

64th ICSB World Congress
June 2018 – Cairo, Egypt
The Future of Entrepreneurship

**ENTREPRENEURIAL PROFILE AND DIMENSIONS OF STUDENTS
AT A PRIVATE UNIVERSITY IN PUERTO RICO**

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Track: Academic entrepreneurship, Youth Entrepreneurship
Keywords: Academic entrepreneurship, university students

SYNOPSIS

During the past decades, there have been numerous studies regarding entrepreneurship activity from the academic community because of its positive impact in the economy (Zahra, Wright & Abdelwagad, 2014), in the employment market and as professional development (Vázquez-Burgete, Lanero, Raisiene, & Purificación García, 2012). This study evaluated the entrepreneurial profile's dimensions based on entrepreneurial mindset, managerial /administrative, technical skills, personal and family features, and financial considerations among university students from different majors. It also analyzed if there is a significant

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difference regarding the entrepreneurial profile's dimension between university students from Business Administration and students from other majors.

A total of 758 students from several majors from a private university in Puerto Rico took part in the study. Two hypotheses were developed and tested via a survey on a Likert scale. Results showed variations among majors concerning entrepreneurial profiles. It was corroborated that there is a statistically significant difference between students from Business Administration and other majors. This study contributes as a spearhead the business education by providing empiric data to design plans, courses, and workshops about entrepreneurship. These initiatives will prepare students to start their own business.

INTRODUCTION

In the economic panorama during the last decades, there is the challenge of changing the mindset of university students, from being employed to having an entrepreneurial mindset to allow them to identify entrepreneurial opportunities and to be capable of establishing a new business and planning their creation in the near future (Thomson, 2009). Universities have shown a significant interest in changing the mindset in study areas of business administration (Kapoor & Sharma, 2016) because of its positive impact in the economic activity (Zahra, Wright & Abdelwagad, 2014), through the development of programs of entrepreneurial education within the universities in order to educate, promote, and train university students as future entrepreneurs (Acet, Serdar, Yücel, Kalkavan, & Yilmaz, 2014). According to Jabeen, Faisal and Katsioloude (2016), if an educational institution provides knowledge and adequate inspiration, the possibility that the youngsters select an entrepreneurial career can increase.

The European Union's Report (European Union, 2008) affirms that we have to follow an interdisciplinary education to take entrepreneurial education to all the students. The European Union has included entrepreneurship among the systemic competencies to be taught at all university levels (Vázquez-Burgete et al., 2012). According to Jabeen et al., (2016), entrepreneurial education works as a strategic tool to stimulate the growth of individuals and the country.

In Puerto Rico, there is not much literature about the entrepreneurial profile of university students. This study evaluated the entrepreneurial mindset and other entrepreneurial profile's dimensions of university students from several majors. These dimensions include the entrepreneurial mindset, managerial/administrative skills, technical skills, financial considerations, and individual and family features. Besides, it analyzed if there is a significant difference in the entrepreneurial profile's dimensions between students from business

administration (BA) and from other majors. The results can contribute to developing an entrepreneurial culture and entrepreneurship in Puerto Rico.

The entrepreneurial spirit may be a way of thinking, reasoning and behaving that obsessed with the opportunities to create and obtain value (Spinelli, & Adams, 2012). Factors such as experiences and personalities, among others may have an impact on the tendency to become an entrepreneur. We may consider the idea that there are an entrepreneurial profile en people regardless of their academic preparation. In general, there are personal and situational variables that may indirectly influence entrepreneurship.

This study evaluated five dimensions: entrepreneurial mindset, managerial/administrative skills, technical skills, personal/family features, and financial considerations based on the *Agenda Empresarial* of the Small Business Development and Technology Center (SBDTC) and Grupo Santander (2005), which makes the conceptual model presented in Figure 1 in Appendix A developed by the authors of this study. The description of each of the five dimensions appears with the conceptual model in Appendix A.

The entrepreneurial thought has spread to students from other majors (Acet et al., 2014). There are studies about entrepreneurship among students from humanities and social sciences (Vázquez et al., 2012), engineering and design (Arranz, Ubierna, Arroyabe, Pérez & Fernández de Arroyabe, 2017), and veterinary and nursing (Treanor, 2012). According to Vesa Taatila (2012), there is a difference regarding the entrepreneurial desire among students from different disciplines.

The objectives of this study were to obtain the entrepreneurial profile of students in several majors, compare if there is a difference between the student's profiles from business administration and those from other majors, and analyze the differences between business administration and other majors. The two research questions are: (1) Is there any difference between the entrepreneurial mindset of university students from several majors?, and (2) Is there a difference between the entrepreneurial profile's dimensions of students from business administration and the ones from students of other majors? Two hypotheses were developed to be evaluated:

H1: Business administration students' entrepreneurial mindset is statistically different from the one of students from other majors.

