




**Entrepreneurship Higher Education and Students' Entrepreneurial Intentions in Brazil
Report on the Brazilian GUESS 2013-2014**

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São Paulo, December 2014

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Foreword

Since its first release in 2011, GUESSS Brazil has focused on characterizing Brazilian higher education, particularly concerning career choice, interest in being an entrepreneur, and preparation and accomplishment activities related to this option. Its main objective is to generate understanding and improve national university education in addressing these issues.

Choosing a career and preparing for it refers to the construction of important personal projects, central in a person's life. For university students, ideally, this construction combines ample human development, knowledge, abilities, and attitudes – favored by the university education and the relationships among people developed during the period of this education – to achieve personal fulfillment and assume an important role in improving society. Higher education institution (HEI) directors usually say these institutions are strongly engaged in establishing this ideal. In addition, students commonly demonstrate interest or even actively strive for this. However, various challenges hinder achieving the ideal. In Brazil, one of the challenges is the great need for quality higher education in entrepreneurship¹. Quality education in this area would improve the capacity for innovation, creativity, and decision making – useful strengths for all students, not just for those who want to found a business or be self-employed.

HEIs and students can contribute significantly to improving entrepreneurship education with different initiatives, some of which using contributions from this report. For example, HEIs and students can cultivate environments rich in diversity of experience and in possibilities for exploiting personal resources, broadening horizons and prospects, and focusing not only on the usual emphasis on preparing future employees and building specific knowledge and skills. It would be interesting and promising for students to engage (and HEIs to adjust their missions) in expanding the variety of careers they consider for their future. Paying the necessary attention to other career options such as creating a business – either for profit or for social purposes – being an entrepreneur, successor, or even intrapreneur, which is an innovative employee with great initiative in a public or private organization, would help HEIs in better fulfilling their role and, in the end, students to be more active drivers of the socioeconomic advance.

In this GUESSS Brazil report we have endeavored to identify ways for these and other improvements, and the reader can be a key player for them to occur. We hope that your reading inspires reflection and encourages action in this direction.

We are available to discuss and deepen the content of this work.

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¹ This need is described in detail by one of our previous works: Lima et al. (2014), included in the list of references at the end of this report. In the work, this need is treated based on five major challenges: increasing the number of courses, programs and activities offerings in entrepreneurship; training more teachers or professors; offering greater proximity and contact with entrepreneurs and their reality; adopting a practical approach; broadening diversity in the offering of courses and activities in entrepreneurship; and going beyond the traditional emphasis on business planning.

1- Introduction

This report presents the results of GUESSS Brazil for 2013-2014 obtained from data of questionnaires answered by 12,561 students from just over 60 Brazilian higher education institutions (HEIs)². GUESSS stands for *Global University Entrepreneurial Spirit Students' Survey*. When concerning only data for Brazil, the report applies the denomination GUESSS Brazil. Data collection happened from October 2013 to January 2014. The objective pursued herein is to contribute to improving Brazilian higher education by studying career intentions and university learning conditions, primarily in reference to having one's own business – i.e. acting as an entrepreneur.

Students from a wide variety of fields are interested in having their own businesses (such as those relating to dental services, home healthcare, nursing or physiotherapy companies, fitness specialists, and trade). Individuals can follow such interests at any time of life and not necessarily close to graduation.

Particularly for these students with entrepreneurial intention, but also for those who have not considered entrepreneurship as a career option, higher education that uses a well-developed approach in entrepreneurship offers many benefits. It can lead young people to improve their preparation for a broad variety of careers and increase the number of them who are innovators, proactive, and full of initiative – qualities with great socioeconomic impact whether for entrepreneurs or employees (Alvarez and Busenitz, 2004; Fayolle, Gailly and Lassas-Clerc, 2006; Guerra and Grazziotin, 2010; Lanero et al., 2011).

To obtain the 12,561 responses from Brazilian students, the survey's national coordination sent to 80 partner professors at different HEIs (those responsible for data collection at their respective HEIs – to see the complete list of them, visit <http://guesssbrasil.org/instituicoes-de-ensino-participantes/>) a request to transmit e-mails to students inviting them to answer the online questionnaire. Approximately 220 thousand students were contacted (response rate = 5.7%) but not only by e-mail. In some HEIs, professors used Internet/Intranet pages, notices given in the classroom, posters, and even SMS messages sent by cell phone. Similar to what was done in the previous survey in Brazil, incentives for Brazilian students to respond included the possibility of using the response period as an opportunity to reflect on their career, provoking constructive discussion based on these reflections with professors and colleagues, and a raffle for five mini iPads, run by the study's international organization in Switzerland.

We also reemployed another practice from the previous edition: to obtain an elevated response rate, we offered professors two exercises on career options that they could do with their students (Appendices 1 and 2). Professors could access this pedagogical material via the study website: <http://guesssbrasil.org/beneficios-para-os-professores>.

Being one of the largest studies on the theme currently done in the world, GUESSS offers the opportunity to draw national and international comparisons on HEIs, students' career interests, and the preparation to be entrepreneurs that they have undertaken. This favors an exchange of best practices and benchmarking for different countries and institutions. It can also lead to generating improvements for university administration, teaching practices, and even public policies in education. The global dimension of GUESSS reinforces this potential contribution. In the last edition, the international study obtained 109,026 answered questionnaires from students at 759 HEIs located in 34 countries (for more information, visit www.guesssurvey.org).

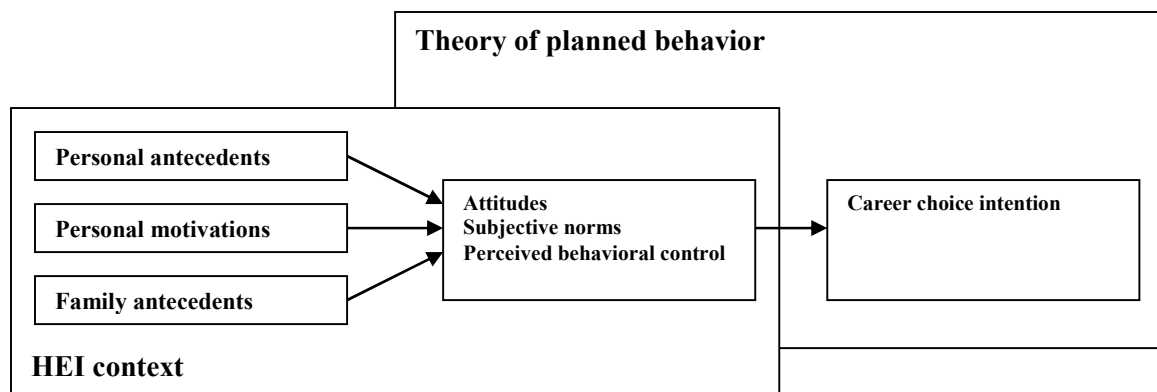
² The international GUESSS report cites 104 Brazilian HEIs, but this number considers, in some cases, different campuses of the same HEI (such is the case with UFMS) or HEIs from which, in the end, no responses were obtained. The final consolidated list of Brazilian HEIs from which responses were effectively obtained is provided in a table further on in this report.

2- Conceptual bases

The conceptual bases for GUESSS Brazil, as well as those for GUESSS at the international level, lie in the theory of planned behavior – TPB (Ajzen, 2002; Fishbein and Ajzen, 1975). According to TPB, intention precedes action. Many empirical studies (Fayolle, Gailly and Lassas-Clerc, 2006; Liñán and Chen, 2009; Miller et al., 2009; Souitaris, Zerbini and Al-Laham, 2007) have confirmed its utility in studying student’s entrepreneurial intention and higher education in entrepreneurship. TPB enables studying and understanding the different attitudes that sustain entrepreneurial intention, as well as examining the antecedents that influence such attitudes.

TPB application in the context of higher education in entrepreneurship is schematically summarized in Figure 1.

Figure 1 – Conceptual bases of GUESSS Brazil



Source: Adapted from Ajzen (2002) and Fishbein and Ajzen (1975).

The components in Figure 1 can be described as follows:

- “Attitudes” refers to the evaluation, favorable or not, of the entrepreneurial idea by the actor in question.

- “Subjective norms” refers to the perception of social pressure, favorable or not, of people important to the actor concerning whether the actor should or should not act to realize the entrepreneurial idea.

- “Perceived behavioral control” concerns the perception of difficulty or facility in manifesting a behavior, taking into account past experience, deficiencies, and obstacles. Thus, it is related to a person’s beliefs in his/her entrepreneurial ability and the degree of control over his/her behavior to act as an entrepreneur.

Intention is a measure of how willing a person is to do something or to what degree he/she is planning to put something into practice – issues that vary according to motivational and non-motivational factors such as opportunities, resources, and skills. Entrepreneurial intention is influenced by personal and family antecedents, and personal motivations, which affect the development of attitudes – in this report, the propensity, favorable or not, to be an entrepreneur. Another influence on entrepreneurial intention is the perception of social pressure on becoming an entrepreneur – i.e. the perception of subjective norms. Additionally, one should consider the perception of behavior control, which means the perception of the facility or difficulty of performing a certain behavior or achieving a result, taking into account barriers and past experiences. Therefore, these variables, manifesting and relating to each other in the HEI context in which the considered people study, explain career choice intentions, including those concerning entrepreneurship.

Based on the TPB, we used the GUESSS Brazil questionnaire to obtain data on these variables related to university students’ entrepreneurial intention and to the HEIs in which they study. Moreover, we paid particular attention to their intentions and reasons behind career choice, the

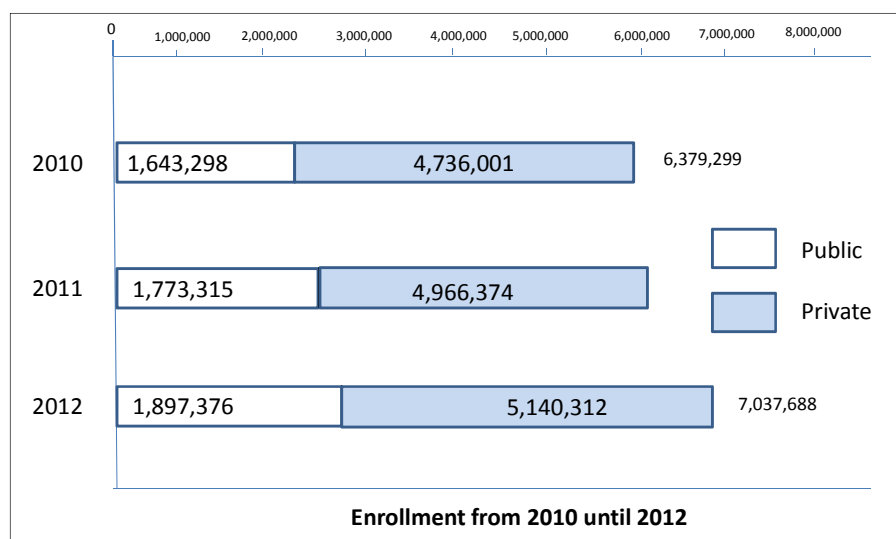
learning environment and the country context, the students' learning, the attractiveness of entrepreneurship, the reactions of the students' personal network to their possible interest in entrepreneurship, the family background/business and the relationship with the family, the planning and activities to be a business owner, and the business characteristics for those who are already entrepreneurs.

