

UNIVERSIDAD DEL ROSARIO



Entrepreneurial Attitudes in the University of Rosario: What is the Role of Gender?

Thesis

Marla Patricia Díaz Arias

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Marla Patricia Díaz Arias

Guillaume Andrieu

Bachelor in International Business Administration

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ABSTRACT

This study examines whether there is a difference in the entrepreneurial intentions among male and female students in University of Rosario's School of Business. The idea is to precise, as well, if there are any gender-related differences regarding previous entrepreneurial engagement and the type of business the students are inclined to start. This work results important as it provides a general account on the professionals that the university is helping to develop, especially concerning the intentions they have to start their own business in the future. Thus, by combining qualitative and quantitative research methods, and using a Chi Square test of independence, the results lead to conclude there is no relevant difference between male and female students in any of the variables studied.

Key words: entrepreneurship, gender, intent, business, students.

1. INTRODUCTION

The term *entrepreneur* comes from the French word used to describe pioneers, and it was used initially in reference to traders and merchants who could not have any certainty as to their fate when they embarked on new journeys. Later on, the term evolved and began being used to identify those who started a company, and thus was linked to innovators. However, the same attitude towards uncertainty that defined the first entrepreneurs is the one that characterizes them nowadays.

Entrepreneurship has been studied in academia for over 200 years, and it plays a pivotal role for the development of a society. It could be even said that the entrepreneurial spirit is a need of the modern society. The activity as a whole requires a philosophy based on individual initiative, under the idea that professional life is more than finding a job where to work under someone else's orders. However, only intentions aren't good enough to secure success on this area, there must be a good idea behind it, and enough determination to carry it through.

Entrepreneurs have been previously studied from three different dimensions: demographic, psychological and sociological. Under this context, the present study will be focused on the influence of a demographic variable in entrepreneurship, which is gender. Entrepreneurship as a process is generally marked by quite stereotypical gender divisions, as usually the man is the one seen as the provider for the family, and women tend to be seen as "not risky enough" to venture upon having a business. This is why it would be interesting to examine entrepreneurial intentions among students pursuing business studies, considering they represent quite a major source of potential entrepreneurs and they have been trained on the subject, so they may have a different perspective than the general population.

Following this line of thought, the main objective of the research is to ascertain whether or not there are gender differences in regard to the willingness to become an entrepreneur in the University of Rosario's School of Business. Until now, no other research has been done on this area in the university. This is why this work does not pretend to go further into knowing which might be the reasons why the intentions of men and women to be an entrepreneur differ, as it isn't possible to know just yet if, indeed, any such difference exists.

Furthermore, the study aims to answer two additional sub-questions in order to better understand the dynamics in the intentions of the individuals through these complementary dimensions. Thus, with the first sub-question the population is divided between students who have already been part of an entrepreneurship project, which is done with the intention of determining if there is any gender-related difference concerning them. Then, with the second sub-question the interest is to know if there is a trend for men or women regarding which industry they prefer for their entrepreneurship project. This is to say, if perhaps the male population is mostly inclined over a certain industry and the female population over another.

As it will be seen further on, most of the studies that have been made on this area have found that there usually are more men owned than women owned enterprises, or that the group of men who intend to be entrepreneurs is higher than the group of women. Furthermore, this tends to be accrued to women setting higher standards for themselves, which leads them to think they are not prepared enough to start a company. This goes hand in hand with the fear of failure that makes most of them shy away from the prospective of becoming an entrepreneur. Likewise, women's entrepreneurship tends to be more by necessity, to provide for their families, which makes it quite weaker than if it was more for opportunity.

This study results relevant for various reasons. First of all, it provides a general account on the professionals that the university is forming to go out on the market, especially regarding the intentions they have to start their own business in the future. Second, if it is found that there is a significant difference between the male and female student population, the university could focus more efforts on the population that is the least motivated to become an entrepreneur. This is essential, given that the perceptions of this generation will be the ones to define the tendencies of the next decade. Furthermore, studying such differences could help reveal which are the critical factors influencing intentions. Therefore, if this work is able to assess if there is a gender gap in this regard, future research could further look into what might be the reasons behind it in order to counteract them.

This way, the work will be divided into four main parts. First, a review of previous literature on the subject will be done. Here, the term entrepreneurship will be defined in order to be clear as to what is referred by it on the research. Then, an overview of a global context for gender differences on entrepreneurship will be displayed, to continue with the situation found in universities, and end with how the panorama is looking for Colombia. Second, the methodology

used will be exposed, since the research done combines qualitative and quantitative techniques. Additionally, the way in which the results are analyzed is explained, as it entails the use of a statistical test.

Third, the results found will be presented, and will be discussed in the fourth section, where they will be associated with the literature and studies presented before. In this section some interesting perspectives arise, especially from the answers gathered through the qualitative part of the research. From the results it will be seen that there are no significant differences between men and women in the field of study, which is quite different from what has been found previously, and even to the statistics that Colombia has for entrepreneurship. This is why the work ends with some potential courses of study that could be followed in the future at the University of Rosario.

2. LITERATURE OVERVIEW

2.1. What is entrepreneurship?

Entrepreneurship has been defined in several different ways, but usually it is related to innovation and the creation of a new means of production of value. It could be either by starting a new organization, as Onuoha (2007) states, “or revitalizing mature organizations, particularly new businesses generally in response to identified opportunities”. Petrakis (2004) agrees on this point when he states that there are two types of entrepreneurship: one resulting from the staff of an already existing enterprise engaging in a more entrepreneurial form of management, and the other stemming from the creation and development of a new enterprise by an “entrepreneur”.

Joseph Schumpeter, an Austrian economic and political thinker from the XX century, saw entrepreneurs either as “replicative” –which are the ones who set up businesses that are very similar to existing ones–, or “innovative” –who change the way of doing things and come up with new ideas of business (*What exactly is an entrepreneur?*, 2014). Overall, in his view, entrepreneurs are innovators who carry out “new combinations”, and through them help the evolution of the economic system. These new combinations cover five different cases: 1)

introducing a new product or one with improved quality, 2) introducing a new method of production, 3) opening of a new market –entering an unexplored market, even if it already existed 4) conquering of a new source of raw materials or parts, 5) carrying out the new organization of any industry –be it by creating a monopoly or by disrupting one (Schumpeter, 2008, p. 66).

