

## **Factores que afectan la experiencia de emprendimiento en estudiantes universitarios. Un estudio en una institución privada en Mérida, Yucatán, México**

### **Factors that affect the experience of entrepreneurship in university students. A study in a private institution in Merida, Yucatan, Mexico**

Francisco Gerardo Barroso Tanoira<sup>1</sup>, Raúl Alberto Santos Valencia<sup>2</sup> y María Eugenia López Ponce<sup>3</sup>

**Palabras clave:** emprendedores; educación para emprendimiento; incubación; emprendimiento; educación superior

**Keywords:** entrepreneurs; entrepreneur education; incubation; entrepreneurship; higher education

Recibido en: 22-10-2019 / Aceptado en: 27-01-2020

#### **Resumen**

**Introducción:** Es importante educar a jóvenes estudiantes universitarios para que se adapten a los cambios sociales, económicos y ambientales que presenta el mundo. No se trata de prepararlos solamente para ser empleados, sino emprendedores que puedan ser líderes en sus campos, creando empleos y mejorando la calidad de vida de la gente. Para ello hay programas de emprendimiento basados en incubación de proyectos de alto impacto, pero existe el riesgo de que los alumnos se den de baja de dichos programas. Por esto, el objetivo de este estudio fue identificar los factores que afectan positiva y negativamente la experiencia de emprendimiento de estudiantes universitarios desde la percepción de aquellos que ya han incubado un proyecto.

**Método:** El enfoque del estudio fue cualitativo, de alcance exploratorio y descriptivo, con diseño no experimental transversal. Participaron veinte estudiantes universitarios que ya han incubado un proyecto, el cual ya ha sido registrado en el Sistema de Administración Tributaria y legalmente constituido como empresa, además de haberse involucrado activamente en actividades de emprendimiento a lo largo de su proceso educativo en la institución. Todos eran de una escuela privada situada cerca de la ciudad de Mérida, Yucatán, en el sureste de México, reconocida por la formación de emprendedores y por sus procesos de incubación y aceleración. Se utilizó una guía de entrevista semiestructurada conducida por los investigadores, la cual consiste en seis preguntas abiertas.

**Resultados:** Los factores que afectan positivamente a los estudiantes para ser emprendedores son de tipo personal, tales como la motivación intrínseca y la oportunidad para ser creativo y

<sup>1</sup> Universidad Anáhuac Mayab, División de Negocios. E-mail: francisco.barroso@anahuac.mx

<sup>2</sup> Instituto Tecnológico de Mérida

<sup>3</sup> Instituto Tecnológico Superior de Calkiní. Campeche

dedicarse a una actividad interesante, aceptando los riesgos. Esto se ve reforzado por la ayuda del coach, la asistencia a eventos, conferencias y talleres, así como la retroalimentación constante por parte de paneles de expertos. Los que afectan negativamente la experiencia de emprendimiento son principalmente externos, tales como la falta de fondos monetarios para vivir mientras el proyecto es incubado, debido a que cuando hay recursos, éstos son solo para el proyecto. También hay otros factores internos como el miedo a cometer errores y la falta de experiencia para iniciar un negocio.

**Conclusiones:** Los factores que previenen el desarrollo del emprendimiento dependen de cada participante más que del método. El estudiante debe tener tiempo para el proyecto y para continuar sus cursos sin la necesidad de buscar un trabajo para vivir durante la incubación. Entonces, deben implementarse estrategias que garanticen tiempo y recursos monetarios para que los estudiantes no tengan distractores que se conviertan en barreras al emprendimiento. Además, los planes de estudio universitarios deben ser mejorados para fomentar la creatividad, la innovación y el emprendimiento desde etapas iniciales. Las incubadoras deben ser lugares que faciliten la inserción de nuevas empresas en redes y crear clústeres universitarios.

## **Abstract**

**Introduction:** It is important to educate young university students for adapting to social, economic and environmental changes in the world. It is not to prepare them just to be employees, but entrepreneurs who could be leaders in their fields, creating jobs and improving people's quality of life. For this, there are entrepreneurship programs based on high impact project incubation, but there is still the risk of dropping out. For this, the objective of this study was to identify the factors which positively and negatively affect the entrepreneurship experience in university students, from the perception of young students who have already had an incubated project.

**Method:** The study approach was qualitative, with an exploratory and descriptive type and a non-experimental and transverse design. The participants were twenty students who have already had an incubated project, registered at the Tax Agency and legally constituted as an enterprise, besides of their involvement in entrepreneurship activities along their education process at the institution. All of them were from a private university situated near Mérida city, Yucatán, in the Southeast of México, acknowledged for its entrepreneurship education as well as for its

incubation and acceleration processes. A semi-structured interview guide was used, conducted by the researchers.

**Results:** The factors that positively affect students to become entrepreneurs are personal ones, such as intrinsic motivation and the opportunity to be creative and dedicate to an interesting activity, accepting the risks. This is reinforced by the help of the coach, attendance to events, lectures and workshops, as well as constant feedback from expert panels. The ones which negatively affect the entrepreneurial experience are mainly external, such as the lack of monetary funds for living while the project is incubated, because when there are monetary resources, they are just for the project. There are also other internal factors such as the fear for making mistakes and the lack of experience for starting a business.