3- General context of Brazilian higher education and entrepreneurship

The previous GUESSS Brazil report, released in December 2011, made some advances in describing the origin and evolution of Brazilian higher education to date. It offered an overview of the national higher education policy, the different types of HEI, and the modes of higher education, while presenting the number of students, courses, and HEIs, as well as the difficulties and challenges seen in the national higher education system. The full description can be accessed in the original text, which is still available at www.grupoapoe.wordpress.com/nossos-cadernos-de-pesquisa.

Complementing the description made at the end of 2011, we used data from the INEP Census on Higher Education (MEC/Inep, 2013). The census shows a discrete advance in relation to data from previous years. Regarding the number of students enrolled in HEIs, 2012 presented a growth of 10.3% over 2010, with 8.5% in the private sector and 15.5% in the public sector, as shown by the numbers in Figure 2.

Figure 2 – Evolution in the number of enrolled students from 2011 to 2012



Source: MEC/Inep (2013).

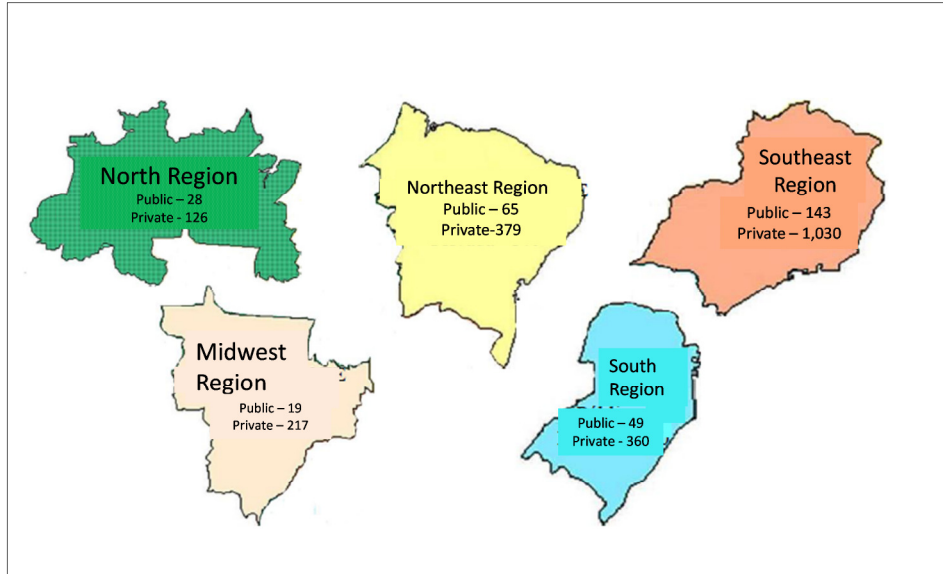
Even with the increased number of enrollments at public HEIs, private institutions maintained a greater number of enrollments. The census (MEC/Inep, 2013) shows that, in 2012, Brazil surpassed the 7 million mark for HEI students³. According to Lopes (2014), factors such as the entrance in Brazil of powerful educational investors, the offer of financing by the FIES (Student Financing Fund), the growth of the distance learning programs, and the proliferation of programs preparing technologists, of which 81% are private, are causes for the recent expressive growth in the number of students. Another important aspect responsible for this growth is the going public of major private higher education

³ This represents an increase of 4.4% from 2011 to 2012, with 7% in the public sector and 3.5% in the private sector, which has 73% of all students. Considering only the federal public network, the number of enrollments grew 5.3% in the same period, surpassing 1.08 million students. The federal HEIs hold 57.3% of the enrollments in the public network.

networks, sometimes combined with expansions, or acquisition of HEIs by foreign investors (Lopes, 2014).

The following figure shows the distribution of public and private HEIs for each of the Brazilian regions.

Figure 3 – HEI distribution by Brazilian region in 2012



Source: MEC/Inep - Inep/Deed apud Maciel, Dourado and Faria (2013, p. 14).

Private institutions predominate in all Brazilian regions. The last census by the Ministry of Education indicates that from 2001 to 2012, the number of private universities in the country remained stable, with 85 distributed among the different states. However, the number of colleges (*faculdades*) rose from 1,059 to 1,898, and that of university centers (*centros universitários*) went from 64 to 129 during the same period⁴. From 2010 to 2012, enrollments in Social Sciences, Business, and Law saw an increase of 97.3%, and, for programs in Engineering, Production, and Construction, the increase was 22.8% – one of the reasons was the warming up of the real estate market and related fields. Figure 4 provides details of this.

⁴ Observing the population variation in the country, the data from the Brazilian Institute of Geography and Statistics (IBGE, 2013) reveal that Brazil grew 0.9% from 2012 to 2013 – i.e. it went from 199.24 million to 201.03 million inhabitants, a growth of 1.79 million people.

Figure 4 – HEI enrollments and new students by field of study

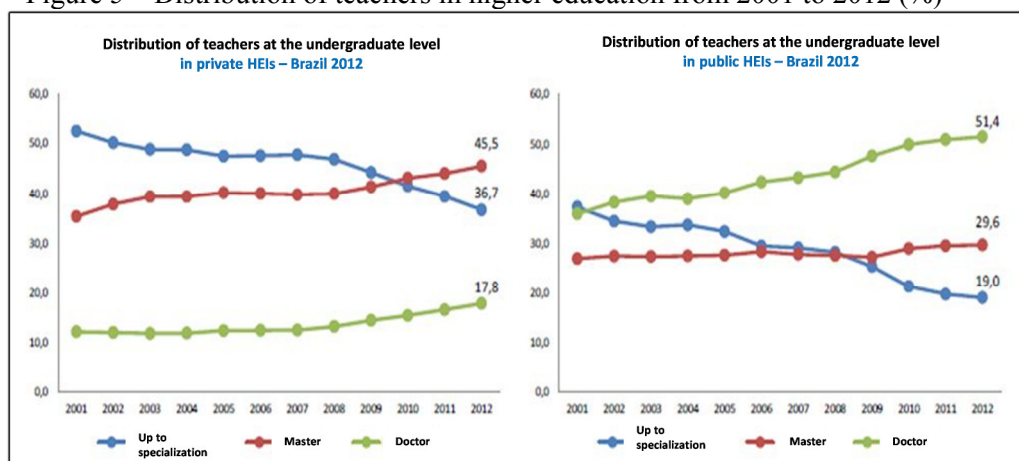
Field of study	Enrollment for each 10 thousand inhabitants					New students for each 10 thousand inhabitants					New students for each 10 thousand students				
	Total OCDE 2010	Brazil 2010	Brazil 2011	Brazil 2012	Delta 2012x 2010	Total OCDE 2010	Brazil 2010	Brazil 2011	Brazil 2012	Delta 2012x 2010	Total OCDE 2010	Brazil 2010	Brazil 2011	Brazil 2012	Delta 2012x 2010
Social Sciences, Business, and Law	202.5	138.6	143.3	145.4	5%	29.9	47.1	50.3	59	25%	30.9	21.6	22	22.9	6%
Education	55.3	70.7	69.4	68.4	-3%	8.7	23.7	23.3	24.5	3%	9.7	12.2	12.2	11.2	-8%
Health and Social Wealth	72.7	46.9	47.7	48.2	3%	13.4	14.3	14.3	16.2	13%	13.6	7.5	7.8	8.1	8%
Engineering, Production, and Construction	78.5	33.1	38.9	44.5	34%	15.3	12.3	14.8	18.8	53%	10.6	3.1	3.3	3.7	19%
Science, Math, and IT	47.3	21.8	21.7	21.6	-1%	8.4	8.5	8.2	9	6%	7.4	2.9	2.9	2.9	0%
Agriculture and Vet	9.5	7.6	8	8.3	9%	1.9	2.2	2.3	2.7	23%	1.3	1	1	0.9	-10%
Arts and Human Science	63.8	7.7	7.9	8	4%	12.6	2.8	3	3.4	21%	11.1	1.2	1.3	1.4	17%
Services	28.3	7.3	7.4	7.7	5%	5.5	3.1	3.4	3.8	23%	5.2	1.6	1.5	1.6	0%

Source: Mec/Inep - OCDE - IBGE - Inep/Deed apud Mec/Inep (2013, p. 17).

Figure 4 shows that programs in Engineering, Production, and Construction were those that most stood out in enrollments and new students for each portion of 10 thousand inhabitants. Comparing 2012 to 2010, Education had a decrease in the number of enrollments and new students. Meanwhile, Social Sciences, Business, and Law, during the same period, represent the second group that most stands out in the number of new students. Complementary data from IBGE (2012) show that 37.9% of male students from 18 to 24 years old stop studying before graduation. On the other hand, the dropout rate is 26.6% for women in the same age group⁵.

Regarding teachers, Figure 5 presents their distribution in private and public higher education according to their educational level.

Figure 5 – Distribution of teachers in higher education from 2001 to 2012 (%)



Source: MEC/Inep - Inep/Deed apud Maciel, Dourado and Faria (2013, p. 25).