H2: The group of entrepreneurial profile's dimensions of the university students from business administration is statistically different the ones of students from other majors.

METHODOLOGY

This research employed an adapted questionnaire from the *Agenda Empresarial* from Grupo Santander and SBTDC (2005). The survey was divided into two parts to obtain sociodemographic information and data regarding the dimensions. The first part had eight questions. The second part had 38 questions that measured the five dimensions of the conceptual model. Experts and students validated the survey. The student selected the value that best represented the likeliness of that statement to themselves using a Likert scale. The Alfa Cronbach coefficient was $\text{Alpha} = 91.3$ in the 38 reagents. This coefficient showed adequate internal consistency, contributing significantly to measure the concept involved in each one the scales. The questionnaire was developed using Form Scanner, and the data were analyzed using IBM SPSS Statistics.

The evaluated population was university students from several majors in a private university in Puerto Rico. The sampling was no probabilistic, by availability and convenience. The students were undergraduate and graduate students from Business Administration (BA), Information (IN), Natural Sciences (NS), Communication (CO), Aviation (AV), Engineering (EN), Nursing (NU) and Criminal Justice (CJ) majors. The years of study were from first-year students up to seniors. The sample was obtained from 50 sections of different courses and levels. The sample selected was 27.73% of the 4,000 students of the campus (U.S. News, n.d.). The participation rate was 68% (758 surveys) of the 1,109 surveys distributed.

RESULTS AND ANALYSIS

Out of 758 participating students, 43.0% (n=326) were females and 55.2% (n=419) were males. This question was not answered by 1.72% (n=13) of the students. The survey was completed by 12.3% more males than women, which agrees with the proportion of male students on the campus of 57% (U.S. News, n.d.). The majority of the students had between 18 and 25 years old, which was 84.17% (n = 638). The rest of the participants (120) had 26 years old or more. The representation of the students from different majors was as follow: BA 20.2%, IN 12.4%, NS 17.9%, CO 5.5%, AV 6.2%, EN 11.6%, NU 5.5% and CJ 6.9%. Only 3.10% (30) of participating students owned a business. The size of businesses was: micro (50.3%), small (30%), median (13.3%) and other (3.3%).

The first research question was: Is there any difference between the entrepreneurial mindset of university students from several majors? Table 1 in Appendix A shows the results where students from BA, NS, CO, AV, EN, and CJ considered that the entrepreneurial mindset is “it looks quite like me”. Students from IN considered that the entrepreneurial mindset “does not look like me, does not look like me”. Regarding the entrepreneurial profile, students from

BA and EN considered themselves quite similar to some successful entrepreneur. Students from IS, NS, CO, AV, EN, and CJ position themselves as “does not look like me, does not look like me.” For Holienka et al. (2015), it is undeniable that there should be differences between the students of different majors. These authors argue that the disciplines attract different personalities, and these develop their entrepreneurial tendencies in other ways.

The second research question was: Is there a difference between the entrepreneurial profile's dimensions of students from business administration and the ones from students of other majors? A t-test was used to answer the question evaluating if both groups differ between themselves in a significant manner with respect of their means in a particular variable (Hernández Sampieri, Fernández Collado, C., & Baptista Lucio, 2014). Results showed that students from business administration have a statistically different entrepreneurial profile ($M = 4.11$, $SE = 0.037$) with respect to students in other majors ($M = 3.81$, $SE = .023$, $t(277) = 6.90$, $p < 0.05$). Business administration students obtained higher scores in all the entrepreneurial profile's dimensions compared to students in other majors. These results were aligned with the ones obtained by Chaudhary (2017), Dugassa (2012) y Solesvick (2013). All of these studies showed that the students from business administration displayed higher entrepreneurial intentions than students in other majors.

ANOVA (analysis of variance) was used to analyze if more than two groups differ statistically between themselves regarding their means and variance (Hernández Sampieri et al., 2014). The H_1 was accepted because students from AE had an entrepreneurial mindset ($M = 4.35$, $SE = 0.042$) different and statistically significant with regard with students of Information ($p < 0.05$). However, AE students are similar to students of other majors. Shinnar et al. (2009) research compared business students with students from other majors and found that business students are significantly more inclined toward entrepreneurship. Solesvik (2013) points out that individuals who partake in entrepreneurship programs have a more entrepreneurial motivation and probably will be entrepreneurs.

Regarding H_2 , whether there is any difference between the entrepreneurial profile's dimensions between students of business administration and those from other majors, it was supported by the results. Business administration students had a higher entrepreneurial profile higher than those from other majors, alongside with Carrero (2018) results. These may be because of their particular family environment or because they received an education geared towards it, what does not happen with students in other schools. Gurel et al. (2009) state that there is a statistically significant relationship between innovation, entrepreneurial family, and entrepreneurial intention.