**Conclusions:** The factors which prevent the entrepreneurship development depend on each participant more than in the method. The student must have time for the project and to continue his courses without the need to search for a job for making a living along the incubation. Then, there must be strategies to guarantee time and monetary resources so students don't have distractors which could become entrepreneurship barriers. Besides, university study plans must be improved for enhancing creativity, innovation and entrepreneurship from initial stages. Incubators must be places for enhancing insertion of new enterprises in nets and create university clusters.

---

## **Introduction**

In the past, as Barroso (2013) reports, there were efforts in Mexican public and private institutions for enhancing entrepreneurship in university students through a national program called DESEM (Entrepreneur Development in Spanish). It was great to see them organized in teams and presenting their products to be sold. With the aid of a teacher as a mentor, they had to detect a market need, come out with a solution, design the product and finally show and sell it. There was a detailed record of activities and financial statements as in a real enterprise, sharing dividends with shareholders who were usually relatives or friends, although there were some cases in which the investors were external. At the end of the semester there was a kind of business fair in which students presented their products to the public and had sales. However, asking them if they were going to continue the business, only 20% answered positively. For the

80% remaining it was just a school assignment to complete for earning a good grade. There was the narrow view in those students that the important thing was the grade beyond the entrepreneurship experience. And if the student was not working in real life, it was difficult for him or her to discover the way to be an entrepreneur.

What is it necessary for enhancing entrepreneurship in education institutions? There's the general idea that it is teaching a course in which they study critical thinking, creativity and innovation. According to Barroso (2012), that's not enough because there's no significant relation between critical thinking and entrepreneurship competencies. Besides, higher scores in inference tests showed an inverse relation with tenacity, which suggests that students with more capability for inference show less efforts for achieving their goals. This could be due to family patterns or cultural issues.

Once, a new graduate who had a project in incubation process asked the authors of this document about where to get a job for her, even a part time one, because she needed to cover her personal expenses along the incubation period. And this has been the same with other students and entrepreneurs because when there are federal or state resources for supporting projects, the money is only for the project (surveys, studies, marketing, accounting and legal factors), but not for the entrepreneur, who has to see how to get resources for making a living. It seems that the lack of economic resources is one of the main causes for dropping out and leave unfinished projects. It is good to have support for incubation projects, but if the entrepreneur can't support his basic needs, the probability of dropping out is high.

There have been important efforts for enhancing entrepreneurship in Mexico through incubation, courses, activities and monetary incentives to projects to change the mentality that the important is finishing studies with a good grade. It is to help the student see that entrepreneurship is an effective way for making talent and opportunities meet, creating new jobs and opportunities. Abandoned projects result in a waste of talent, time and money, becoming a source of frustration both for the school or incubator and for the entrepreneurs themselves. Which factors have a positive influence in the process of entrepreneurship? Which are the barriers to be an entrepreneur? For this, the participants of this study were young entrepreneurs from a high impact incubator in the city of Merida, Yucatan, in the Southeast of Mexico, because of their experience in a quality starting-up process.

## **Objective**

It is to identify the factors which positively and negatively affect the experience of entrepreneurship in university students, from the perception of young students who have already had an incubated project in a high impact incubator.

## **Benefits of the study**

Educating in entrepreneurship has great relevance especially today because it is not just to work in already existing jobs, but creating job opportunities to solve the main needs of society. For this, students (and all entrepreneurs) must learn how to be managers of their own learning and not just to execute orders. The only way for helping the national economy growth is creating new jobs to improve people's quality of life, contributing to the development of the country.

## **Limits of the study**

The information generated here is valid only for the study participants, although the methodology could be replicated in other contexts. The information was gathered in the first semester of 2017.

## **Literature review**

### **Creativity, critical thinking and innovation**

Creativity is essential for humans, with implications in every aspect of life (Castillo-Vergara, Barrios, Jofré, Álvarez-Marín and Acuña-Opazo, 2018). It is a significant driver for entrepreneurial processes because it helps discover new business opportunities and emphasizes the important role of innovation and entrepreneurship as sources of economic growth. On the other hand, for Robbins and Judge (2013), critical thinking is related to creativity, but not necessarily to entrepreneurship. For them, creativity consists of three components: (1) Competence, which refers to knowledge and skills about what is going to be done; (2) Critical and creative thinking, which includes the orientation to develop something new and different, capability for mental calculation, inference and deduction; and (3) Intrinsic motivation. De Bono (1996) indicates that a deficient education is responsible, in a great extent, for the lack of creativity and creative thinking because many school programs have been designed for students to be approved in class just repeating the answers the teachers want to hear, without necessarily being the most original ones.

For Gupta (2012), an innovation is such if it creates value, while for the OECD (Organization for Economic Co-operation and Development), quoted by Saridakis, Idris, Hansen and Dana (2019), it is defined as the implementation of a new or significantly improved product (goods or service) or process or a new marketing method or organizational method in business practice. Innovation is a tool that contributes to increase performance and create competitive advantages (Castaño, Mendez and Galindo, 2016).