Also important are the perspectives of Jean Baptiste Say –French economist and businessman–, and those of W.B. Garnet –co-founder of the Entrepreneurship Research Consortium. On one hand, Say (1815) stated that entrepreneurs were “an economic agent who unites all means of production—land of one, the labor of another, and the capital of yet another—and thus produces a product” (Foster, 1988). In other words, he saw entrepreneurs an economic actor whose activities generated an added value. On the other hand, Garner (1985) saw them as “a person who started a new business where there was none before”.

For the purposes of this work, entrepreneurs will be seen as people interested in creating a new enterprise. Since it is students who are being discussed, potential entrepreneurs will be the ones that either have the intention of creating a business proposal, or that have already been engaged in creating one. This is taking into account that for the University of Rosario –which is where the research takes place in–, entrepreneurship is the capacity that human beings have to transform problems into opportunities, and to actually act on them through the development of projects and innovative initiatives, be it on the service of a company, of a community or of society itself (Universidad del Rosario, 2016).

2.2. Gender differences in entrepreneurship

2.2.1. General context

Interest on researching gender differences in entrepreneurial activities has only risen in recent years, due mainly to the fact that women-owned business has progressively become more important for countries’ economies (Carter & Weeks, 2002). Recent studies are moving from identifying if gender makes a difference, to actually knowing how it makes a difference in the rate of creation of new business between men and women (Carter & Shaw, 2006). Nevertheless,

even if research on the area has increased, the gender gap between entrepreneurs remains. Through quantitative techniques of analysis different studies show there are significant differences in the levels of creation of firms by gender, and put into evidence that the levels of women involved in setting up a company is significantly and systematically less than those of men (see Reynolds et al., 2004; Scherer et al., 1989; Delmar & Davidsson, 2000; Aponte, 2002; Diaz, 2003).

To start from a very general perspective, Minniti and Nardone (2007) try to establish the existence of universal gender influences for the decision to start a business, independently of the cultural circumstances specific to each country. The authors ask themselves if the differences in the probability of being an entrepreneur remain or disappear when men and women are compared in identical conditions for a group of specific characteristics. When the procedure is applied to socioeconomic variables and macroeconomic conditions, the differences in probability remain the same, which means that these variables do not explain gender differences in entrepreneurship.

However, when the procedure is applied to perception variables (what individuals perceived to be true) the differences disappear. For example, when the variable “opportunity of business” is excluded from the procedure, the differences are reduced significantly. This suggests that creating a new business is based on an individual ability to perceive opportunities and act on them. Therefore, through these results it can be said that if women feel that they have enough capabilities and knowledge, and believe that their abilities will lead them to success, they’ll be more prone to initiate their own business (Minniti & Nardone, 2007).

Somewhat related to this, Hanson (2009) discusses four geographic studies of women's entrepreneurship, undertaken in Botswana, India, Peru, and the United States. Through them, she demonstrates that women are changing their lives and those of the community they're in through entrepreneurship, and in this process they change the places where they live. However, it must be highlighted that a key element of this transformative process are governmental and nongovernmental programs, as well as women's grassroots actions that are aimed at building women's skills, confidence, and business networks.

Alvarez, Noguera and Urbano (2012), based on data from the Global Entrepreneurship Monitor (GEM), affirm that the informal factors –such as the abilities perceived to initiate a business, social environment and family roles–, have a significant effect on the probability of

being a woman entrepreneur. Meanwhile, more formal factors, such as financing, support politics or education, don't really have a differentiating effect in function of gender. It results more complex for women to make the decision to start a business, because they are more sensitive to a variety of non-financial incentives. Instead of being more motivated by opportunities, need motivations are more common for them. This is to say that they are looking to have more flexibility of time and location, and basically, the independence necessary to achieve a good family-job balance (Burke, FitzRoy, & Nolan, 2002).

In this same line of thought, Thébaud (2010) evaluates the extent to which self-assessments account for the gender gap in entrepreneurship. This author finds that women are less likely to see themselves as having enough capabilities to be an entrepreneur, which the Status Characteristics Theory suggests is because they hold themselves to a stricter standard than their male counterparts do. In fact, on average, women must have a higher level of education than men to feel they are competent enough to become entrepreneurs. This difference in self-assessments does contribute to women's lower rates of business ownership, and goes even further, as even when women have followed the entrepreneurial path they are still less likely than men to believe they are competent for their role.

Now, different researches have demonstrated that said social phenomenon does not exist due to a "biological" conditioning, but to a sociocultural motivation, in which the environment usually teaches men to be more entrepreneurial than women. Therefore, entrepreneurship activities by gender are much related to education and the sociocultural environment (Field, Jayachandran, & Pande, 2010). For instance, three studies conducted on Israel found for the most part few or no gender differences in the country (Malach-Pines & Schwartz, 2008). "These findings reinforce the explanation for women's entrepreneurial inferiority as resulting from social and economic exclusion and lack of equality" (Malach-Pines, Lermer & Schwartz, 2010, p. 195).

The fact remains, however, that there is still quite a large gap between women and men in regards to the entrepreneurship potential. Even if there is no such difference related to having a positive attitude towards it, men seem to be more open to starting a business. Moreover, although women have very similar entrepreneurial capabilities as men do, the intention to be an entrepreneur remains significantly higher for men. It is actually in a few countries that the entrepreneurship potential of women is almost as high as that of men. In fact, China is the only

country where more women than men can imagine starting a business, and it is in Belgium, Canada, Greece and Mexico that the difference is only of a 5% (Welpé, 2014).