In private HEIs, the percentage of teachers with degrees up to specialization (an intermediary degree between undergraduate and master's) predominated until 2009, but the percentage of teachers

⁵ When it comes to elementary education, the data indicate that 21% of students do not complete their studies. Of those that do complete their studies, 27% do not continue on with secondary education. This implies a large number of adolescents that do not enter higher education.

with master's degrees surpassed this at the end of 2009. The percentage of teachers with doctorates, even with a discreet increase, was always the lowest between 2001 and 2012. In public HEIs, we see the inverse: the percentage of doctors was the highest after 2001. Furthermore, their percentage of teachers with master's degrees surpassed that of degrees up to specialization in 2008. In public HEIs, the primary requirement for contracting professors is the degree, and a higher degree is important for career progression – two factors that favors the prevalence of doctors in these institutions. These HEIs frequently contract professors for a maximum of 40 hours of work per week, and those professors must necessarily dedicate part of their work to research. Private HEIs prioritize contracting the minimum number of masters and doctors to fulfill the percentage levels of titled degrees for the faculty, which helps to maintain low remuneration costs. Generally, in these HEIs, professors who work in the undergraduate level only receive remuneration for the time they effectively work in classroom. Their salaries can be very low if they teach only one or a few courses. Being a doctor does not greatly help them to increase their remuneration or advance in career, different from what happens in public HEIs.

In relation to students, the Ministry of Education's data for 2012 shows the following.

Figure 6 – Data on students in 2012

Characteristics of the undergraduate students	Type of Education	
	In classroom	Distance learning
Gender	Female	Female
Private or public education	Private	Private
Grade	Bachelor's degree	Licenciate
Shift	Evening	-
Age (enrollment)	21	31
Age (admission)	18	30
Age (graduation)	23	31

Source: MEC/Inep –Deep/Inep (2012).

The non-numerical elements in Figure 6 refer to the statistical mode (most frequent data), and the numerical elements refer to the statistical average distribution of data on Brazilian HEI students for the different levels of education. Most students are female and attend private HEIs, both for in-class courses and distance learning. Most in-class students take classes in the evenings, and those in distance learning are around ten years older.

3.1- Entrepreneurial activities in Brazil and education on the theme

The Global Entrepreneurship Monitor (GEM) study, conducted in Brazil since 1999, registered for 2013 a rate for total early-stage entrepreneurial activity (TEA) of 17.3%. This indicates that approximately 17 in each group of 100 Brazilians from 18 to 64 years of age are creating or managing new businesses in the country. This rate is the second highest for Brazil since 2002. Adding to the TEA the 15.4% rate for total established enterprises (TEE), referring to entrepreneurs who have had businesses for more than 42 months, around 40 million Brazilians are entrepreneurs – i.e. 32.3% of the population aged 18 to 64 years old (Greco et al., 2013). The TEA numbers for men and women are close: 17.2% and 17.4%, respectively. However, examining the reasons for having a new business, women act more out of necessity (34%) than men (23%), although the majority of entrepreneurs act considering an opportunity (71.3%).

According to data from GEM 2013 (Greco et al., 2013), in Brazil, young entrepreneurs, aged 25 to 34, predominate at 21.9%. The next range is 35 to 44 year olds, at 19.9%. The first range

coincides with that of recent university graduates in terms of age. However, the percentage of entrepreneurs with more than a secondary education is 15.8%, a proportion below the 18.5% who have only completed secondary education. This comparison could lead some to question the value of higher education in preparing to be an entrepreneur because of the apparent contradiction that the number of entrepreneurs with more schooling is lower. But one must take into consideration that the percentage of Brazilians with university diplomas (11.26%) is less than the 35.8% concerning those who have completed secondary education (IBGE, 2010).

Brazilian specialists consulted in the study by Greco et al. (2013) emphasize that the government offers little encouragement for entrepreneurs and that Brazilian regulations do not facilitate their activities in the country. Yet, it should be recognized that some improvements are occurring, such as the 2006 General Law for Micro and Small Businesses and the change promoted by the Super Simple Law – Complementary Law 147 of 07/08/2014, although its full regulation is still pending (Receita Federal, 2014).

Most entrepreneurs (52.9%) consider themselves to have the skills, knowledge, and experience necessary to start a new business; 57.3% of entrepreneurs state that fear of failure does not prevent them from starting a business (Greco et al., 2013). These data reveal an overestimation of the conditions for being an entrepreneur, which is also seen in the fact that most new businesses do not present strong conditions for competing and growing in the market, because the technology used by more than 99.9% of them is over 5 years old, and 99% offer services and products that are either not new or match that of competitors (Greco et al., 2013). As such, according to what is reported by Greco et al. (2013), one can infer that more schooling and preparation for entrepreneurs appears recommendable, as it would provide greater innovation. This highlights the potentially beneficial role of universities and innovation agencies.

The importance of university studies tends to be even greater when considering the opinions of the specialists consulted by the GEM (2013) that the development of attitudes and knowledge to be entrepreneurs receives virtually no attention at the elementary and secondary levels of education. This converges with the concerns expressed in a previous report by the Brazilian GEM (Greco, et al., 2010).

Brazilian society has already debated the need for better entrepreneurship preparation, with suggestions on inserting courses and activities on the theme in education at all levels and in all areas. People most interested in the issue have sent questions to the National Council on Education (CNE). In its opinion 13 of 2010, the CNE Board of Basic Education was against creating a specific course in entrepreneurship, recommending that the theme be treated in an integrated way in the different disciplines already studied in secondary schools (Diário Oficial da União, 2010). Even so, this recommendation does not impose any requirement and does not address the other levels of education, which also need to deal with the issue. As such, this GUESSS Brazil report focuses on higher education in the following section.

3.2- Higher education and entrepreneurship in Brazil

The 2011 GUESSS Brazil report traced the history of entrepreneurship education (EE) in Brazilian HEIs. From 1981 – when the first course in the area was offered in a HEI – to the present, the demand for and offer of EE has grown. That report registered as very frequent the offering of courses concerning business planning as well as a high demand for them coming from 81.4% of the student respondents to that edition of the study. The report (Lima et al., 2011) and more developed academic publications that we wrote (Lima et al., 2014a; Lima et al., 2014b) emphasize the need for more varied offerings concerning activities and courses, going beyond business planning and establishing greater proximity between EE and the reality of entrepreneurs.

According to the report and the publications, these initiatives to improve EE must complement current advances in the area. Hashimoto (2013), in his study on entrepreneurship centers (EC) existing in Brazilian HEIs, recently registered one of these advances. The primary function of ECs is the strengthening and disseminating of preparation in entrepreneurship through promoting lectures, workshops, technical visits, educational programs, competitions, practical activities, networking, etc. The study mapped 1,600 institutions, of which 400 (25%) have some type of EC. The author analyzed

33 of them in detail because they fulfilled relatively well the primary functions of an EC. According to him, among those 33 ECs, 58% are concentrated in the southeast region of Brazil and primarily emphasize the offering of entrepreneurship courses, which occupy 30% of the time of professors connected with them. On average, these ECs offer two courses for undergraduate students and one for graduate students in various schools in the same HEI, quite often as required courses. The offering is well below that of ECs in developed countries, which register double the amount at the undergraduate level and three courses at the graduate level. Even so, the average number of students taking these courses each time they are offered is 200 for undergraduate students and 99 for graduate students – much higher than in ECs abroad (Hashimoto, 2013). The size of the Brazilian population and the average number of students per HEI in Brazil, compared to the reality of the other countries, could be an explanatory element for this difference.

In Brazil, some HEIs, such as PUC Rio de Janeiro, are well known for the high advances they have achieved in EE offerings. Through the Coordination for Entrepreneurship Education (CEMP), it offers all students complementary training in EE with a special certification. CEMP also promotes other types of support to entrepreneurship, such as the *Instituto Gênesis*, a leading Brazilian incubator (CEMP, 2014).

Something even rarer in Brazil is EE as a theme approached in different courses concerning other subjects, such as finance, human resources management, marketing, and small business management. Outside the business management field, it is virtually nonexistent. The São Paulo SENAC is an example of an institution that has reached the transdisciplinary level in EE through its technical and higher education courses.

On the other hand, there are innovative experiences in EE that stray from the classic course format. Such is the case of Entrepreneurship Cells, a methodology created in Recife by Genésio Gomes in 2008 to encourage students to develop entrepreneurial spirit, proactiveness, and autonomy. Here, cell leaders encourage groups of students to act on a theme. The method has already become multi-institutional and, in 2012, received the Brazilian Award for Entrepreneurship Education (Endeavor-Sebrae) and the Santander University Entrepreneurship Award in the Creative Economics category (UPE, 2014).

In addition to the formal HEI initiatives, a plethora of competitions encouraging entrepreneurial mentality and startups has appeared. For example, Sebrae has its University Entrepreneurship Challenge, which encourages students in all fields through a national competition to develop entrepreneurial attitudes. The total number of participants in 2014 surpassed 34 thousand students.

Concerning the development of EE in the country, the 2011 GUESSS Brazil report has already highlighted the important role played by scientific meetings, such as the EGEPE, held by the National Association for Studies in Entrepreneurship and Small Business Management (ANEGEPE) and the Entrepreneurial Education Roundtable (REE), organized by Endeavor Brazil and Sebrae. In 2013, another type of meeting established by Sebrae stood out: the National Entrepreneurship Education Meeting, involving representatives from all levels of education. At this gathering, the Ministry of Education and Sebrae signed an agreement to introduce EE into the National Access to Technical Education and Jobs Program (PRONATEC).

Also in 2013, a partnership between the Universidade Nove de Julho (UNINOVE) and ANEGEPE organized in São Paulo the International Forum on Entrepreneurship. At the event, the theme “Training to Be Your Own Boss” was debated by the public present and by Brazilian researchers with the Canadian professor Louis Jacques Filion, an international expert in entrepreneurship. ANEGEPE, when conducting its biennial congress, EGEPE, includes panels with specialists to debate EE, especially in higher education. There are also more regional EE debate initiatives outside the Southeast and South of Brazil, the most developed regions in Brazil. For example, in the Northeast of the country, the Alagoas Entrepreneurship Education Meeting saw its second edition in 2014.

One can cite other recent advances in Brazil, such as the creation of the first Department of Entrepreneurship and Administration at the Universidade Federal Fluminense in 2013 (UFF, 2014). Also in 2013, the Sebrae/SP Business School was created in partnership with the Centro Paula Souza,

which is responsible for the technology colleges – FATEC – and the technical schools – ETEC – in the state of São Paulo. One of the school’s objectives is to promote education integrated with work and research practices, privileging entrepreneurship (Sebrae-SP, 2014). Additionally, in 2014 the USP School of Economics and Administration (FEA) began giving classes in its Professional Master’s in Entrepreneurship, with two areas of study: intrapreneurship and development of new businesses (FEA-USP, 2014).

