some items related to demographic aspects were added.

The empirical work was carried out in the most important Public Higher Education Institution in the Mexican state of Tamaulipas. Regarding the sample, it was applied to a convenience sample, since, although the institution has a presence in the most important cities of its geography, only those undergraduate students of economic-administrative sciences were susceptible to the study. It was wise to consider obtaining a sample greater than 100 in order to be able to apply and achieve an acceptable validity through the application of the SmartPLS software. For the application of the instrument, we contacted academics from the different business schools attached to the institution under study, in

order to facilitate its application. In total, 141 questionnaires were obtained, which after the normalization and validation analyzes of the data, left 130 valid questionnaires for analysis.

To perform the inferential analysis by means of Structural Equation Modeling, the PLS algorithm was executed, in which, based on the results obtained, some items that did not meet the minimum accepted loads were excluded. Therefore, the algorithm was ran again in order to improve it (Hair et al., 219).

With the total of the validated questionnaires and together with a subsample of 5000 subsamples, the crossovers of variables, the correlation matrix, the factorial loads, the mean extracted variance (AVE), *t statistic*, the explained variance (R^2) were obtained, the standardized path coefficients (β), and the effect size (f^2), in order to validate the valuesobtained in which consistency, homogeneity and heterogeneity can be verified and in this way the proposed hypotheses can be verified.

Measurement Model Validation

- Item Reliability: this is examined within the software with factor loadings (λ) or simple correlations. For an item to be accepted, it must have a value greater than 0.707 (λ^2, 50% of the variance is explained) (Chin, 1998).
- Internal Consistency (Composite Reliability): it is measured by Cronbach's alpha and requires a minimum acceptable value of 0.7. (Nunnaly, 1978).
- Convergent Validation: it is evaluated through the mean variance extracted, and it is required that it meets a value that is above 0.50 in which more than 50% of the variance of the variable/construct is provided by its items (Fornell & Larcker, 1981). It can only be applied to reflective indicators, as in this research.
- Discriminant Validation: for this evaluation the Dijkstra-Henseler indicator (rho_A) is used, which must be greater than .7.
-

Structural Model Validation

In this second stage of analysis of the structural model, it is necessary to use two indices such as the Explained Variance (R^2), as well as the Standardized Path Coefficients (β). The values of the Explained Variance, show the predictive ability of the independent variables, as well as the standardized path coefficients, which are identified in the PLS graph, through arrows that relate the constructs in the internal model. According to Chin (1998), for β to be considered significant in the analysis of the model, it should reach a minimum value of at least 0.2 and preferably be above 0.3, and with respect to R^2, it should be equal to or greater than 0.1, because lower values, although significant, provide little information. Similarly, the significance (*t statistic*) must be less than .05 (p

<0.05). Also, in addition to the previous values, is the f^2 index, which is applied in order to know if there is a substantial impact of the independent variable on the independent variables. The values to know this impact, according to Cohen (1988), a value of .02 represents a small effect, a value of .15 represents a moderate effect and finally a value of .35 represents a large effect.

Results

Regarding the descriptive data, the sex of the respondents, 42% men and 58% were women, the ages are distributed as follows: from 21 to 23, 86%, from 24 to 26, 12% and finally 27 years or more, 2%.

Validation of the Measurement Model

- Item Reliability: the indicators show acceptable values in its 16 reflective elements (Table 1, Column 2). The load factors are in the range of 0.725 to 0.961, exceeding the recommended minimum of 0.707 (Chin, 1998).
- Internal Consistency (Reliability of Constructs): the values obtained show that the validation is acceptable as it is above the minimum values accepted by the Fornell and Larcker (1981) statistic of 0.707.
- Discriminant Validation: to analyze this concept, it was performed through the rho_A, which is a value used to measure the reliability of the construct (Dijkstra & Henseler, 2005), exceeding the recommended minimums.
- Convergent Validation: the evaluation is correct for this investigation, since as can be seen in Table 1, the AVE of the constructs exceeds the minimum acceptable value of 0.500. Their values range between 0.631 and 0.846. Likewise, resampling was carried out with 5000 subsamples to obtain the values of *t statistic*, the results in Table 2 show that five relationships have the necessary elements to accept the hypotheses.