2.2.2. Research in universities

The average of respondents to the Amway Global Entrepreneurship Report (2014) considers institutions such as schools, state programs, and universities as being responsible for entrepreneurship education. Generally, the higher the participation rates in entrepreneurship education are in the country, the more the respondents see schools and universities as responsible for teaching it. In addition, the NESTA –National Endowment for Science, Technology and the Arts– report (2008) states that colleges and universities can provide the right environments to inspire and motivate student enterprise and graduate entrepreneurship. This is why a focus on universities is made in this work, especially on studies that focus on gender-differences in potential entrepreneurs.

To begin with, Sanchez and Fuentes (2010) analyze the role of gender differences among potential entrepreneurs in relation to their psychosocial traits, what incentives them to start a business, and the main obstacles they find when doing so. They carry out an empirical study on 1400 students from the University of Cordoba (Spain), believing their education and training may influence them in pursuing self-employment in the future. They found that women are less prone to engage in entrepreneurial activity, and that this is mainly due to fear of failure. Additionally, their results show that female students associated entrepreneurship with initiative and creativity, while male students think the desire for new challenges or the willingness to take moderate risks are more important factors when intending to start a business.

Following this line, Neira, Fernandez, Portales and Rodeiro (2013) try to answer: “Which are the determining factors of intending to start a business among students?” In order to do this they use a standard survey applied in an anonymous way among first year students of Economics and Business Management from three universities in Galicia. The results show that the probabilities to become an entrepreneur in the future do differ among genders, although not in a big measure: 26% of women, compared to 36% of men. As for the reasons behind it, in general men and women agree on mainly wanting to do it for self-accomplishment and recognition. However,

men would rather work for someone else because they find that having a business means more workload and less financial stability, but women's main reasons are the lack of an entrepreneurial idea and of means for financing.

These findings are quite similar to the ones presented by Maes , Leroy and Sels (2014) through the use of the Theory of Planned Behavior (TPB) on business students in Belgium –with the behavior here being becoming an entrepreneur–. These group of researchers found that the effect of gender on entrepreneurial intentions is influenced by personal attitudes (how the person appraises the behavior) and perceived behavioral control (degree of difficulty the person relates to performing the behavior), but not by social norms (perceived social pressure to perform or not the behavior). Moreover, they state women tend to see entrepreneurship as a career option mainly as a means of retaining autonomy and obtaining a work-life balance, in contrast to men who see it mostly as a means to be wealthy. Finally, women also give more importance to having adequate knowledge and abilities than men do.

Regarding entrepreneurial intentions, Fernández, Rodeiro, Rodríguez and Videl (2013) try to describe the propensity of Spanish women in university to start a business, and for this they present two hypotheses: first, they state women will participate in a lesser degree than men in the creation of university *spin-offs*¹ –which was proved by the results; second, they believe that since said activity is produced in an academic environment, female presence will be greater than if it had taken place outside of it. Regarding the latest, they found the opposite of what they expected, with the participation of women being actually lower when the company is started in a university.

Similarly, Majumdar and Varadarajan (2013) examine if there is a difference in the entrepreneurial intentions among male and female students in United Arab Emirates, by using a sample of first year business students from Dubai Men's College and Dubai Women's College. The authors found that there are no gender differences between the students, as both groups feel equally strong in regards to becoming entrepreneurs, and in fact, women showed higher risk-taking behavior than men. These findings clearly go against what has been found through many other researches, but the reason behind this is the real interest here: the UAE Government in conjunction with five institutions² has been working towards promoting female entrepreneurship in the country through different incentive programs, which proves how important is the State's support and perspective in this area.

Evidently, culture can come to play an important role, which is why Shinnar, Giacomini and Janssen (2012) use Hofstede's cultural dimensions framework to study how culture and gender shape entrepreneurial intentions and perceptions in three countries: China, the United States and Belgium. This way, they test how university students perceive three types of barriers to entrepreneurship, namely: lack of support, fear of failure and lack of competency. According to their results, women in the three countries see the lack of support as a bigger barrier, in contrast to men. And the same happens with the other two variables but only in the United States and Belgium. The authors state that Chinese differ here because the culture has engrained a pressure to seem calm even when things might be going bad, and due to efforts of the government to give girls equal education opportunities as boys have.

Finally, and very similar to the previous study presented, after gathering data from 3,420 university students in more than ten countries, Dabic, Daim, Bayraktaroglu, Novak and Basic (2012) examined differences between gender intentions to become entrepreneurs and the reasons behind them. Again, the results confirm that women are less willing to start their own businesses, especially in regard to perceived feasibility and desirability. More concretely, the statements that show more differences between genders were self-efficacy and family support. This goes to such an extent that, even though they feel more supported by their families, female students are less self-confident, and more reluctant and concerned about entrepreneurship. This study is very interesting because it isn't focused on only one country and the sample is quite big and thus more representative, from which it could be said that its findings can be fairly conclusive.

2.3. Entrepreneurship in Colombia

In 2006, Colombia became one of the fields of study for the investigative process of the Global Entrepreneurship Monitor (GEM) –the world's primary study of entrepreneurship. This happened through an agreement in cooperation with four prestigious Colombian universities, which every year help carry out the collection of data and the production of the respective national reports GEM Colombia. This way, in 2014 it was found that 18.5% of the adult population was involved in the initial stages of entrepreneurial activities; this was above the

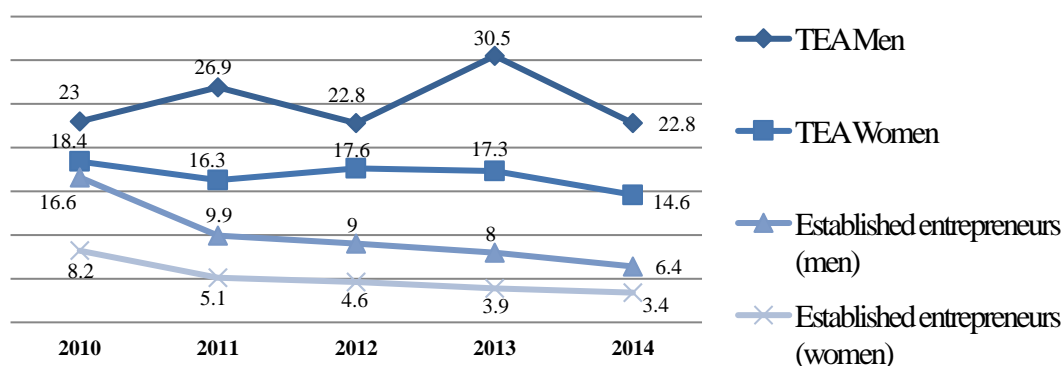
average of economies efficiency-driven economies (14%), which is the group the country makes part of³ (Global Entrepreneurship Monitor Colombia, 2014).