Those initiatives are based on the supposition that EE positively affects the entrepreneurial intention, the generation of benefits for society, and the self-efficacy of students (the level of belief in having enough competences to be entrepreneurs). However, this relation is not assured for any type of EE and with any level of quality. Some empirical studies cited by Lima et al. (2014a) showed a drop in entrepreneurial intention and self-efficacy for university students with EE.

The results of this empirical study itself (Lima et al., 2014a), using responses from 25,751 students at 37 Brazilian HEIs, are similar to that. Clearly, the drop in entrepreneurial intention and self-efficacy is not necessarily harmful – after all, for example, it would not be good for people to be overly self-confident but unprepared and working as entrepreneurs with an exaggerated risk of failure. In this situation, the EE could serve to make candidates more realistic, considering entrepreneurship not as easy as they had thought. Even so, the results of these different studies serve as a warning for reflection on the possibility that EE, however good its promoters’ intentions may be, may not produce the expected benefits if it does not have an adequate composition of activities and courses or sufficient quality. Thus, even if one believes that Brazilian HEIs are making progress in the quantity and variety of EE offerings, a detailed analysis of the offerings regarding their content and quality is necessary. This is the type of analysis we intend to promote with GUESSS Brazil.

Hashimoto (2013), in his research on entrepreneurship centers, calls attention to the need for a new paradigm in Brazilian EE in which professors would use more extensively the experiential and dynamic approaches, proposing activities that would challenge students with the use of simulations, laboratories, practices, and tests. According to him, training for professors is important for them to assume a new position and acquire a new pedagogical repertoire to improve EE in Brazil.

4- Methods, data and characteristics of the sample

Internationally, the Swiss Research Institute of Small Business and Entrepreneurship and the Center for Family Business at the Swiss university of St. Gallen promote GUESSS. Dr. Philipp Sieger, a professor and researcher connected to these two entities, manages the study. In turn, Dr. Edmilson Lima, a professor and researcher of Grupo APOE – Research Group on Administration of Small Organizations and Entrepreneurship nationally coordinates GUESSS Brazil. Both the professor and the group are connected with the master’s and doctorate programs in Administration at Universidade Nove de Julho – UNINOVE, in São Paulo. Similarly, each of the other 33 countries that participate in GUESSS in 2013-2014 has its own national coordination, as detailed in the international report available at http://guesssurvey.org/e_publication_int.html.

GUESSS Brazil is a survey that uses, for data collection, a structured questionnaire that is internationally standardized (except for some final questions) but adapted to Brazilian Portuguese. The questionnaire uses multiple choice questions responded via the Internet by students after they accept invitations sent by professors, as described in the introduction to this report. The international standardization of the questionnaire is necessary given that GUESSS is a panel study that aims, among other things, to allow comparison of data between different countries. The responses were stimulated with some compensations offered to students and with pedagogical material offered to professors, as described in the introduction.

This new edition of GUESSS Brazil in 2013-2014 was possible thanks to the indispensable support of various actors: partner professors (listed at <http://guesssbrasil.org/instituicoes-de-ensino-participantes>), who handled data collection at each of the more than 60 Brazilian HEIs; other professors, coordinators, directors, and even rectors, who answered the request for assistance from the partners; UNINOVE, for facilitating the national study coordination and providing funding for the project; the team of collaborators at the national coordination, among whom are the co-authors of the current report; and, of course, a great many students who responded to the online questionnaire.

4.1- Data collected in Brazil and the world

Table 1 – Number of responses per country

Country	Number of responses	Total percentage
<i>Brazil*</i>	12,561	11.5
Poland	11,860	10.9
Germany	10,570	9.7
Spain**	10,545	9.7
Netherlands*	9,907	9.1
Hungary	8,844	8.1
Italy	7,765	7.1
Switzerland	7,419	6.8
Singapore	6,471	5.9
Russia*	4,578	4.2
Austria	4,220	3.9
Malaysia**	2,452	2.2
Estonia**	1,391	1.3
Israel**	1,086	1.0
Denmark**	1,027	0.9
Slovenia**	903	0.8
Japan*	890	0.8
Colombia**	801	0.7
Finland	704	0.6
England*	654	0.6
Mexico	637	0.6
Canada**	509	0.5
Australia**	495	0.5
Greece	435	0.4
Belgium	402	0.4
France	332	0.3
Scotland**	280	0.3
Romania*	277	0.3
United States**	245	0.2
Portugal	213	0.2
Liechtenstein	203	0.2
Argentina*	190	0.2
Luxemburg	153	0.1
Nigeria**	7	0.0
Total	109,026	100

* Countries that entered the study in 2011.

** Countries that entered the study in 2013.

Table 2 – Number of questionnaire responses by HEI in Brazil

HEI ⁽¹⁾	# of responses ⁽²⁾	%	# of responses in 2011 ⁽²⁾	% in 2011
CEUT - PI	155	1.2	454	1.8
ESPM - SP	853	6.8	766	3.0
FACCAMP - SP	11	0.1	523	2.0
FACESM - MG	151	1.2	213	0.8
FADERGS - RS	79	0.6	(previously ESADE) 480	1.9
FAI - MG *	55	0.4		
FATEC Pindamonhangaba - SP	82	0.7	10	0.0
FECAP - SP *	118	0.9		
FGV - SP	7	0.1	22	0.1
FMU - SP *	17	0.1		
FURB - SC	52	0.4	121	0.5
IESUR - RO *	7	0.1		
IFSP Caraguatatuba - SP	12	0.1	10	0.0
IFSULDEMINAS - MG *	48	0.4		
INATEL - MG *	332	2.6		
Inspira - SP	9	0.1	106	0.4
SENAC - SP *	92	0.7		
UCDB - MS *	10	0.1		
UDESC - SC	694	5.5	141	0.5
UEL - PR	104	0.8	255	1.0
UEPB - PB *	17	0.1		
UERJ NOVA FRIBURGO - RJ *	103	0.8		
UFAL - AL *	200	1.6		
UFBA - BA	2,999	23.9	132	0.1
UFCG - PB *	97	0.8		
UFERSA - RN *	41	0.3		
UFFS - RS e SC *	85	0.7		
UFGD - MS	17	0.1	125	0.5
UFMS - MS	389	3.1	34	0.1
UFMT - MT	25	0.2	108	0.4
UFPA Bragança - PA *	40	0.3		
UFPB - PB *	36	0.3		
UFPE - PE	10	0.1		
UFPR - PR	9	0.1	70	0.3
UFRGS - RS *	179	1.4		
UFRPE - PE *	87	0.7		
UFRR - RR *	279	2.2		
UFRRJ - RJ *	553	4.4		
UFS - SE	155	1.2	167	0.6
UFSC - SC	103	0.8	73	0.3
UFSJ - MG	90	0.7	176	0.7
UFU - MG	6	0.0		
UFV - MG	1,082	8.6	562	2.2
Un. Mackenzie - SP	51	0.4	1,553	6.0
UnC - SC *	121	1.0		
UnG - SP *	89	0.7		
UNICAMP - SP *	5	0.0		
UNIFACS - BA	23	0.2	420	1.6
UNIFEI - MG	5	0.0	212	0.8
UNINOVE - SP	1,178	9.4	(adjusted to 1,040) 15,794	61.1
UNISAL - SP *	5	0.0		
UNISANTA - SP *	23	0.2		
UNISINOS - RS *	225	1.8		
UNITAU - SP *	245	2.0		
UNIVÁS - MG	8	0.1	43	0.2
UNIVATES - RS	11	0.1	627	2.4
UNOESC - SC *	5	0.0		
UPE - PE *	15	0.1		
USF - SP	229	1.8	1,247	4.8
USP city of São Paulo - SP	41	0.3	52	0.2
USP São Carlos - SP *	47	0.4		
UTFPR - PR *	175	1.4		
Other	570	4.7	535	2.1
BRAZILIAN TOTAL	12,561	100	(adjusted to 11,113) 25,867	---
INTERNATIONAL TOTAL	109,026	---	93,265	---

⁽¹⁾ A list with the names of the study's organizers in each HEI is available at www.guesssbrasil.org.

⁽²⁾ This table only presents those HEIs with 5 or more completed questionnaires.

* HEIs that enrolled in the study in 2013.

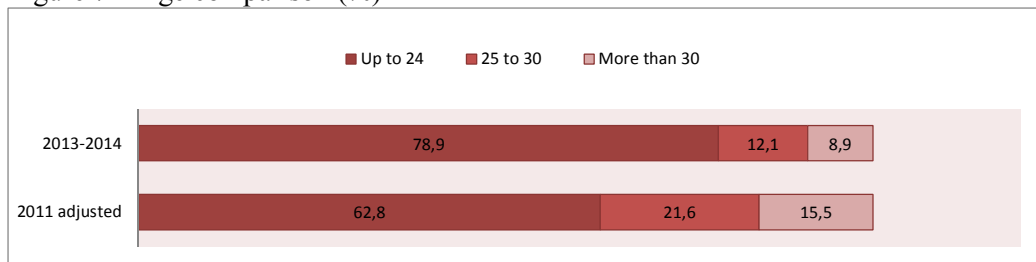
The 2013-2014 sample, despite being smaller than that of 2011, presents advantages. It is more balanced in the distribution of responses coming from public and private HEIs and the different regions of Brazil. While 70.6% of responses essentially came from two private HEIs in the city of São Paulo in 2011, the new 2013-2014 scenario has 28.8% for private HEIs in various states, 66.6% for public HEIs in various states, and 4.6% from others. The item “other” encompasses responses from students that did not identify themselves as students of the HEIs listed in Table 2.

Seeking to rectify part of the possible biases in the 2011 report caused by sample imbalance and make a more plausible comparison of statistics between that year and 2013-2014, the current report uses the 2011 data with an adjustment in the number of responses from UNINOVE. This adjustment refers to the random selection from the 2011 sample of only 1,040 respondents from UNINOVE (to replace the original 15,794 respondents) and the use of an adjusted sample for that year with a total of 11,113 respondents. This adjusted sample is the base in the present report for comparing the data with 2013-2014 in such situations where the comparison is possible and pertinent. When the comparison is applied, the graphs presented hereafter in the text highlight the adjustment, referring to it as “2011 adjusted.” The new number of UNINOVE respondents considered in the 2011 adjusted sample corresponds to 10.33% of the total number of respondents of the other HEIs (i.e. the total without the UNINOVE respondents), which is the same percentage seen in the 2013-2014 sample. This correction reduces the number of 2011 respondents from the city of São Paulo to 31.6% of the total adjusted sample.