Many school programs focus on the answers which appear in textbooks (Clegg and Birch, 2001), favoring rational thinking over intuition (Gámez, 1998), without considering that education is important for innovation and entrepreneurship for contributing to economic growth, for which programs must enhance curiosity, initiative and creativity (Castillo-Vergara *et al.*, 2018). Gupta (2012) mentioned that learning about innovation is not just gathering and stocking knowledge because the objective of education is to prepare and empower students for creating value in their actions. As David Ben-Gurion, quoted by Senor and Singer (2011), said: “All the experts are experts on what was. There is no expert in what will be. To become an ‘expert’ on the future, vision must replace experience” (p. XIII). So, school programs must be focused on helping students how to learn and have the vision for becoming innovators and entrepreneurs.

## **Entrepreneurship**

Entrepreneurship is to do something or start a business, especially if it is difficult or dangerous (Diccionario de la Real Academia Española, 2014). It's a project developed with effort and facing difficulties for reaching the goal. However, in business and economics, it is the initiative of an individual that assumes an economic risk or invests resources with the objective of getting a benefit from an opportunity offered by the market. For Robbins, Coulter and Decenzo (2017), it's the process of creating a new business as a response to the opportunities detected, so it is a process through which an individual or group creates value and growth, satisfying wishes and needs through innovation.

Kuratko, quoted by Kyndt and Baert (2015), suggests that the entrepreneur is the person who takes, manages, organizes and assumes the risks of a business, being an innovator or a developer. He seizes opportunities and converts them into workable or marketable ideas, realizing the rewards from these efforts. According to Ashby (2018), entrepreneurs require self-realism, honesty in planning, ability to understand defeat and success, as well as imagination.

They need to know themselves and be willing to work in an environment which is different to others.

Entrepreneurship is especially important in crisis periods (Thurik and Wennekers, 2004; Duarte, 2007), and this is why the government in different countries are giving more support to entrepreneurs. In a few words, an entrepreneur seeks and identifies business opportunities, taking the corresponding risks.

In a study performed in the United States, Great Britain and the Gulf Cooperation Council States (Saudi Arabia, Kuwait, the United Arab Emirates, Qatar, Bahrain and Oman) by Al-Mubaraki and Buster (2017), entrepreneurship was successful in incubation programs because of: (1) The high survival rate (81-90%) of small or medium sized firms per year; (2) Over fifty jobs created per year per incubator, and (3) A high number of graduate and client companies (around 25 per year). However, for global incubator performance, Bennett, Pérez-Bustamante and Saura, (2017) report that success rate is 85% (range: 60-100%); annual growth in tenant (incubate) turnover is 20% (range: 5-100%); jobs created per firm is 6.2 (range: 1-20); and new graduate jobs per incubator is 41 (range: 7-197).

For Start-Up Promotion for Entrepreneurial Resilience (2018), factors that positively affect the entrepreneurial experience of higher education institution students are:

- 1) Strong collaboration with large firms, academia, public institutions and other incubators to approach market needs
- 2) Availability of training opportunities
- 3) Availability of experts for guidance and feedback
- 4) Available funds for operating incubators
- 5) Pertinent and useful information for entrepreneurs about the market
- 6) Monitoring program.
- 7) Support after three years for not leaving enterprises alone
- 8) Setting a realistic schedule for how long the business could stay in the incubator.

Al Mubaraki and Buster (2017) indicate that successful entrepreneurship and innovation programs are expected to result in: (1) Contribution to economic development through job creation; (2) A stronger entrepreneurship environment; (3) Technology commercialization and

transfer for graduated companies; (4) Sustainability of graduated companies with a high rate of survival; (5) Innovation and acceleration of smart product and services; and (6) Diversification of the economy from companies' outcomes such as innovation and technology.

### **Barriers to entrepreneurship**

For Bruneel, Ratinho, Clarysse and Groen (2011), incubators have evolved over the time. First generation incubators (1980's) offered space and shared resources, aimed to get economy scales. Second generation incubators (1990's) gave business support through coaching and training for accelerating learning curves, but third generation incubators (2000 +) offer access to networks and external resources, knowledge and legitimacy.

Because of the high probability of start-up failure, universities have implemented incubation processes to prepare such companies until they are ready for the market. However, the evidence of incubation success is inconsistent, although there is a higher probability of survival when the start-up has been incubated (Bennett, *et al.*, 2017). Although there are benefits for entrepreneurs in incubators, such as paying rent below market prices for office space, support among incubates, available consulting services and an innovation enhancing environment, there are barriers in the process (Al-Mubarak and Busler, 2017).

According to Kwapisz (2019), a formal (legal) or informal (socio-cultural) environment determine an individual's decision to create a business, so organizations could encourage entrepreneurship providing an appropriate environment, or affect it negatively imposing barriers. For Barroso, Santos and Ávila (2014), the barriers against entrepreneurs are lack of financial resources, insufficient technical experience and problems within the organization, such as leadership, vision and interest for doing new things. In the Southeast of Mexico, for example, many micro and small business entrepreneurs do not have or do not know about governmental supporting programs for creating, financing, developing or strengthening their competencies. This is important because, according to van Stel, Storey and Thurik (2007), capital influences nascent young businesses more than entry regulations.

In incubation programs there is always a coach for directing, supporting, following up and giving feedback to different projects. Such help starts with the problem and customer definition and finishes with the legal constitution of the start-up. That coach is a link between participants and authorities in an incubator, as well as with different specialists to help the students overcome

those barriers (Barroso *et al.*, 2014). However, Kwapisz (2019) suggests there must be more and better education regarding legal regulations.