Table 1. Individual reliability of the load of the reflective indicators and convergent validity of the coefficients

Construct / Item	Loads (λ)	Internal Reliability	Alfa de Cronbach	AVE	R^2	rho_A
Education		0.903	0.857	0.700	Not apply	0.857
Education3	0.859***					
Education4	0.814***					

Education5	0.840***					
Education6	0.832***					
Attitudes		0.880	0.795	0.711	0.248	0.804
Attitudes2	0.783***					
Attitudes3	0.902***					
Attitudes4	0.841***					
Norms		0.836	0.705	0.631	0.184	0.705
Norms1	0.828***					
Norms2	0.825***					
Norms3	0.725***					
Control		0.902	0.836	0.754	0.322	0.837
Control3	0.834***					
Control4	0.892***					
Control5	0.878***					
Intention		0.943	0.909	0.846	0.460	0.915
Intention1	0.903***					
Intention2	0.961***					
Intention4	0.895***					

Validation of the structural Model

- Table 2 shows the evaluation of the model and the hypotheses made based on the literature review and in Figure 2 it is detailed in the PLS nomogram.
- Once the results of the PLS modeling have been obtained, the path coefficients are accepted or rejected and, by extension, the hypotheses formulated that are significant.
-

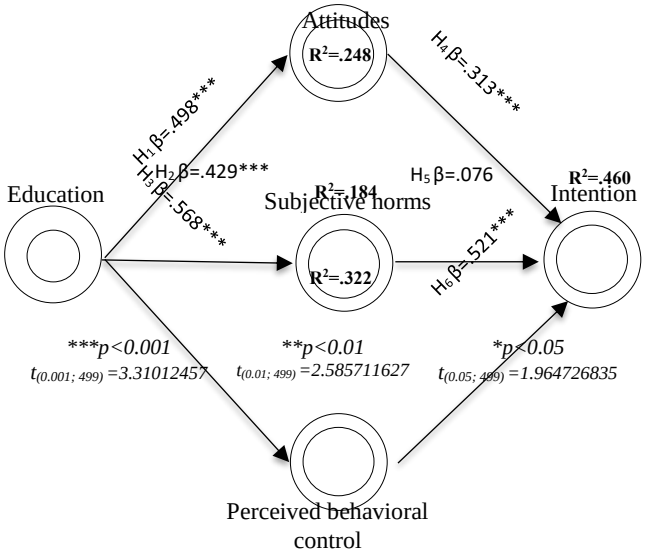
Table 2. Results of the structural model

Hypothesis	f^2	Coefficient Path	t- statistic	p Values	Remarks
H_1. Education →Attitudes	0.330	0.498***	6.210***	0.000	Accepted
H_2. Education →Norms	0.225	0.429***	4.196***	0.000	Accepted
H_3. Education →Control	0.475	0.568***	5.761***	0.000	Accepted
H_4. Attitudes → Intention	0.142	0.313***	3.657***	0.000	Accepted
H_5. Norms → Intention	0.008	0.076 n.s.	0.753	0.451	Rejected
H_6. Control → Intention	0.350	0.521***	5.156***	0.000	Accepted

*** *t*-value> 3.310 (p <0.001), ** *t*-value> 2.586 (p <0.01), * *t*-value> 1.965 (p <0.05), n.s. - not significant.

Source: *Own elaboration based on the results obtained in the SmartPLS 3.2.6 software.*

Figure 2. Model Results: Path Coefficients and Statistical Significance



Source: *own elaboration*

Results and Discussion

Hypothesis 1, of the relationship between the knowledge acquired in the economic-administrative sciences with the increase in attitudes towards the intention to start a business of university students, is accepted showing a path coefficient of 0.498 and a *t-statistic* of 6.210 *** which represents a level of significance higher than 99.9%. It can be seen that education has a significant relationship with attitudes, that is, the knowledge, abilities and skills acquired, it develops in students attitudes conducive to the establishment of their own business.

In hypothesis 2, in relation to the fact that the knowledge acquired in the economic-administrative sciences influences the perception of subjective norms by university students, it is accepted, since it presents a path coefficient of 0.429 and a *t-statistic* of 4.196 ***, these results show a significant relationship between both variables, meaning that the knowledge acquired by students influences how they better perceive the environment in which they operate.

Regarding hypothesis 3, in relation to the fact that the knowledge acquired in the economic-administrative sciences favors a greater perception of behavioral control in university students, it is accepted, with a path coefficient of 0.568 and a *t-statistic* of 5.761 ***, which shows that there is a strong significant relationship between the education received and a greater perception of behavioral

control by the university students in the study area. That is, the knowledge, capacities, and skills acquired by the student in their university studies, promote a greater perception of behavioral control over the actions to be carried out in the future.