4.2- Characteristics of respondents

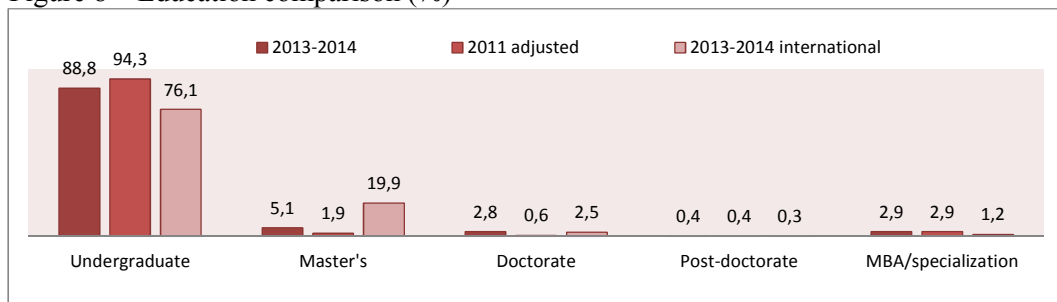
4.2.1- Age, education level, and gender

Figure 7 – Age comparison (%)



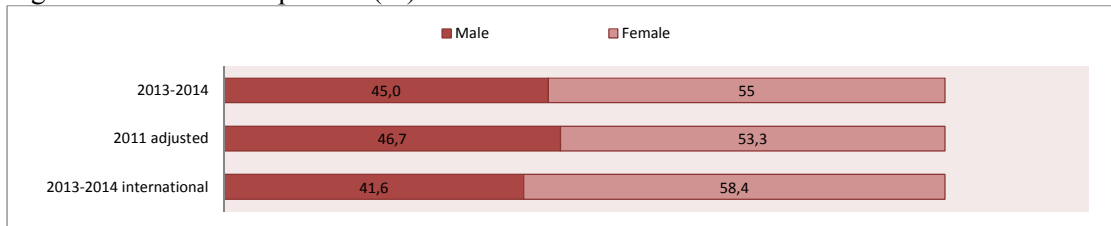
As one can see in the 2011 study, most of the Brazilian respondents are up to 24 years old, while the age group with the lowest number of respondents is that over 30 years old. This follows the distribution of respondents according to level of studies: undergraduates (the youngest students) being the source of almost 90% of the Brazilian responses, as shown in Figure 8. The 2013-2014 international study, including Brazil, has an average age of 23.1 years old and a median of 22 years old, while the average for Brazil is 24 years old and the median 22 years old. The international distribution by level of study has 76.1% of respondents being undergraduates and 19.9% being master’s students. Figure 8 details the other percentages.

Figure 8 – Education comparison (%)



Participation by master's and doctoral candidates in the 2013-2014 Brazilian sample is greater than that for 2011. This explains the drop in the percentage of undergraduates from one period to the other: from 94.3% to 88.8%

Figure 9 – Gender comparison (%)



Women are the largest group of respondents from Brazilian HEIs (around 55%), with similar percentages seen in 2013-2014 and 2011. In the international sample, 58.4% are women.

4.2.2- Areas of study

Figure 10 – Distribution of respondents by field of study (%)

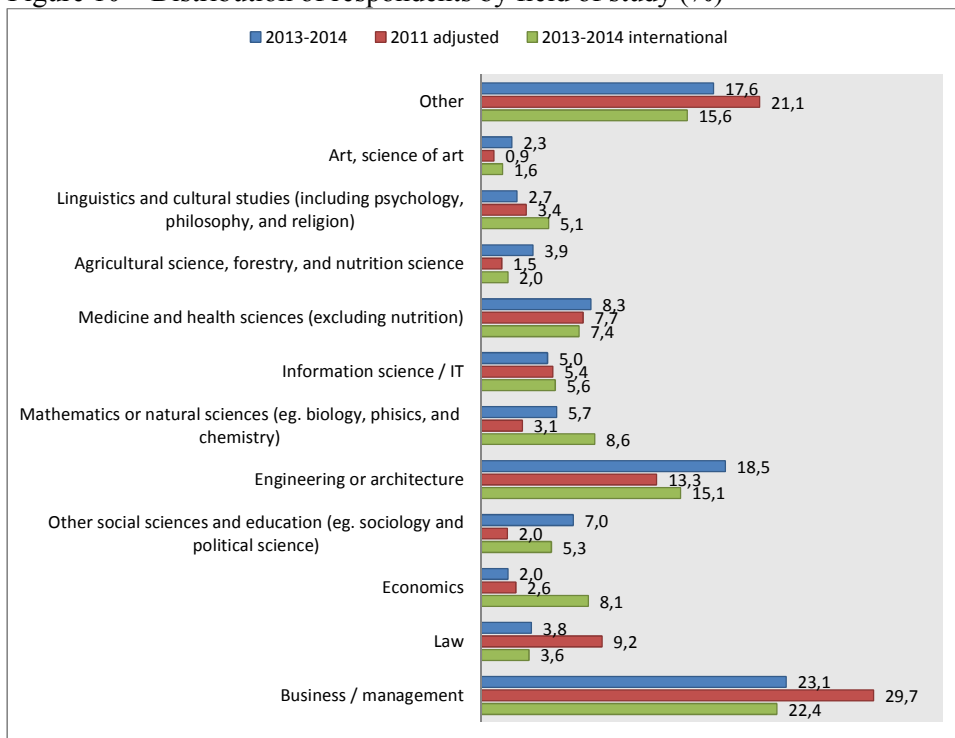
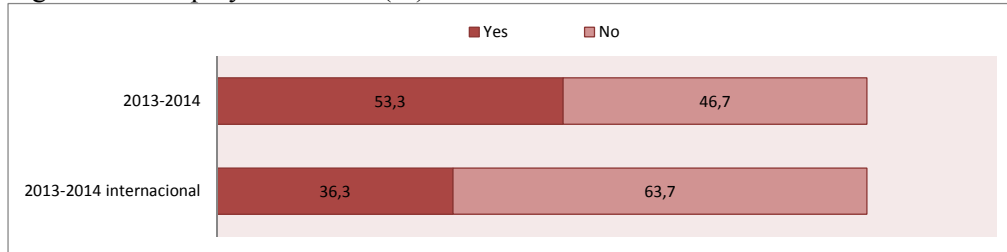


Figure 10 shows that the majority of students study Administration, with the 2013-2014 percentages near 23% for both Brazil and the international studies. This same proximity occurs around 16% for “other,” which gathers fields of study that the respondents do not associate with the other response options listed in the figure. A high percentage of respondents are from Engineering or Architecture. Comparisons only for Brazil indicate a drop in the percentage of Brazilian respondents between the two periods considered for Administration (6.6 percentage points or pp), Law (5.4 pp), and Other (3.5 pp), favoring the balance of the 2013-2014 Brazilian sample. On the other hand, participation by Engineering or Architecture students rose 5.2 pp. According to Figure 4, in section 3, this coincides with an increase in the number of students in these fields from 2010 to 2012. Other variations appear in Figure 10; of note is the 5 pp higher number for 2013-2014 in Other Social Sciences and Education.

4.2.3- Work and study

Different from the 2011 survey, in 2013-2014, GUESSS Brazil and GUESSS international asked students about holding a job and their own average study performance. The data obtained regarding these aspects are compared in the figures of this section.

Figure 11 – Employed students (%)



According to Figure 11, a greater proportion of students from Brazilian HEIs (53.3%) has a regular job in comparison to the international sample (36.3%). According to other responses obtained from students, there is also a considerable difference between the samples regarding the average hours dedicated weekly to work: 33.7 hours for Brazil and 25.7 hours for the international sample. This indicates that the reality of work for Brazilian students is closer to the hours considered in many countries as full-time (40 hours) and that respondents in the international sample are closer to part-time (20 hours), which is normally considered more propitious to studies.

Figure 12 – Self-comparison of students’ study performance (%)



For data comparison, the questionnaire captured the responses on a scale of 1 (far below average) to 7 (far above average). The averages are 4.91 for the Brazilian sample and 4.78 for the international sample. This means that students in general perceive their performance as slightly above average – a little more for those from Brazilian HEIs, even having said they work more hours per week. A lower proportion of respondents from Brazil see themselves as having a below-average performance (6.4%), in comparison to the international sample (9.3%). On the other hand, a greater proportion of respondents from Brazilian HEIs see their performance as above average (29%), against the proportion for the international sample (25.4%).

5- Career choice intentions

GUESSS Brazil and GUESSS international also take career choice intentions into consideration, primarily in reference to entrepreneurship. As such, in the two studies, the respondents answered about their intentions for immediately after graduation and for five years after graduation.

Figure 13 – Career choice intentions for immediately after graduation (%)