One of the report's main indicators is the Total Early-stage Entrepreneurial Activity (TEA), which is the rate of new business activity and is composed by two types of entrepreneurs: nascent and owners of new businesses. The first ones are people who are involved in setting up a business and have compromised resources already, but have not paid any salaries yet. In 2014, most part of Colombia's TEA was composed by nascent entrepreneurs, with a rate of 12.4%. As for the second group, the new business owners are people who have managed their own business for up to 3.5 years already and, of course, have paid salaries. For the same year, this rate in Colombia was 6.7% (Global Entrepreneurship Monitor Colombia, 2014).

This report distinguishes between men and women entrepreneurs, so it can be seen that the majority of people in any of the entrepreneurial activity phases are men. In 2014, the TEA for Colombian men was 22.8%, in comparison to women's, which was 14.6%. This means that for each woman who starts a business, there are approximately two men. This relation is maintained for the two components of the TEA: being of 15.1% for male nascent entrepreneurs, against 9.8% for females; and 8.4% for new business owners who are men, compared to a 5% who are women. Similarly, the rate of men owners of stablished businesses⁴ (6.4%) is higher than that of women (3.4%). Again, this signifies that for each woman who owns an established company, there are two men (Global Entrepreneurship Monitor Colombia, 2014).

The evolution of these indicators shows that the rate of men in new entrepreneurial activities has registered important fluctuations during the period studied; in contrast to that of women, which shows a rather declining tendency.

Figure 1
TEA evolution and Established entrepreneurs according to gender



Source: Adapted from *GEM Colombia 2014* (p. 54.), by R.A. Vesga, 2016.

Following this line, the Colombian GEM team has made certain regional or city reports, five of which have been developed in the capital city of the country: Bogota. Since this is also the city where this work is centered on, it results important to focus on its situation. This way, it has been found that between 2009 and 2012, Bogota's TEA has changed from 20.8% to 22.7%. The city's profile for the two components of the TEA is quite similar to the one of the country: there the growth for nascent entrepreneurs (14.4%) has been higher than that for new business owners (6.1%).

The report for 2012 makes a gender distinction concerning entrepreneurship by necessity and by opportunity, considering as well how much entrepreneurs earn in monthly revenues. Entrepreneurship by necessity is the one developed because the entrepreneur does not have better alternatives to have an income; therefore, it is quite fragile and vulnerable. In this category, in Bogota the participation of women tends to be greater than that of men, especially in the ranks of less income. Indeed, 43.5% of women in this group earn between one to two minimum wages a month, while only 37.5% men do. Furthermore, 18.8% of men earn more than four minimum wages monthly, compared to a scarce 4.3% of women. As the authors of the report state, these tendencies tend to perpetuate the role of women as the only source of income for the families in the least privileged groups of the city (Vesga & Quiroga, 2013).

This is a subject on which Mauricio Flores, the director of Corporate Social Responsibility of BBVA Colombia, agrees and has an important input on. He highlighted that in the base of the social pyramid of the country (where most of the population is found) 80% of entrepreneurship found comes from women. He believes that single mothers who provide for their family have a relevant role in society, since they are the ones that have a real need to obtain an income in order to sustain their children. This is why Oscar Cabrera, president of BBVA Colombia, considers the state should invest on incentive schemes and the possibility to offer women the tools to maintain their family and their company at the same time (Polanco, 2015).

Coming back to the GME report, with regards to entrepreneurship by opportunity there is, as well, a slight disadvantage for women; however, it is quite less evident than with the one by necessity. This negative bias on income distribution is more accentuated in the lowest level: from one to two minimum wages a month. On this level is where 27% of women are found, compared to 18.1% of men. Nevertheless, on the higher levels of income (above three minimum wages) the distribution is rather similar between men and women, containing 55.2% of men and 48.9% of

women. This shows that inequality on these indicators is reduced when women manage to start a business through seizing an opportunity (Vesga & Quiroga, 2013).

Now, this same report for the 2013-2014 period presents that Bogota's TEA was of 24.05%, composed 15% of nascent entrepreneurs and 9.05% of new business owners. This year's report distinguishes between men and women's TEA, highlighting again quite a big difference, since it is of 29.1% for men, in contrast to a 19% for women. It is interesting to pinpoint how even though female entrepreneurs tend to have a higher level education than their male counterparts – 71.8% of them have at least an upper secondary level of education, while only 59.2% of men do – the level of income for women still tends to be lower than that of men. To be precise, 29.3% of women have an income superior to three minimum monthly wages, while this is true for 40.3% of men (Vesga, 2014).

Finally, this GEM project asked women if they perceived they have had to face bigger obstacles in the development of their business due to their gender. Generally, it isn't a big percentage of women who believe that they have encountered more obstacles just for being female, being only 27.6% of the population who do believe they have. Moreover, the results for the rest of the country are quite similar, with 27.3% of women perceiving they have to face greater obstacles (Vesga, 2014).

Another study that has been developed in Colombia related to entrepreneurship is the Amway Global Entrepreneurship Report (AGER). Amway Colombia, alongside with the University of Rosario, the International Center of Social Responsibility and Sustainability, BmLab Latam and Kreab, conduct this study in the country. It is based on an annual questionnaire and analyzes the condition of self-employment. Internationally, it is led by Amway with Dr. Isabell Welp, the chair of strategy and organization of the School of Management, Technische Universität München (TUM) in Munich, Germany (Amway, 2016). Although this initiative measures mostly intentions and positive attitudes, rendering it rather inconclusive, its findings still seem interesting to discuss.