### **Incubators**

For Davis (2009), quoted by the Start-Up Promotion for Entrepreneurial Resilience (2018), incubators must be a way for meeting a variety of economic and socio-economic policy needs, which include employment and wealth creation, support for small firms with high growth potential, transfer of technology, promoting innovation, enhance links between universities, research institutions and the business community, industry cluster development and assessment of a company risk profile.

Incubators accept startups from venture applicants who are still in a formative stage, but nascent entrepreneurs face complex challenges in mobilizing enough resources, problems with legal recognition, creating awareness among potential customers and favorable negotiation terms with suppliers. For Al-Mubarki and Busler (2017), the main weaknesses of incubators in developing countries are: (1) Focus on tangible services rather than intangible services; (2) Dependence on government actions; (3) Lack of management and qualified staff; and (4) Lack of incubator planning and creativity in solving problems. However, Bennett *et al.* (2017) suggest that the main factor for failure is lack of organized networking, which is important because most international studies are focusing on the importance for incubators as mechanisms for embedding new companies within networks, so access to networks plays a major role for start-ups and small companies. Cooperation within incubators and the use of data technologies are crucial for survival.

The challenge for incubators is to enable fast learning opportunities through business coaching and granting entrepreneurs access to different types of resources and services through their institutionalized networks (Nair and Blomquist, 2019), so contemporary adoption of concepts like co-creation (McAdam, Miller and McAdam, 2016), open innovation, fast fail (Blank, 2013), virtual incubation and networked physical spaces is possible. All of this must enable people to understand success and failure in management practices and see incubation from a new perspective.

To receive economic resources via funds or grants, entrepreneurs must verify that the results are measurable, realistic and justifiable. It is necessary to examine the project and be

prepared to overcome the problems. Patience and perspectives on prosperity are also desirable to persuade investors (Aubrey, 2014). Finally, for Rose and Hoffman (2014), what investors are looking for is a project performed by somebody with great vision. A brilliant idea without execution is worth 20 USD, but that brilliant idea with brilliant execution could be worth 20 million USD. So, more than just ideas, they want to see execution. Al-Mubarak and Busler (2017) found that there are programs in which incubates receive a grant, but most of the resources are dedicated just to project incubation or development

### **Entrepreneurship competencies**

For Barroso (2013), the most critical factors to be considered in teaching students entrepreneurship competencies are: (1) To enhance the willingness of becoming entrepreneurs; (2) Tolerance to risks; (3) Prioritize; (4) Vision; (5) Goal setting; and (6) How to combine work and family. Entrepreneurship depends more on attitude than on knowledge or ability, so the best way to teach it is through examples and testimonies. It is necessary to involve students in entrepreneurship projects and invite those successful entrepreneurs in the region to share experiences, awaking in students the desire of becoming entrepreneurs. Emphasis in negotiation, sense of belonging, sensitivity to the environment and teamwork are essential for all this. Many of the students who are entrepreneurship oriented, no matter if they are from public or private institutions, come from families with business or their parents are entrepreneurs. And if they had a business now, 69.7% would dedicate to service; 63.6% to commerce; 33.33% to production; and 27.3% to governmental affairs. The total is not 100% because the activities are not mutually excluded. However, it could be seen that business competencies are above technical and human ones and that there is a prevalence of intangible services over tangible ones.

Although 96.9% feel competent for starting a new business, only 72.2% are prepared to do it. Among the most important causes for failure, lack of experience (51.5%); lack of knowledge about the market (30.3%); and poor knowledge about finance affairs (18.2%) could be found. This means that beyond technical issues in the curriculum, it is important to involve students more in entrepreneurship, for which the cooperation among schools, the Government and business owners is essential (Barroso, 2013).

For Kindt and Baert (2015), the most important entrepreneurship competencies are perseverance, self-knowledge, orientation towards learning, independence, network building,

ability to persuade others, seeking opportunities and developing an insight into the market, as well as having a social and environmentally conscious conduct. However, the ones which predict long term entrepreneurship orientation are perseverance and insight into the market. It is interesting to see that being social and environmentally conscious predict entrepreneurship negatively in the long run, and that having an educational degree is a positive predictor of entrepreneurship.

## **Method**

### **Type and design**

The study is qualitative because it approaches the problem from the actors' perspective, this is, it seeks for gathering information from the perspective of those involved in the problem. The type is exploratory and descriptive, with a non-experimental design because there's no deliberate manipulation of information, so the researcher just gathered information. Besides, it's transverse because all individuals participated just once, without follow up (Hernández, Fernández and Baptista, 2014). The method is inductive through a field study in one analysis unit.

### **Participants**

As key informants, twenty university students participated. They were invited because they had an already incubated project, registered at the Tax Agency and legally constituted as an enterprise, besides of their participation in entrepreneurship activities along their education process at the institution. The students were from a private university situated near Merida City, and which is prestigious in entrepreneurship education and because of the incubator and accelerator it has. This institution was selected because since 2014 it was reported as one of the two high impact incubators in the state of Yucatán, México (Duarte, 2014), acknowledged by its entrepreneurship methodology and the results achieved. The incubator is a third generation one (Burneel *et al.*, 2011).

The average age for participants was 21 years old and 40% are women. Regarding the major, 30% were studying Business Administration; 35% International Business; 20% Industrial Engineering; and 15% Mechatronics or related.