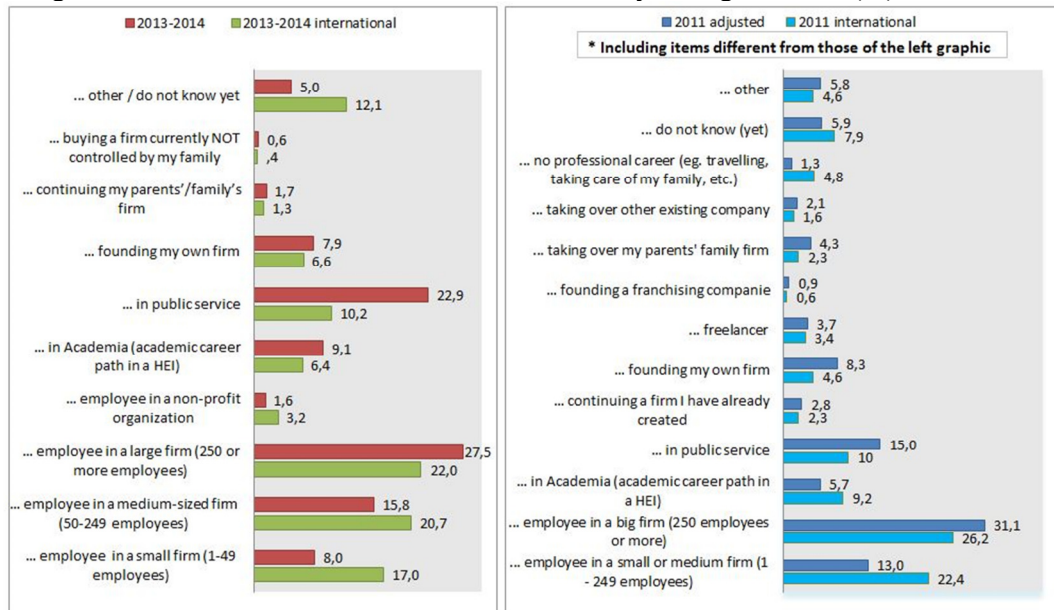
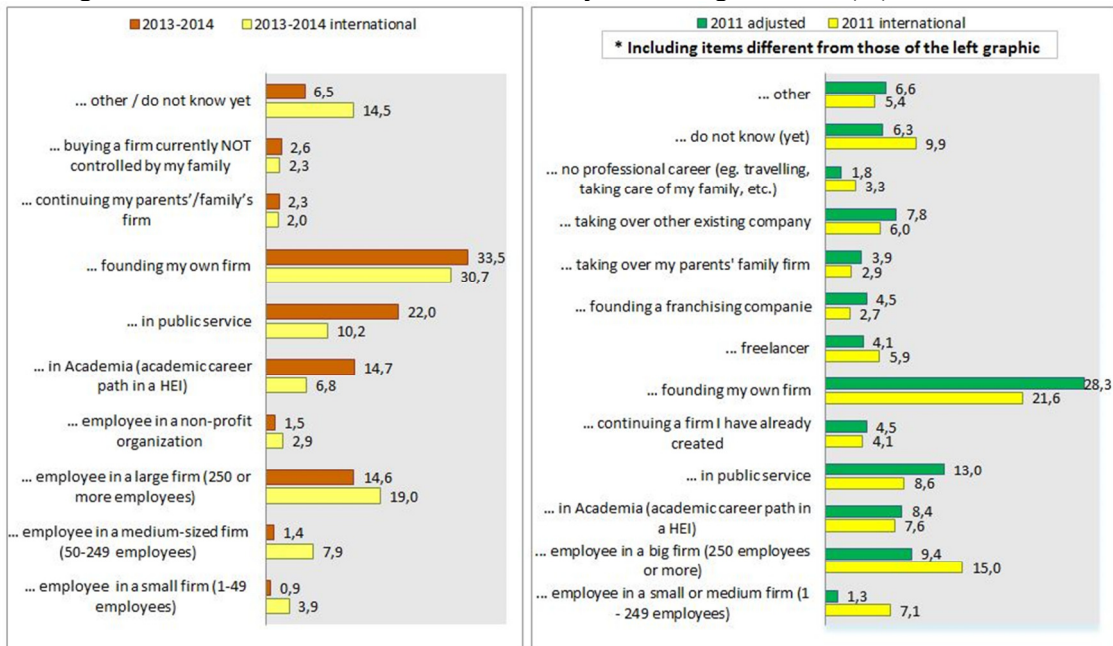


Figure 13 includes the data for “2011 adjusted” as an illustration of the situation concerning that year. We cannot use these data for precise comparison with the 2013-2014 data because the 2011 survey asked respondents about a greater variety of items, including those about employment in small or medium firm in a different way. There is also the item “employee in a non-profit organization,” which was not checked in 2011. With a greater variety of items for “2011 adjusted,” the tendency is for the percentages of its responses to be more distributed and, thus, lower for each of them. As such, when taking an item such as “in public service”, one cannot affirm that a difference does in fact exist between the percentages 22.9% and 15.0%, referent to Brazil. For these reasons, two blocks compose the figure.

Using only 2013-2014 data for comparison of the Brazilian and international samples, one sees that a greater proportion of Brazilian respondents want to fund their own business (only 1.3 pp more), be employed in public service (12.7 pp more), and be in an firm with 250 employees or more (5.5 pp more). In the international sample, more respondents showed interest in having a job in a small- or medium-sized firm. In Figure 13, similar differences occurred in 2011 but with marked superiority in the Brazilian sample concerning funding one’s own firm. It would be interesting in future studies to verify, for example, if the change in profiles of the Brazilian sample between the different years (from a greater variety of regions and predominantly from public HEIs in 2013-2014, among others) helps to explain the more modest difference in 2013-2014 in the intention to fund one’s own firm.

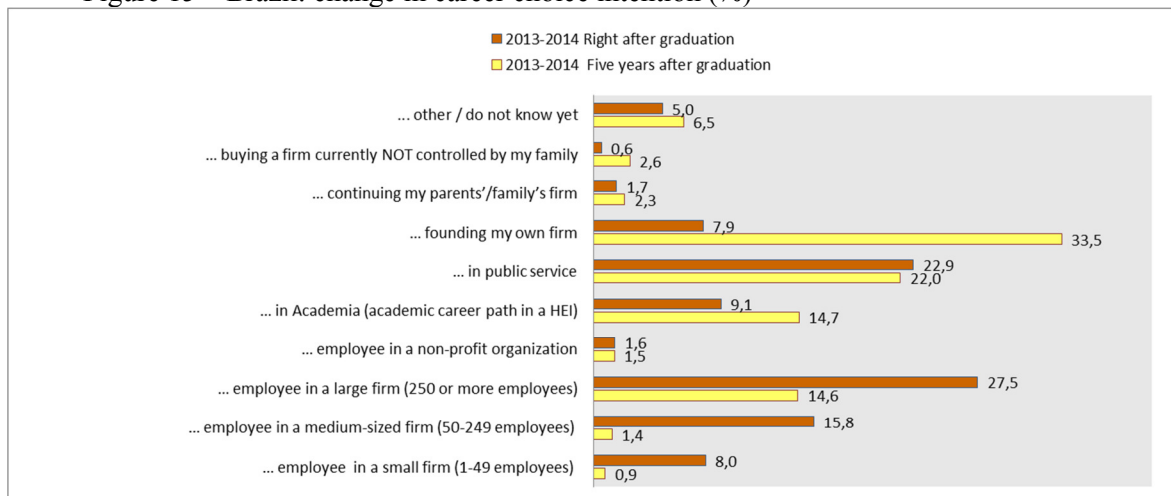
The percentage of Brazilians interested in working in the third sector decreased (1.6 pp less). Also of note is the lower percentage of Brazilian responding “other / do not know yet” (7.1 pp less) in 2013-2014.

Figure 14 – Career choice intentions for five years after graduation (%)



As also seen in 2011, the comparison of figures respectively for the periods immediately after and five years after graduation show that respondents from the Brazilian and international samples greatly change their preference for being employed to having their own firm. The percentages for the former decreased considerably while those for the later increased. Figure 15 summarizes Brazilian changes in the comparison between the two periods.

Figure 15 – Brazil: change in career choice intention (%)



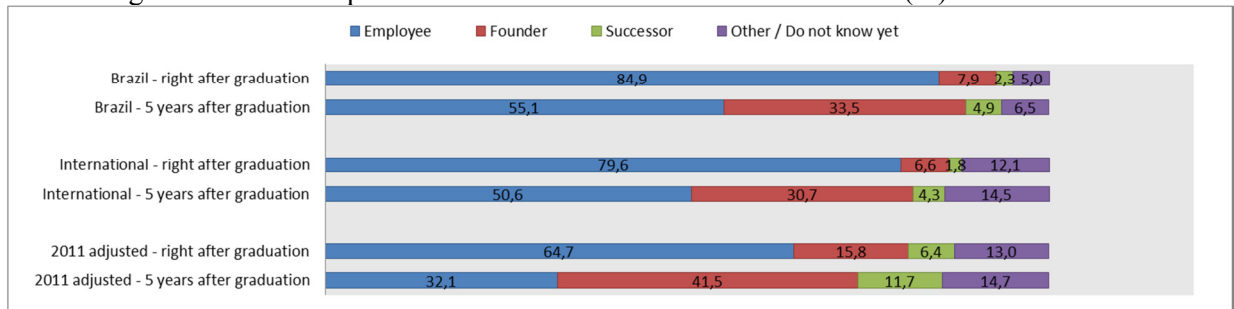
For Brazil, the drop for interest in being an employee even affects the preference for placement in a large firm, which decreases from 27.5% to 14.6%, while, in the international sample, the decrease from 22% to 19% is smaller. A similar process occurred in the 2011 study.

The change in the time spectrum considered also relates to rises in Brazilian and international percentages for two forms of having one's own business: acquiring a non-familial firm and continuing on with the family business. In 2011, the same occurred for an item not addressed in 2013-2014: continuing an already established firm. A certain proportion of respondents demonstrate interest in working in HEIs, according to a percentage that increases with the change in the time spectrum. For Brazil, the growth is 5.6 pp in the 2013-2014 study.

In a simplified form, Figure 16 groups the career choice intentions into being an employee, founder, successor, and other / does not know. The different comparisons allowed by the figure make

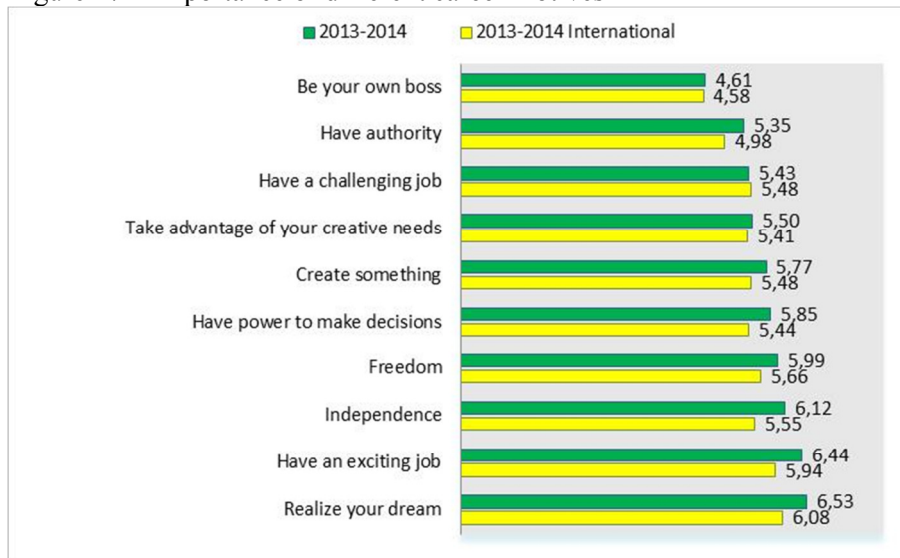
it easier to see a decreased interest for the employee option and an increased interest for the founder and successor options.