Therefore, in 2014, according to the report respondents who were more than 35 years old were the ones who showed the most positive attitude towards entrepreneurship (80% of them). Additionally, the study found that 88% of surveyed people manifest a positive attitude towards entrepreneurship (Amway, 2014). This number went up (albeit, by a small proportion) in 2015, when 90% of respondents had a positive attitude towards entrepreneurship, while 77% could

actually imagine starting a business. Moreover, 85% consider starting a business as a desirable career opportunity for themselves (motivated by desire), 33% showed stability against social pressure by stating their social environment could never dissuade them from starting a business, and a 60% believe they possess the necessary skills and resources to start a business (Amway, 2015).

3. METHODOLOGY

The field of research used for the purposes of the study was students between the ages of 20 to 24 years old in the Business School of the University of Rosario, in Bogota, Colombia. This population was chosen because the objective is to identify how many female and male students in the university are inclined towards an entrepreneurial future, and if there is any difference in the proportion of these demographic groups. Moreover, this University was chosen considering it has a Business School and an Entrepreneurship Center (*UR Emprende*). This center promotes entrepreneurial talent and tries to facilitate the development of initiatives and projects in the community of the University through different activities, conferences and researches (Universidad del Rosario, 2016).

The research developed was both quantitative and qualitative. For the quantitative side, numeric data was retrieved and analyzed, and the relation between gender and three other variables was studied –namely, entrepreneurial intentions, previous entrepreneurial engagement, and type of business. This type of research was selected as it allows measuring and evaluating these variables in a more objective and detailed way, which helps encounter sounder findings. Generally, quantitative methods seem more viable to obtain an external validity, since more confident and precise inferences can be made through the use of a representative sample of the population.

This way, the technique chosen was a questionnaire online, since it seemed the most convenient way, considering the author is geographically far away from the objective population. The platform used was *Google forms*, as it presents many facilities not only in its construction but also for the posterior analysis of the results. As for the number of participants, a total of 100

students filled the questionnaire, from which 50 were women and 50 men. Ideally, the sample would have been bigger; unfortunately, due to certain resources constraints a greater amount of answers could not be gathered.

Said questionnaire –which can be found in the appendix A– had two demographic questions (asking for age and gender), and two other questions that varied depending on whether the student had already been part of an entrepreneurship project or not; a project being understood as a business proposal. It was also decided that for the convenience of the students, they would respond with their specific idea of business, and then these would be divided into the type of business they belong to. The businesses were divided by the type of operations they would do, which can be: manufacturing, service, or merchandising (be it by retail or wholesale).

Additionally, a non-probabilistic method was used –as the probability that each population element will be chosen wasn't known–, alongside with a convenience sampling, since the subjects were chosen due to easier reachability. This type of sampling was chosen because through it the data can be gathered more speedily, considering no previous preparations are needed and the data is collected from the population at hand; this way, calculations can begin swiftly, as well. This resulted quite important considering the time span in which the research was made, which was of about four months.

As for the qualitative side, a guided interview was made to eight students (four men, and four women), with the purpose of knowing in general their idea of entrepreneurship, what are the underlying reasons behind them wanting or not to be entrepreneurs and their opinions on differences between genders in this field. This interview entailed nine questions, which can be found on Appendix B. The main idea of using this approach was to complement the data obtained with the questionnaire, in order to have a better picture of the context in which it was developed and to discuss the meaning some factors have for the different subjects.

From the responses obtained from the interviews a small analysis was made. Then, after completing the number of desired responses, the analysis of the questionnaire was made through the use of a Chi Square test of independence, which is a statistical hypothesis test that helps examine whether or not two factors or variables are related. Thus, three tests were made: one for gender and entrepreneurial intentions, another for gender and previous entrepreneurial engagement, and the last one for gender and type of business.

The tests of independence were applied following the framework proposed by David R. Anderson, Dennis J. Sweeney and Thomas A. Williams in the book *Statistics for Business and Economics* (2008). They propose a five step model that was considered the most suitable for the circumstances of this study. First, for each of the variables a *null hypothesis* (H_0) and an *alternate hypothesis* (H_a) must be stated. Generally, the null hypothesis (H_0) states that the variables are independent, while the alternate hypothesis (H_a) states that the variables are not independent from each other.

Second, the observed frequencies or results from sample selected must be recorded in a contingency table. These tables usually have the following format:

Table 1

Format of contingency table (observed frequencies)

		Column variable	
		Column Category i	Column Category j
Row variable	Row Category i	cell (i,i)	cell (i,j)
	Row Category j	cell (j,i)	cell (j,j)

Source: Adapted from "Statistics for business and economics", by Anderson, D. R., Sweeney, D. J., & Williams, T. A., 2008, p. 479-487.

For the third step the expected frequency for each cell must be computed. This is done by using the equation bellow:

$$e_{ij} = \frac{(\text{Row } i \text{ or } j \text{ Total})(\text{Column } i \text{ or } j \text{ Total})}{\text{Sample Size}}$$

Following, another equation must be used to compute the value of the test statistic. In this equation f_{ij} is the observed frequency for the contingency table category in row i and column j; and e_{ij} is the expected frequency for the contingency table category in row i and column j based on the assumption of independence (Anderson, Sweeney, & Williams, 2008).

$$\chi^2 = \sum_i \sum_j \frac{(f_{ij} - e_{ij})^2}{e_{ij}}$$

Once the test statistic has been calculated, the corresponding upper tail area or p-value should be determined, for which the number of degrees of freedom must be computed by multiplying

the number of rows minus 1 ($n - 1$) by the number of columns minus 1 ($m - 1$). In this case, Excel procedures were used in order to accelerate and facilitate all the process. Finally, once these data have been found the rejection rule through the p-value approach can be applied. This rule states that H_0 should be rejected if the p-value is less or equal to the level of significance (α) selected, which is often 0.05.