## Instrument and procedure

There was a semi-structured interview guide in which participants were asked about factors which helped or were barriers in their entrepreneurship process. It consists of six open questions as it can be seen in the results section. The first one is asking about what helped in the entrepreneurship process, which could be related to the person, education or other factors. The second tries to identify the barriers to become an entrepreneur; the third looks for the difficulties in the process; the fourth asks the participant about what he/she would change for improving the process, and the fifth is about what the participant would suggest others for becoming entrepreneurs. There was a section for general comments at the end. It is important to say that two experts were invited to verify content and construct validity (Hernández *et al.*, 2014). The interviews were conducted by the researchers in a face to face session according to the entrepreneur's schedule, taking between 30 to 45 minutes.

The answers were grouped identifying the mentions by frequency, assigning a key idea to each group. These key ideas were in turn classified in categories, which were the questions in the interview guide (Taylor, Bogdan and De Vault, 2016). As all participants are in similar conditions, all comments were given the same weight.

## Results

Results are presented according to the interview guide. The percentage of mentions is shown in every figure.

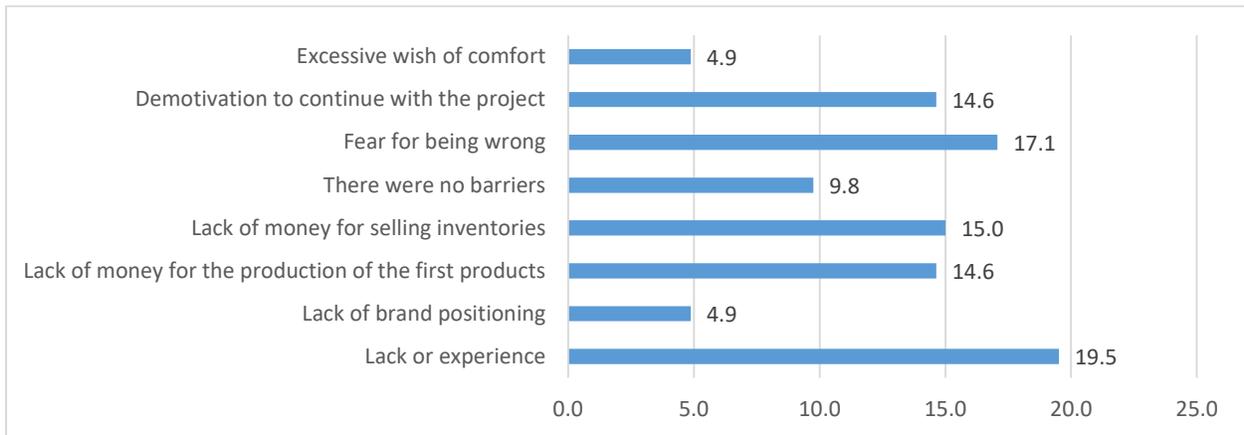
### 1) What helped you most in your entrepreneurship process?



Fig. 1. What helped students most for entrepreneurship (%).

As it can be seen, the most helpful actions or factors were the coach mentoring, attendance to events, lectures or workshops and getting feedback. It is necessary work on student’s definition about their projects, especially when they come from different careers and backgrounds different to administrative ones, as well as help in branding. All of this is consistent with Al Mubarak and Buster (2017) and the Start-Up Promotion for Entrepreneurial Resilience (2018) regarding success in entrepreneurial experience for students in incubation programs.

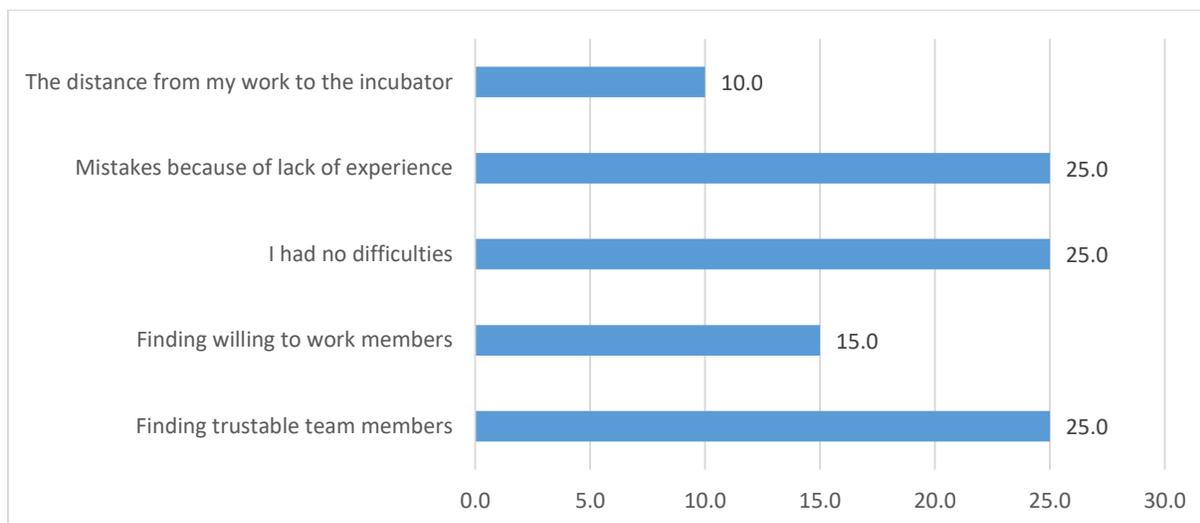
**2) Which barriers affect you during the process?**



**Fig. 2.** Barriers affecting during the process (%).

The most important was lack of previous experience about how to start a business, followed by fear to make mistakes and lack of financial resources for starting and making the first products, as mentioned by Barroso *et al.* (2014). There was also poor of brand positioning, which is logical because the product or service was new. It was noted that one of the problems was excessive comfort seeking, because an entrepreneur must always be looking for challenges and how to satisfy customer needs and expectations. However, 9.8% of the respondents said there were no problems at all.