CONCLUSION

This research provided empirical evidence about the entrepreneurial profile of students in business administration and other majors. First, it is shown that the entrepreneurial profile's dimensions are already present in all the students from different majors at different levels. This result supports the idea that students who do not have an entrepreneurial education nevertheless already have an entrepreneurial profile that can develop more. This information will allow the universities to support their entrepreneurial initiatives and promote developing the entrepreneurial mindset.

Second, there is a clear need to develop the entrepreneurial mindset and the abilities to promote economic development through creativity, self-employment, and innovation (Putta, 2014), in all disciplines. For academia, it would be beneficial to offer joint courses with other schools and seminars about entrepreneurship (Acet et al., 2014) to promote entrepreneurial potential. Puerto Rico is beginning that effort, and therefore this research like many others are tremendously useful. According to Acet et al. (2014), universities who endorse the mission of educating future entrepreneurs, have a great responsibility.

According to Solesvik (2013), if students are exposed early to entrepreneurial programs, the entrepreneurial motivation will increase, and with more probability, they will become entrepreneurs, which will be beneficial for the country and the whole world. The university should take advantage of this opportunity to promote initiatives to develop an entrepreneurial movement within other disciplines that are not being taken care of appropriately as done in the European Union since 2008. According to Andrés and Ascúa (2014), students expect that universities include in their primary goals entrepreneurial tools and the necessary knowledge to develop the required skills to start their own business. University students have shown the need to develop their entrepreneurial spirit.

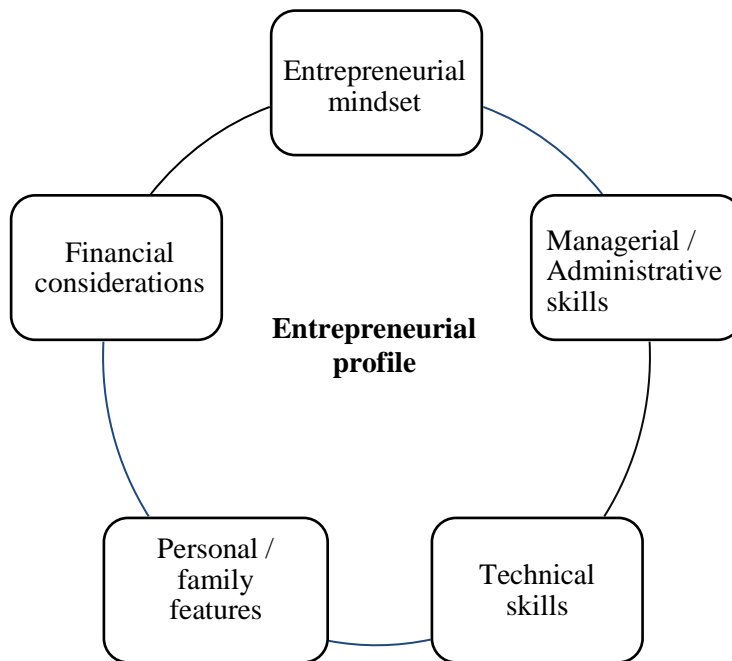
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Appendix A

Figure 1: Conceptual model



Source: Authors

Dimensions of the conceptual model

Entrepreneurial mindset. Bosman and Fernhaber (2018) define the entrepreneurial mindset as “the inclination to discover, evaluate, and exploit opportunities” (p. 13). The entrepreneurial mindset does not require starting up a business, but using entrepreneurial thinking until it becomes a habit (Bosman & Fernhaber, 2018).

Managerial/administrative skills. Among the managerial and administrative skills necessary to function and maintain a business (Putta, 2014) are the organizational, motivational and evaluation skills, among others. The administrative skills can be grouped in communication (Allen & Meyer, 2012; Palacios Acero, 2015) and financial skills (Putta, 2014; Sirbu, Bob, & Saseany, 2015).

Technical skills. An entrepreneur should have technical skills, like coding, programming, cloud technology, business email administration, basic analytical skills, online accounting, and electronic marketing (Jagyasi, 2015).

Personal/family features. There are some distinctive traits and qualities needed to become an entrepreneur. Allen and Meyer (2012) present some general characteristics as persistence, creativity, responsibility, and curiosity (Palacios Acero, 2015). Within the family traits, Chaudhary (2017) point out that those students whose families already have businesses are more inclined toward entrepreneurship.

Financial Considerations. Palacios Acero (2015) mentioned that the entrepreneur must have financial knowledge, like considering how much money they should receive, the economic responsibility with the business and the employees.

Table 1: Business profile dimension and concentration

Dimension	BA	IN	NS	CO	AV	EN	NU	CJ
Entrepreneurial mindset	4.34	3.93	4.28	4.19	4.30	4.34	4.37	4.29
Entrepreneurial profile	4.11	3.61	3.84	3.76	3.94	4.00	3.89	3.84

Source: Survey data