4. RESULTS

4.1. Quantitative results

As it was said before, the answers from the questionnaire were analyzed by using a Chi Square test of independence. The first variable considered was *previous entrepreneurial engagement*, since the way in which the questionnaire was organized first divided the group of respondents depending on their answers for this section. To begin with, in this case the hypotheses are:

H_0 : previous engagement in entrepreneurship is independent of the gender.

H_a : previous engagement in entrepreneurship isn't independent of the gender.

This is to say that if the null hypothesis is rejected, there should be considerable differences between men and women's previous engagement in a business project.

Then, the results found were arranged in a contingency table. For this variable, the amount of women who stated that they have never been part of an entrepreneurship project were 25, which means half of the female student population studied has already participated in such a project, and half has not. Meanwhile, the male students who have never engaged in an entrepreneurship project are 21; therefore, 29 of them already have done so.

Table 2

Contingency table for previous entrepreneurial engagement (observed frequencies)

		Previous entrepreneurial engagement		
		Has been engaged	Hasn't been engaged	Total
Gender	Man	29	21	50
	Woman	25	25	50
Total		54	46	100

Source: Data obtained from questionnaire performed on students of the University of Rosario (Own elaboration)

Following, the expected frequencies for the cells of the contingency table were calculated, as can be seen in the table below.

Table 3

Expected frequencies if previous entrepreneurial engagement is independent of gender

		Previous entrepreneurial engagement		
		Has been engaged	Hasn't been engaged	Total
Gender	Man	27	23	50
	Woman	27	23	50
Total		54	46	100

Source: Data obtained from questionnaire performed on students of the University of Rosario (Own elaboration)

As it was mentioned in the Methodology, the necessary procedures to find the test statistic and the p-value were computed using Excel. Therefore, the test statistic found was 0.64 and the p-value 0.42 with one degree of freedom, as there are only two columns and two rows $(2 - 1)(2 - 1)$. Since the p-value is greater than 0.05, the null hypothesis is not rejected, which means that previous entrepreneurial engagement is independent of the gender.

The next variable is *entrepreneurial intentions*. Here, the number of results that could be gathered was quite small since it is a sub-sample that comes from the students that said they had not participated in any entrepreneurial project before. The null and alternate hypotheses are:

H_0 : entrepreneurial intentions are independent of the gender.

H_a : entrepreneurial intentions aren't independent of the gender.

This way, from the 25 women, the amount that isn't planning on becoming an entrepreneur is seven, which leaves 18 women who do want to be engaged in entrepreneurial activities in the

future. Then, from the 21 men, there are 10 who haven't participated in an entrepreneurship project and don't plan to do so, which means 11 of them do want to be entrepreneurs. For these results the expected frequencies were calculated as well.

Table 4

Contingency table for entrepreneurial intentions (observed frequencies)

		Entrepreneurial intentions		
Gender		Wants to	Doesn't want to	Total
	Man	11	10	21
	Woman	18	7	25
	Total	29	17	46

Source: Data obtained from questionnaire performed on students of the University of Rosario (Own elaboration)

Table 5

Expected frequencies if entrepreneurial intentions are independent of gender

		Entrepreneurial intentions		
Gender		Wants to	Doesn't want to	Total
	Man	13,23913043	7,760869565	21
	Woman	15,76086957	9,239130435	25
	Total	29	17	46

Source: Data obtained from questionnaire performed on students of the University of Rosario (Own elaboration)

After doing the appropriate process in Excel, the test statistic found was 1.86 and the p-value –with one degree of freedom again– was 0.17, which is in turn greater than the level of significance (0.05). This means that the null hypothesis should be accepted, and consequently, entrepreneurial intentions in the university's School of Business are independent of the gender of the student.

Finally, for the third variable studied the results were that from the entrepreneurial projects men had been either engaged in, or wanted to create, 14 belonged to the manufacturing business type, 24 to services, and 2 to merchandizing. For women, 18 were in the manufacturing category, 22 in services, and 3 in merchandizing.

Table 6
Contingency table for type of business (observed frequencies)

		Type of business			
Gender		Manufacturing	Services	Merchandizing	Total
	Man	14	24	2	40
	Woman	18	22	3	43
	Total	32	46	5	83

Source: Data obtained from questionnaire performed on students of the University of Rosario (Own elaboration)

However, here one of the categories doesn't fill the requirement of having more than five in the expected frequencies, which is Merchandizing (Table 7). However, it can be seen that the frequencies in general do not differ much, and thus that in this variable there are no significant differences between the two genders.

Table 7
Expected frequencies if the type of business is independent of gender

		Type of business			
Gender		Manufacturing	Services	Merchandizing	Total
	Man	15,42168675	22,1686747	2,409638554	40
	Woman	16,57831325	23,8313253	2,590361446	43
	Total	32	46	5	83

Source: Data obtained from questionnaire performed on students of the University of Rosario (Own elaboration)

4.2. Qualitative results

For the answers of the interview, the results that will now be presented are the main ideas that could be perceived from each group of men and women; although, for some questions the responses are very similar for both genders, so no distinction is made. To begin with, the first question asked the students to give three words they associated with entrepreneurship. To this, through men's answers it can be seen that they relate it more with passion, while women do so with dedication and perseverance, as well as with opportunities. However, both groups connect the term with innovation.

The second question inquired what they think is necessary to be a successful entrepreneur. Here, men believe that the person must be passionate about the idea they wish to carry out, as well as having a defined vision and understanding if such vision has a real potential on the market. Women, for their part, feel that the person will need to be disciplined and a hard worker, coupled with having an innovative idea. Following, the third question addressed if they wanted to start a business in the future and why. Only one female student stated that she wouldn't want to be an entrepreneur, due to the amount of time and capital required, as well as the uncertainties that come with this activity. The rest of the students were interested in engaging on entrepreneurial projects and both genders seem to be motivated by the development of the economy, as well as by financial and labor independency.