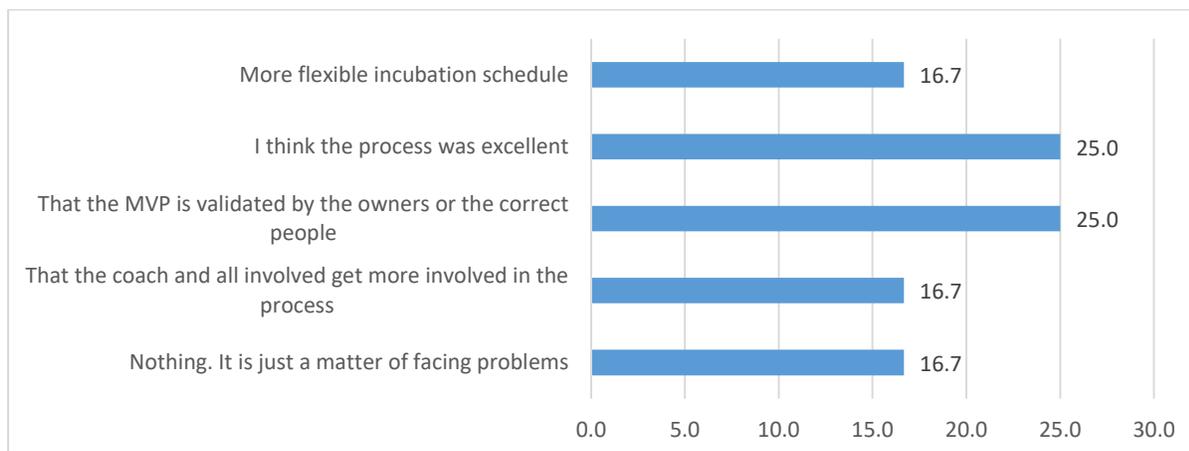
### 3) Difficulties in the process (%)



**Fig. 3.** Difficulties along the process (%).

Most difficulties were due to mistakes because of lack of experience, and those regarding team formation. Some of them said the distance was a factor. However, 25% indicated that there were no problems at all, so the process was fluid for them.

### 4) If it were in your hands, what would you include in the process for making the process easier? What would you change? What would you eliminate?



**Fig. 4.** What would you change in the program? (%).

What the students would change is that the MVP (minimum value product) was validated by the owner or the correct people, not by those who are not empowered to make changes or have no relation to the project. Even when there was support from the coaches, more involvement was

expected from them. Schedules must be more flexible. However, 41.7% would not make any change, including those who perceived the program as excellent.

### 5) What would you suggest others to be entrepreneurs?



**Fig. 5.** Suggestions to become entrepreneurs (%).

Recommendations are to have a valuable product and difficult to imitate, dedicate time, learn from mistakes, avoid fear and despair. Be motivated and passionate for research. Besides, it's common that students start the entrepreneurship program with a preconceived idea they like, but don't know if it satisfies the market. It's better to look for a problem and then, think in the product.

The sixth question was regarding general comments. All participants are willing to start another project in the future and agreed that the incubation process worked well in general, helping them to create a business model. They learned a lot from incubation and understand the importance of sustainability. However, everybody mentioned the importance of having monetary resources for them because funds are exclusively for the projects, especially because most of them come from the government, but even private funded resources are just for the project. If there were money for the entrepreneurs, they could dedicate to their projects without distractors and more people would be motivated to start up a business. This is the most important reason for dropping out a project, followed by time for dedicating to the project once entrepreneurs have to work for making a living. It is difficult to combine a job with an incubator.

## **Discussion**

The factors which have positive influence in the entrepreneurship experience are the coach mentoring, attendance to events, as well as attention and constant feedback along the incubation, which is consistent with Barroso (2013). Low rent for office space, support among incubates and available consulting services help a lot, as it was mentioned by Al-Mubarak and Busler (2017). The incubation program and the entrepreneurship experience were helpful because they enhanced the use of creativity and critical thinking (Castillo-Vergara *et al.*, 2018) and fostered intrinsic motivation (Robbins and Judge, 2013), so the students felt empowered as Gupta (2012) suggested. They understand the importance of innovation (Saridakis *et al.*, 2019) and the creation of competitive advantages (Castaño *et al.*, 2016). Success factors indicated by the Start-Up Promotion for Entrepreneurial Resilience (2018) are followed, but the funds are only for operating the programs. However, the negative factors, which were consistent with Barroso *et al.* (2014), do not depend on the program but on the entrepreneur, as lack of previous experience, fear for making mistakes and lack of experience, which could be solved through the incubation program. Besides, product and service validation processes must be improved to include the correct target people and paid with the project funds. There are also external factors such as lack of resources, which influence nascent young businesses (van Stel *et al.*, 2007) and must be solved by linking the projects to fund or venture capital organizations, the Government or investors.