Figure 16 – General panorama of the differences in career intention (%)



To better understand the reasons for the respondents’ career choice intentions, we asked them about the motives for their choices using a scale in which the possible responses varied from 1 (not important at all) to 7 (very important). Figure 17 shows the motives presented to them for consultation and the averages for their respective responses.

Figure 17 – Importance of different career motives



The green bars represent the Brazilian results. These show that the Brazilian response averages are slightly and systematically greater than the international averages, with the exception of the item “have a challenging job.” The item “realize your dream” appears to be the most important for both the Brazilian and international samples – according to responses from all students in the samples indiscriminately: for those that want to be employees, founders, successors, and “other / do not know yet.” The fact that these responses come from all categories of respondents indiscriminately could explain why “be your own boss” appears as the reason with the lowest percentages in the figure. While the other items may apply without difficulty to any category of career choice, predominantly “realize your dream”, the item “be your own boss” applies best to the founder category, tending to receive lower numerical values from respondents in the other categories. This seems to make the average for the entire set of respondents lower for “be your own boss”.

What Figure 18 shows reinforces this potential explanation.

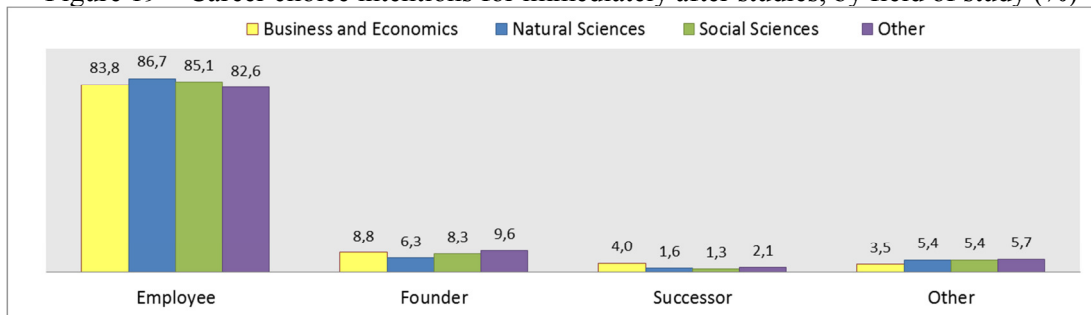
Figure 18 – Importance of career motives across different career groups



According to Figure 18, students in the founder category have the average response for the item “be your own boss” with the greatest superiority for the entire figure in comparison with the employee category (5.80 - 3.90 = 1.90). However, for the founder category, the highest averages, which surpass 6.0 (the maximum being 7.0 on the scale), refer to the items “create something” (6.1), “have power to make decisions” (6.2), “freedom” (6.1), “independence” (6.0), “have an exciting job” (6.5), and “realize your dream” (6.6). This last item also was the one with the highest average for the three career categories considered.

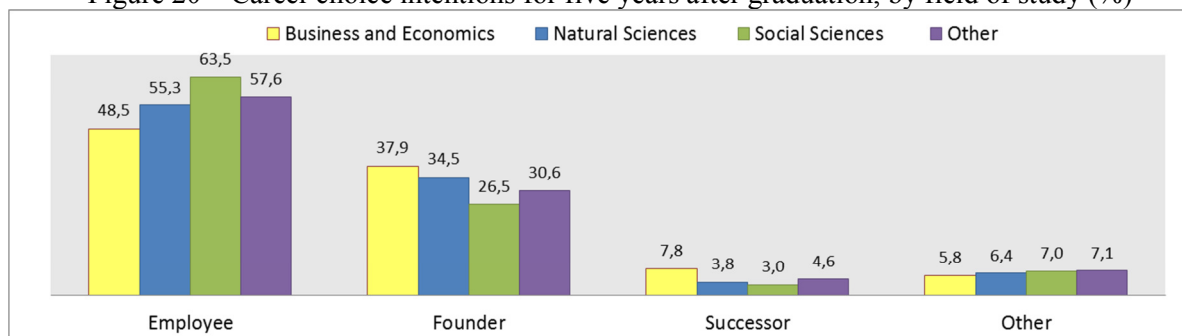
Figure 19 uses the same three career intention categories and the category “other” to provide a panorama of career intention distribution for the respondents according to their field of study.

Figure 19 – Career choice intentions for immediately after studies, by field of study (%)



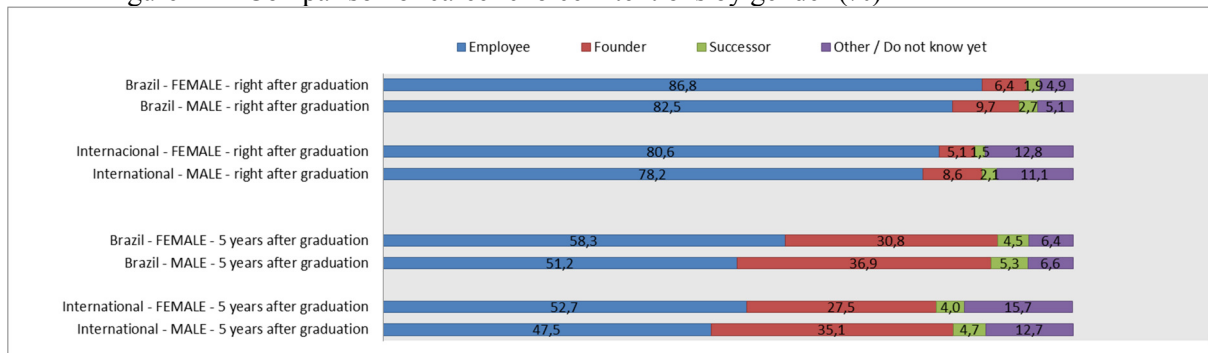
The Natural Sciences respondents (this includes Engineering and Exact Sciences, among others) and those from Business and Economics are the most interested in creating their own businesses. Those least interested in that are from Social Sciences. This difference seems to relate to the fact that education in Social Sciences normally does not focus on economic and business activities or development of products and services, which frequently are connected to the desire for having a business.

Figure 20 – Career choice intentions for five years after graduation, by field of study (%)



A comparison of Figures 19 and 20 shows that the greatest increase in the founder category occurs for students in Business and Economics (29.1 pp more). The smallest decrease in the employee category is related to Social Sciences students (21.6 pp less). In the successor category, students in Administration and Economics present the greatest proportion in the two periods considered (4.0% and 7.8%). This could be a reflection of an eventual more accentuated presence of children of business owners in this field of study.

Figure 21 – Comparison of career choice intentions by gender (%)



Comparing career choice intentions between the two genders reinforces the idea of a gender gap. This refers to the observation regularly made in numerous empirical studies, which show that women demonstrate less entrepreneurial intention and less self-efficacy than men (Lima, Nelson and Nassif, 2014). In Figure 21, this is repeated with women presenting a systematically lower percentage than men in the categories founder and successor.

6- Determinants for interest in being an entrepreneur

We presented the students a series of six items on a scale to identify their entrepreneurial intention better than could be done with yes/no type questions concerning having their own business⁶. The scale is one proposed by Liñán and Chen (2009), which offers a response gradation of 1 (strongly disagree) to 7 (strongly agree). Chart 1 presents the six items of the scale.

Chart 1 – Items of the scale for entrepreneurial intention

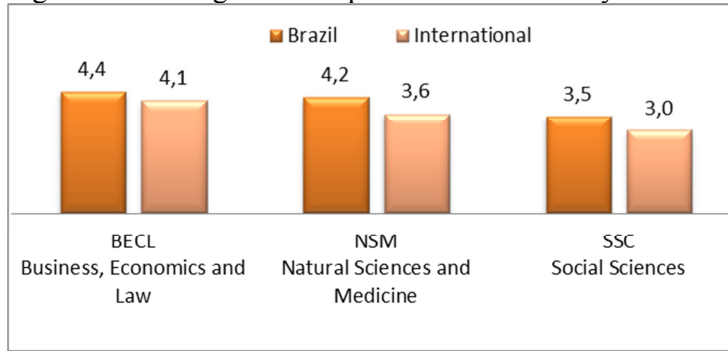
Item number	Statement
1	I am ready to do anything to be an entrepreneur.
2	My professional goal is to be an entrepreneur.
3	I will apply all the needed energy to begin and develop my own business.
4	I am determined to create an enterprise in the future.
5	I have seriously considered creating an enterprise.
6	I have the strong intention to create an enterprise someday.

Source: Liñán and Chen (2009).

We took the average for the responses obtained with these items as an aggregated measure of entrepreneurial intention, just as was done with the GUESSS international survey. It is useful in the comparison made in Figure 22 between the national and international samples for 2013-2014.

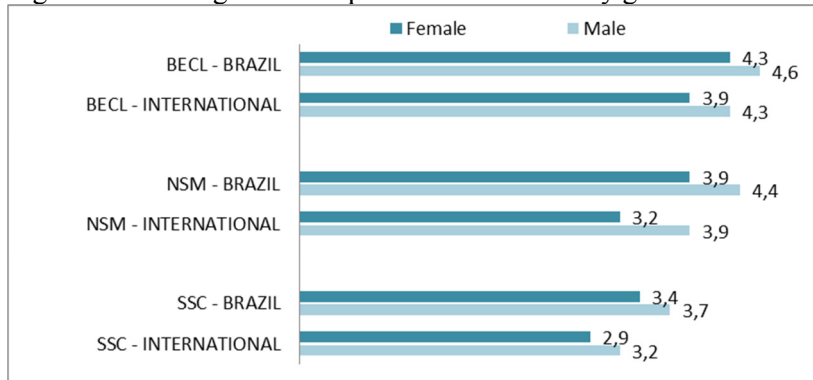
⁶ Yes/no type questions are a common and reliable approach (Zellweger et al., 2011) but present a weak potential for categorizing as non-entrepreneurs the respondents that seriously consider entrepreneurship for the future but still prefer another career option when asked to respond yes or no – i.e. this approach does not consider the entrepreneurial spirit of respondents that see an entrepreneurial career as a second desirable option (Sieger, Fueglistaller and Zellweger, 2014).

Figure 22 – Strength of entrepreneurial intention by field of study



Brazil presents higher averages for strength of entrepreneurial intention than the international sample for the three fields of study considered, with the greatest difference (0.6 pp) in Natural Sciences and Medicine. Such results corroborate various others presented in this report that show superiority for Brazilian students.