Hypothesis 4 of the relationship of attitudes towards intention is accepted, when analyzing the statistics there is a path coefficient of 0.313 *** and a *t-statistic* of 3.657, which translates into a significant relationship between both variables, that is, the attitudes developed in university students through the knowledge, capacities and abilities acquired through the education received, propitiate a significant relationship in the increase of their intentions to start a business.

On the other hand, hypothesis 5, of the relationship of subjective norms towards intention is rejected, since it shows a path coefficient of 0.076 and a *t-statistic* of 0.753. Therefore, there is no significant relationship between both variables. That is, university students, despite having an increased perception of the society in which they live as a result of the education received and does not mean that subjective norms influence the intentions to start a business, perhaps students consider it as an important point however, and this is not an impediment to carry out a certain action.

Finally, hypothesis 6 of the relationship between perceived behavioral control and the intention to start a business is accepted, since it shows a path coefficient of 0.521 *** and a *t-statistic* of 5.156, this translates to greater control behavioral perceived by the student, the greater his intentions to start a business.

It is not surprising that in relation to the results of the model, there is a lesser influence of subjective norms in relation to the intentions to start a business, since as indicated in the theory, despite the fact that subjective norms play an important role within the intentions to start a business, it has been shown that these variables are the one that exerts the least influence of the three factors that precede intentions (Ajzen, 1991; Krueger et al., 2000; Liñán, 2004), for those with greater perceived behavioral control (Ajzen, 2002), as it is in this case in relation to the results obtained.

Conclusions

The evolution in the current economic environment has greatly reduced the security around obtaining a job, fostering in individuals the desire for self-employment. Entrepreneurship activities are essential to obtain financial independence. Therefore, throughout history, business activities have had an influence on the economic development of societies. That is why there is an interest on the part of those in charge of elaborating public policies on how to encourage and promote activities of this type. For this reason, around the world the importance of the progress and training of the entrepreneur has been recognized, as it is fundamental for the social well-being and economic development of a region or country.

Entrepreneurs are considered as agents of innovation in their regions, promoting changes in economic, technological and environmental issues. Consequently, universities play an essential role, being a column in the training of professionals with skills to carry out business projects that can contribute to economic growth and development.

The study of the relationship between education in economic-administrative sciences and the intentions to start a business through the Theory of Planned Behavior, allows determining the degree of relationship between each of these variables. It can be concluded that education in economic-administrative sciences is an incentive for university students towards the establishment of a business. Therefore, it is essential to redouble efforts to maintain the quality of the education that is imparted, in order to continue with an adequate training of the student, creating capacities, attitudes and skills that facilitate the stimulation of creativity, self-sufficiency and personal initiative for the establishment of a business.

The above will allow students to have conducive attitudes towards entrepreneurship, since by stimulating creative thinking in the student, which encourages solutions to problems through innovation coupled with the desire for personal improvement, which forms in them a strong intention towards entrepreneurship. It is important to develop academic programs where these types of activities are reinforced in the student with the aim of increasing the intentions on the part of individuals towards the establishment of their own business.

In the same way, it is necessary to point out that education allows university students to observe a general panorama in terms of what others think compared to what they do, without a doubt, it is crucial, since many times education allows students to see the importance of the environment in relation to the activities they carry out. However, it is necessary to emphasize that even though education influences how students perceive the environment in relation to the behaviors they carry out, it is not an impediment for them in the intentions towards the establishment of a business, since it is necessary to highlight the role of the new generations by not being affected by what others think, they simply do out what they want to do, no matter if they succeed or fail in the tried.

Finally, it is necessary to observe that the university students who are study subjects have a perception of control in relation to the activities they carry out, however, it is important to continue with the strategies to maintain them with that security to carry out the activities and that they can implement your own business.

Undoubtedly, the results found provide those in charge of the institution of higher education with elements to discern the impacts that education in the economic-administrative sciences has on the intentions to start a business, in order to maintain a constant improvement and go implementing

additional programs parallel to professional training in which new skills, abilities and knowledge can be developed in students to cope with today's business world.

Limitations and future lines of investigation

This research entails a series of limitations. First, the results cannot be generalized since the sample only includes business students from a public university in northeastern Mexico. In addition, it should be considered that not only business students may be susceptible to such research, but also those who are in a different field of study may be subjects of study, as they may have intentions in relation to becoming entrepreneurs. Similarly, the study can be covered and carried out in other public and private universities in the region. It would be convenient to analyze the feasibility of creating academic programs to promote intentions and reinforce the three areas of the theory of planned behavior with the purpose of enhancing the same in relation to the needs detected in the student's subject of study in order to be able to provide them with a better quality education that has an impact on a comprehensive training and that in turn leads to an impact on the development and economic growth of the region.

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