The most important finding is the need, from the participants' perspective, of having monetary resources for personal expenses while they are in a funded incubating process, and knowing that this is the most frequent cause for dropping out, especially when they have to combine a job with the incubator. It was expected to find this as a barrier to entrepreneurship in the literature, but the mentioned did not include it specifically. Then, part of the money assigned to a project must be for the entrepreneur, so he/she could dedicate to his/her project completely and without unnecessary distractors.

Another finding is that even when the incubator is a third generation one (Bruneel *et al.*, 2011), students were satisfied with a second generation incubator service. This could mean that students must develop entrepreneurial competencies for demanding access to business networks, knowledge and legitimacy, taking advantage of all the benefits from their incubation programs.

## **Conclusions**

The factors that positively affect the entrepreneurial experience and motivate students to become entrepreneurs are personal ones, such as intrinsic motivation and the opportunity to be creative and dedicate to an interesting activity, accepting the risks. The ones which negatively affect the experience of entrepreneurship are external, such as lack of monetary funds for making a living while the project is incubated. When there are Federal or State funds, they are for the project, not for the entrepreneurs. This money could be given to them as a grant or stipend when their projects are approved and depending on the incubation time, so it must be considered in the budget submitted for funds if the guidelines allow this. Besides, it could also be provided by Angel Investors or any other venture capital fund with transparency, so entrepreneurs must be persuasive to communicate their ideas attractively and calculate their costs in a realistic way. Having information for submitting their projects to the correct funds is an advantage, but start-ups must be willing to avoid predatory funds.

Another factor for developing a project is having time for it because some students must continue their courses and find a job to get resources. However, some personal factors may also arise, such as lack of experience, fear for making mistakes and problems for working in teams. So, there must be time and monetary resources for the students for not having distractors that become entrepreneurship barriers. Besides, education curriculums must change as De Bono (1996) suggests, enhancing the improvement of entrepreneurial competencies, as mentioned by Kyndt and Baert (2015); Ashby (2018); Kwapisz (2019); and Barroso (2013).

Educating entrepreneurs, especially since they are students, is a good strategy for helping them change their mindset, become innovation oriented and create jobs, which will help them become leaders in society and contribute to the local and national economy. Universities and the school system in general must make more efforts for educating in entrepreneurship to reduce inequality, improve quality of life and make a better world to live.

## **Future studies**

Further improvements will be monitored. Besides, this methodology will be replicated with more students and with new grads who are already working in their startups to check if they are using their entrepreneurial competencies. Other possible barriers related to background, culture, gender, age, nationality and education system must be studied in the future.

## References

- Al-Mubarak, H. M. and Busler, M. J. (2017). Challenges and opportunities of innovation and incubators as a tool for knowledge-based economy. *Journal of Innovation and Entrepreneurship*, 6(15). DOI: <https://doi.org/10.1186/s13731-017-0075-y>
- Ashby, B. (2018). Entrepreneurship. *Industrial Heating*, 85(5), 14. Available at <http://web.a.ebscohost.com/ehost/pdfviewer/pdfviewer?vid=1&andsid=ee92f5ea-e96b-4734-9a4a-3cc1170dce0e%40sdc-v-sessmgr05>
- Aubrey, S. B. (2014). *Find Grant Funding Now!: the Five-Step Prosperity Process for Entrepreneurs and Business*. Hoboken, New Jersey: Wiley.
- Barroso, F. (2012). Pensamiento creativo y competencias emprendedoras de alumnos de licenciatura. Un estudio en el sureste de México. [Creative thinking and entrepreneurship competencies of undergraduate students. A study in the South East of Mexico]. En *Memorias del XVI Congreso Internacional de Contaduría, Administración e Informática*. FCA-UNAM. Ciudad Universitaria.
- Barroso, F. (2013). El emprendimiento como competencia. [Entrepreneurship as a competency] *Emprendedores*, 143, 52-56.
- Barroso, F., Santos, R. A. and Ávila, J.I. (2014). Diseño y validación de un modelo conceptual para el desarrollo de micro y pequeños empresarios con base en sus competencias emprendedoras y rasgos de idiosincrasia. Un estudio en el estado de Yucatán. [Design and validation of a concept model for the development of micro and small Business owners based on their entrepreneurship competencies and idiosyncrasy features]. *Proceedings from the XVIII Congreso Internacional de Investigación en Ciencias Administrativas*. Academia de Ciencias Administrativas, A. C. Universidad Autónoma de Baja California.
- Bennett, D., Pérez-Bustamante, D. and Saura, J. R. (2017). University incubators may be socially valuable, but how effective are they? A case study on business incubators at universities. In M. Peris-Ortiz, J. Alonso-Gómez, J. M. Merigó-Lindahl and C.Rueda-Armengot (Eds.), *Entrepreneurial universities. Exploring the academic and innovating dimensions of entrepreneurship. Innovation, technology and knowledge Management* (pp. 165-178). U.S.A.: Springer International Publisher.
- Blank, S. (2013). Why the lean start-up changes everything, *Harvard Business Review*, 91(5): 63–72.