The fourth question asked what their business proposal was. The idea of this question was to see if there are any tendencies in regard to the industry or type of business the students are inclined to. On one hand, the group of men is more interested on the media and virtual industry. On the other hand, with the women no conclusion could be arrived to, since of the three of them who do want to become entrepreneurs, one of them doesn't have an idea defined, and another only has a vague notion of the market she would like to tend to. Following, from the answers to the fifth question it can be observed in both gender groups that the idea comes from what the students are passionate about or very interested in.

Question number six regarded the barriers they perceived to start a business. For the men, two of them still feel they need more experience and knowledge before creating their own company. One male and one female student both agree that, although there can be many barriers, as long as they persevere with their idea they could overcome them. Nonetheless, both groups agree that the initial capital for the investment and the large amount of legal procedures are important barriers.

The seventh question presented the fact that in most countries there are more male than female entrepreneurs, and asked the students why they thought this situation occurred. Two of the men believe that this takes place in societies where the level of sexism is higher and where women are not considered to have the abilities to be entrepreneurs. The other two think it happens because entrepreneurship implies many risks, and they deem women more risk averse than men. Half of the women concur with this notion of men being more willing to take risks. However, in general they associate this fact with the way in which society conditions women to

believe that they must only dedicate themselves to certain labors, and thus make women feel insecure of their own capacity to become entrepreneurs.

Carrying on, the eighth question inquired if they thought in Colombia entrepreneurship is more associated to a gender than the other, and to justify their answer. Two of the male students do not believe that there is any gender-related difference in the proportion of entrepreneurs in Colombia, a reasoning with which one of the female students agrees. However, the other two do believe that it is more related with men, at least from the perspective that society as a whole has of the activity. The rest of the women believe that it is more associated with men, because they consider the Colombian society has certain conceptions of women that make them seem as not able enough, thus reducing the recognition they can have as entrepreneurs.

Finally, the ninth question asked the students if they thought that because of their gender they had any advantage or disadvantage at the moment of starting a company. Two of the men agree that because the Colombian society can still be quite sexist, men can have more credibility, so they would have an advantage on the aspect of obtaining necessary funds to start a company. However, another of the male students doesn't think he has any advantage or disadvantage at the time of engaging in an entrepreneurial activity. Finally, one of the male students believes that while women may feel having children as a disadvantage, men would actually be more motivated to become an entrepreneur after having children.

On this question, all of the female students agree on the fact that although Colombian society may give less credibility to women in regards to their abilities as entrepreneurs, and can even think that they could give up more easily than men, they know that they have many capabilities that can lead them to be successful, and that in reality if women have a clear idea in mind and dedicate themselves to it, they can reach their objectives.

5. DISCUSSION

From the analysis made through the Chi Square test of independence it can be observed that there is no discernible or considerable difference between male and female students in any of the variables considered. Although these results do not correspond to the ones that the majority of

studies in this area have found, there are some exceptions. For instance, the findings of this work go along with those found by Majumdar and Varadarajan (2013) when they examined differences in the entrepreneurial intentions among male and female students in the United Arab Emirates, and found that both groups feel equally strong in regards to becoming entrepreneurs.

Another set of studies where no gender-related difference was found were the ones performed by Malach-Pines and Schwartz (2008) on Israel. According to them, women's entrepreneurial inferiority stems from social and economic exclusion and lack of equality. If this should be true, which it very well might, since the University of Rosario's environment doesn't distinguish between men and women in the education and attention given, it does not foster negative attitudes in female students towards entrepreneurship.

It seems relevant to highlight that most of the students seem to be interested in the services industry, but the amount that wants to be engaged in a merchandizing type of business is very small. It could be advantageous for the country if more entrepreneurs started innovative service companies, or even manufacturing new products, since it would help the Colombian economy to move away from its commodity dependence, and finally develop from being an efficiency driven country, to an innovation driven one (Schwab & Sala-i-Martin, 2014).

If the results are compared to the statistics that Colombia has shown in the GEM Report throughout the years, it can be said that the findings are the opposite of what Fernández, Rodeiro, Rodríguez and Videl (2013) found when they studied the propensity of Spanish women in university to start a business. They believed that the female presence in the creation of *spin offs* would be greater in universities than outside of them. However, they found that women were more engaged in entrepreneurship outside of the academic field. In the case of this work, as could be seen, there is more equity in terms of the gender of the entrepreneurs inside of the university than there is in the country as a whole.

Now, the first thing that can be said from the quantitative results is that this group of women relate entrepreneurship more with hard work and dedication than men do, which was a notion reaffirmed with the responses to the two first questions. This may suggest that women see becoming an entrepreneur as quite a harder task than men do. Nonetheless, although at first the groups associated entrepreneurship with innovation, it was the group of women which stated how they thought that in order to be successful in starting a business the person would need an innovative idea. This may be why they believe it requires more efforts, since creating an

innovative company, of course, is fundamentally harder than just producing something not very different from what is on the market.

However the case, in principle both gender groups seem to be interested in initiating innovative businesses, which can be also inferred from the ideas they have for future entrepreneurship projects. This is very relevant for the university, as it is constantly supporting and encouraging innovative ideas among the potential entrepreneurs of the Business School. Perhaps initiatives such as the “Entrepreneurship and Innovation Week” are being successful in generating an environment where students can find tools to better develop their ideas (Universidad del Rosario, 2015). Also noteworthy is the fact that for all of the students interviewed, an important reason for starting a business is adding to the development of the country.

On another note, it’s interesting to see how one of the male students declares that women can be hindered from engaging on entrepreneurial activities once they have children. However, it is known that in Colombia most of the women actually start their own business out of necessity, to provide for their children (Vesga & Quiroga, 2013; Polanco, 2015). His notion also goes against what was found by different studies, which affirm that women are more sensitive to informal or non-financial factors, such as social environment and family roles, and therefore, need motivations are more common for them (Alvarez, Noguera & Urbano, 2012; Burke, FitzRoy & Nolan, 2002).

Nevertheless, this mindset was not observed on the women interviewed. They want to become entrepreneurs because they perceive an opportunity that could be profitable in the market, not because of necessity, although this could be because they still are in the university and haven’t had to confront harder labor situations. Still, this seems very promising for the way in which women’s entrepreneurship is seen in the country. It’s just as Hanson (2009) puts it: “although entrepreneurship is a process that is marked by deep stereotypical gender divisions, it is also one through which people can change the meaning of gender and the way in which gender is lived.”