- Bruneel, J., Ratinho, T., Clarysse, B and Groen, A. (2011) The evolution of business incubators: Comparing demand and supply of business incubator services across different incubator generations. *Technovation*, 32,110-121.  
<https://ris.utwente.nl/ws/files/6809752/evolution.pdf>
- Castañó, M. S., Méndez, M. T. and Galindo, M. A. (2016). Innovation, internationalization and business growth expectations among entrepreneurs in the services sector. *Journal of Business Research*, 69(5), 1690-1695. DOI: <https://doi.org/10.1016/j.jbusres.2015.10.039>
- Castillo-Vergara, M., Barrios, N., Jofré L., Álvarez-Marín, A. and Acuña-Opazo, C. (2018). Does socioeconomic status influence student creativity? *Thinking Skills and Creativity*, 29, 142-152. DOI: <https://doi.org/10.1016/j.tsc.2018.07.005>
- Clegg, B. and Birch, P. (2001). *Creatividad al instante*. [Instant creativity]. México: Gránica.
- De Bono, E. (1996). *El pensamiento creativo*. [Creative thinking]. México: Editorial Paidós Mexicana.
- Duarte, F. (2007). Emprendimiento, empresa y crecimiento empresarial. [Entrepreneurship, Business and enterprise growth], *Contabilidad y Negocios*, 2(3), 46-56.  
<http://www.redalyc.org/articulo.oa?id=281621764007>
- Duarte, I. (September 30<sup>th</sup> 2014). *Yucatán solo cuenta con 5 incubadoras de negocios* [Yucatán has only five business incubators]. Milenio Novedades.  
<https://sipse.com/milenio/yucatan-incubadoras-negocios-alto-impacto-113946.html>
- Entrepreneurship. (2014). In *Diccionario de la Real Academia Española*. [Royal Spanish Academy Dictionary] (23rd. ed.). <https://dle.rae.es/emprender#6Ssvgcg>
- Gámez, G. (1998). *Todos somos creativos*. [We all are creative] Barcelona: Ediciones Urano.
- Gupta, P. (2012). *The innovation solution. Making innovation more pervasive, predictable and profitable*. U.S.A.: Accelper Consulting.
- Harper-Anderson, E. and Lewis, D.A. (2018). What makes business incubation work? Measuring the Influence of Incubator Quality and Regional Capacity on Incubator Outcomes, *Economic Development Quarterly*, 32(1), 60-77.  
DOI: <https://doi.org/10.1177/08912424177419>
- Hernández, R., Fernández, C. and Baptista, P. (2014). *Metodología de la investigación* [Methodology of research] (6<sup>a</sup>. ed.). México: Mc. Graw Hill.

- Kyndt, E. and Baert, H. (2015). Entrepreneurial competencies: Assessment and predictive value for entrepreneurship. *Journal of Vocational Behavior*, 90, 13-25.  
DOI: <https://doi.org/10.1016/j.jvb.2015.07.002>
- Kwapisz, A. (2019). Do government and legal barriers impede entrepreneurship in the U.S.? An exploratory study of perceived vs actual barriers. *Journal of Business Venturing Insights*, 11. DOI: <https://doi.org/10.1016/j.jbvi.2019.e00114>
- McAdam, M., K. Miller, and R. McAdam (2016). Situated Regional University Incubation: A Multi-level Stakeholder Perspective, *Technovation*, 50–51: 69–78
- Nair, S. and Blomquist, T. (2019). Failure prevention and management in business incubation: practices towards a scalable business model, *Technology Analysis and Strategic Management*, 31(3), 266-278. DOI: 10.1080/09537325.2018.1495325
- Robbins, S. P., Coulter, M. and Decenzo, D. A. (2017). *Fundamentos de administración* [Administration foundations] (8<sup>a</sup>. ed.). (M.L. Amador, Trad.) México: Pearson.
- Robbins, S. and Judge, T. (2013). *Comportamiento Organizacional* [Organizational behavior] (15<sup>th</sup>. ed.) (J. L. Brito, Trad.) México: Pearson.
- Rose, D. S. and Hoffman, R. (2014). *Angel investing: the Gust guide to making money and having fun investing in startups*. New York: John Wiley and Sons, Incorporated.
- Saridakis, G., Bochra, I., Hansen, J. M. and Dana, L. P. (2019). SME's internationalization: When does Innovation matter? *Journal of Business Research*, 96, 250-263.  
DOI: <https://doi.org/10.1016/j.jbusres.2018.11.001>
- Senor, D. and Singer, S. (2011). *Start-up nation. The story of Israel's economic miracle*. New York: Twelve.
- Start-Up Promotion for Entrepreneurial Resilience (2018). *Critical success and failure factors of business incubation in hei*. European Union: author/Erasmus+/Key Action 2/Strategic Partnerships.
- Taylor, S. J., Bogdan, R. and De Vault, M. L. (2016). *Introduction to qualitative Research methods: a guidebook and resource* (4<sup>th</sup> ed.). New Jersey: John Willey and Sons.
- Thurik, R. and Wennekers, S. (2004). Entrepreneurship, small business and economic growth. *Journal of Small Business and Enterprise Development*, 11(1), 140-149.

Van Stel, A, Storey, D. J. and Thurik, R. (2007). The effect of business regulations on nascent and young business entrepreneurship. *Small Business Economics*, 28(2-3), 171-186.  
<https://link.springer.com/article/10.1007%2Fs11187-006-9014-1>