Something else that catches the attention is how although both groups think that women are less prone to taking big risks, the female students believe that this is because of how society has conditioned women to feel more insecure. From their answers to this question (number seven), and to the last one, it can be seen how they are aware of the fact that the disadvantages are only structural and external, not inherent to them. It is not because you’re born a woman that you will

be less inclined or able to be an entrepreneur, since it isn't a biological conditioning but a sociocultural motivation, in which the environment usually teaches men to be more entrepreneurial than women (Field, Jayachandran, & Pande, 2010).

If the answers from the interviews are related to the results from the survey, it could be inferred that the reason why the degree of intentions to become an entrepreneur doesn't differ among genders is because the female students from the University of Rosario feel that they have enough capabilities and knowledge, and trust that what will lead them to be successful are their abilities and hard work. As Minniti and Nardone (2007) found, creating a new business is based on an individual ability to perceive opportunities and act on them; remarkably enough, opportunity was one of the words that the group of women most related to entrepreneurship.

6. CONCLUSIONS AND LIMITATIONS

The objective of this work was to precise whether or not there are gender differences in entrepreneurial intentions at the University of Rosario's School of Business; a subject that hadn't been studied before in the university. Additionally, the study had two sub-questions, with the objective of understanding complementary dimensions in the intentions of the individuals. The first one addressed whether or not there was any gender-related difference between the students who have already been part of entrepreneurship project. The second sub-question regarded the industry preferred by the students for their entrepreneurship project; again, to determine if in this area there was any difference between men and women.

The results from the study help the university assess the degree to which students in general are interested in entrepreneurship, and how the efforts it has focused on promoting this activity, as well as innovation, seem to have paid. In relation to this, it's important to highlight that the students are eager to contribute to the development of the country through their business projects, since they are quite conscious of the role they play and how they can change the economy and society for the better.

From the analysis of the quantitative research it could be deduced that there are no significant gender-related differences among the students, neither regarding previous entrepreneurial

engagement, nor in future entrepreneurship intentions or the type of business preferred. This means that the university does not need to focus any extra efforts on any gender group, but just to keep on incentivizing entrepreneurship as a whole, and continue carrying out the activities and educational methods that seem to make the students want to begin their own company in the future.

Most of the studies that have been done previously have found there are significant differences between men and women, be it in society as a whole or only in universities. In fact, only two other works have found no difference between gender groups. These have been in the United Arab Emirates (Majumdar & Varadarajan, 2013) and in Israel (Malach-Pines & Schwartz, 2008). Therefore, the results from the present work could be important for this field or research, since the lack of gender gap in entrepreneurship may be due to contextual reasons. This makes the University's Business School quite appealing for further study in this area, in order to assess which may be the distinguishing factors that create an equality-friendly entrepreneurship environment.

From the qualitative part of the study, it should be reminded mainly how it could be seen that although the female students do perceive certain barriers for them to become entrepreneurs, they don't feel it is because they lack capabilities, but because of stereotypes that society has. In general, nonetheless, the group of women did associate entrepreneurship with a lot of hard work: an activity that required commitment and dedication. Moreover, both gender groups stated they believed there weren't as many female entrepreneurs as men because women tend to be more risk-averse; even though the female students did accrue it to the way society can condition women.

As for the limitations, the fact that a quantitative research was used means that the context of the study had to be left out, as this type of research does not study objects in a natural environment. Another disadvantage is that generally a quite large sample of the population is required to obtain more precise results, but in this case the questionnaire could not be applied to the ideal quantity of people that a representative sample should have for the population of the Business School. For future occasions, the same procedure could be done with a larger sample in order to obtain more conclusive results.

As for the qualitative research, although great efforts were made to avoid imprinting some bias in the questions and in the interpretation of the answers, there is always some margin for

personal idiosyncrasies to come into play. Additionally, it is clearly impossible to generalize with this kind of research; especially in this case where the amount of interviews made was rather scarce. Hence, this brings some additional limitations that the conclusions of the study may have.

It would be extremely interesting to go further into the different influencers that make students want to engage in entrepreneurship, as well as those inhibitors that hinder them from considering this as an option for their future. In regards to the barriers, it would be especially important to determine if they come from internal motives (e.g.: lack of perceived abilities) or from structural factors –such as bureaucracy, or legal procedures. Findings on this area could help define what can be done to encourage more students to become entrepreneurs. Furthermore, even though no gendered differences were found regarding the intentions to be an entrepreneur, perhaps they would be perceived if the motivations were studied.

Finally, another dimension in which a study in this same area could be developed would be in a framework that included Hofstede's dimensions of cultural analysis. Such a study would aid to determine the effects of the Colombian culture on the values of its members, and the way that these values relate to the students' entrepreneurial behavior. This has been previously done in this area of research by Shinnar, Giacomini and Janssen (2012), who used the six dimensions to study how culture and gender shape entrepreneurial intentions and perceptions; it would be precisely this what a future work in the university could try to find.

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8. FOOTNOTES

¹Spin-offs are understood as either businesses founded by a member of the university and/or that were begun with the aim of exploiting the knowledge obtained from research activities developed in the institution.

²These institutions are: Khalifa Fund to Support and Develop SMEs, Mohammed Bin Rashid Establishment for Young Business Leaders, the Mohammed Bin Rashid Awards for Young Leaders and the Mohammed bin Rashid Al Maktoum Foundation and the Mohamed Bin Rashid Establishment for SME Development.

³The GEM initiative divides countries in three categories depending on their economic development level: factor-driven, efficiency-driven and innovation-driven. This classification is adapted from the World Economic Forum (WEF). Factor-driven economies rely heavily on extraction activities, while innovation-driven ones are knowledge-intensive and rely more on services.

⁴An established business owner is understood as one who has owned a business for more than 3.5 years and has paid salaries throughout these years.