Figure 23 – Strength of entrepreneurial intention by gender and field of study



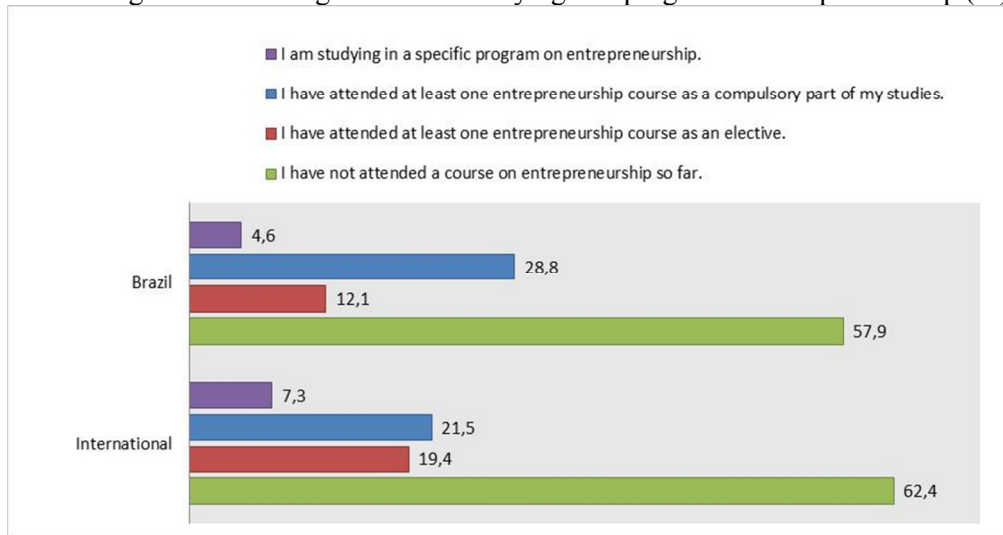
In Figure 23, the gender gap once more presents women as systematically having lower strength of entrepreneurial intention in the different fields of study in both the Brazilian and international samples. However, Brazilian superiority over the international sample occurs for both genders and is stronger when comparing the women in the two samples. Only women in the Social Sciences present superiority equal to men: 0.5 pp.

6.1- The educational institution context

This section presents elements that facilitate understanding of the role of HEIs and the environment they offer to students in developing entrepreneurial intention and preparing students to be entrepreneurs. This converges with the standards adopted by GUESSS for all other countries, according to which the questionnaire focuses, among other things, on collecting data on these aspects.

Thus, we asked students about courses and programs in entrepreneurship that they would have taken. On the questionnaire, they could freely mark one or more of the four possible responses outlined in Figure 24.

Figure 24 – Taking courses or studying in a program in entrepreneurship (%)



In Brazil, almost 60% of the respondents stated not having taken any course in entrepreneurship, and almost 30% reported having taken at least one required course in the area. The country presents superiority in comparison to the international sample in both cases. On the other hand, concerning optional courses, superiority lies with the international sample, which could indicate a greater student interest or more opportunities (or both) for taking optional courses. The lowest percentages occur for studying in a program (offering various courses) specifically in entrepreneurship – in Brazil or in the international sphere, but with Brazil presenting a 2.7 pp disadvantage.

Another point for consultation is the context in Brazilian HEIs. We invited students to indicate to what extent they agreed with the affirmations listed in Chart 2 relative to the entrepreneurial climate in their HEIs. On the scale, their responses could vary from 1 (not at all) to 7 (very much).

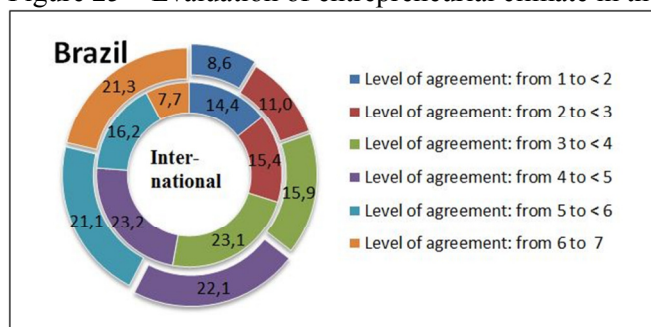
Chart 2 – Items related to entrepreneurial climate in the HEIs

Item number	Statement
1	The atmosphere at my educational institution inspires me to create ideas for new businesses.
2	The climate at my educational institution is favorable to my becoming an entrepreneur.
3	At my educational institution, students are encouraged to get involved in entrepreneurial activities.

Source: Luethje and Franke (2004).

The Brazilian general average for responses given to the three items concerning entrepreneurial climate in the HEIs is 4.3, while that international average is 4.0. This last one coincides with the average for the scale, while the national average slightly surpasses it. Figure 25 indicates that, in the national study, 38% of respondents evaluate the climate with values of 3 to 5. In the international study, this percentage is 46.3%. However, a proportion clearly more elevated for Brazil (42.4%) show evaluations from 5 to 7, different from what occurs internationally (23.9%) Thus, the Brazilian respondents more positively evaluate entrepreneurial climate at their HEIs.

Figure 25 – Evaluation of entrepreneurial climate in the HEIs (%)



In addition to knowing the evaluation of entrepreneurial climate and the number of courses or programs students are taking in entrepreneurship, it seems important to report how they evaluate their

learning in this area. Therefore, we also calculated the aggregate average of the responses given on a scale (from 1 = not at all to 7 = very much) composed of the items in Chart 3. To elicit responses in relation to the affirmations in Chart 3, the presentation text for the scale included this introduction: “The courses and offerings I attended...”.

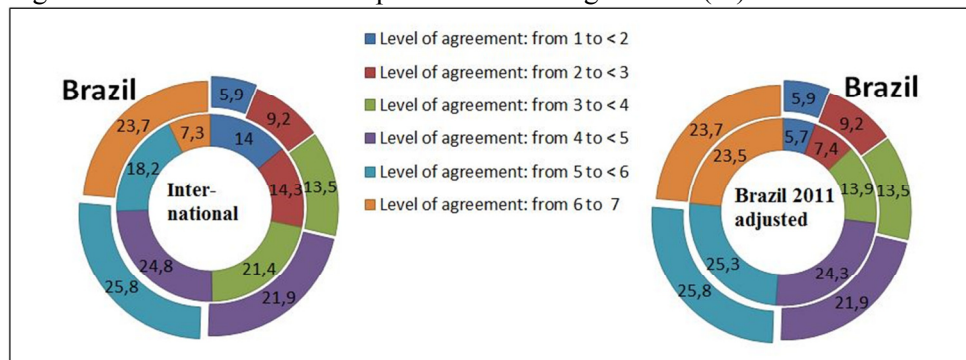
Chart 3 – Items related to studies in entrepreneurship

Item number	Statement
1	... increased my understanding of the attitudes, values, and motivations of entrepreneurs.
2	... increased my understanding of the actions that a person must do to start a business.
3	... improved my administrative skills for starting a business.
4	... improved my skills in developing a network of relationships.
5	... improved my ability to identify opportunities.

Source: Souitaris, Zerbini and Al-Laham (2007).

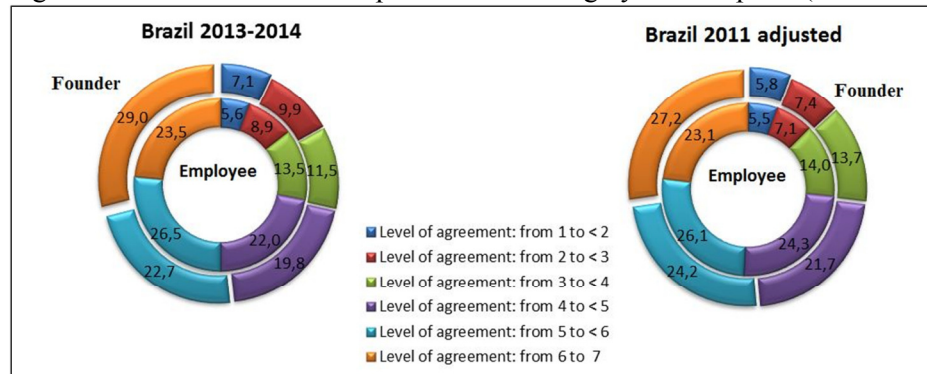
The international average for the answers is again 4.0. For Brazil, it is 4.6. The distribution of levels of agreement shown in Figure 26 is similar to that seen for the two samples in relation to entrepreneurial climate. For Brazil, the evaluations of 5 to 7 compose 49.5% of obtained responses. In the international sphere, however, this percentage is 25.5%. The right side of Figure 26 draws a comparison between the distribution of levels of agreement for “Brazil 2011 adjusted” and “Brazil 2013-2014.” This part of the figure presents little difference between the two periods.

Figure 26 – Evaluation of entrepreneurial learning at HEIs (%)



It seems well justifiable to suppose that the respondents with the intention to have their own business immediately after graduating would be more attentive to the quality of learning in entrepreneurship promoted by the HEIs, while those wanting to be employees would be less attentive to this. If the supposition is valid, the evaluation made by students with the two types of career intention may reflect the difference in levels of attention. To generate useful insights in this regard, we developed Figure 27.

Figure 27 – Evaluation of entrepreneurial learning by career option (founder vs. employee – %)



One can see that the differences in the evaluation of entrepreneurial learning are not elevated between the two groups of students considered in the two periods but tend to be greater starting with agreement level 4. This could indicate that the supposition is correct, as part of the group with the intention to be employees might think that a question on entrepreneurship does not apply very well to

them. However, considering the average for responses from each group, which varies slightly between 4.65 and 4.72 for the four Brazilian samples, weakens this idea. Using only one decimal place, the four would be equal to 4.7.

In addition to having information on the entrepreneurial climate and learning at HEIs, it is important to reflect on the effects of the two on students' entrepreneurial intention. This leads us to take steps similar to those of the international GUESSS report, in order to provide more potentially useful comparisons in the understanding and use of the Brazilian results.

In this regard, the following two figures show the relationships data suggest for the strength of entrepreneurial intention with the evaluation the students made of the entrepreneurial climate in the HEIs and with their evaluation of entrepreneurial studies. Both show a positive relationship for the variables in the national and international samples. The latter presents greater increments in strength of entrepreneurial intention for each increase in the two other variables.

Figure 28 – Evaluation of climate vs. strength of entrepreneurial intention

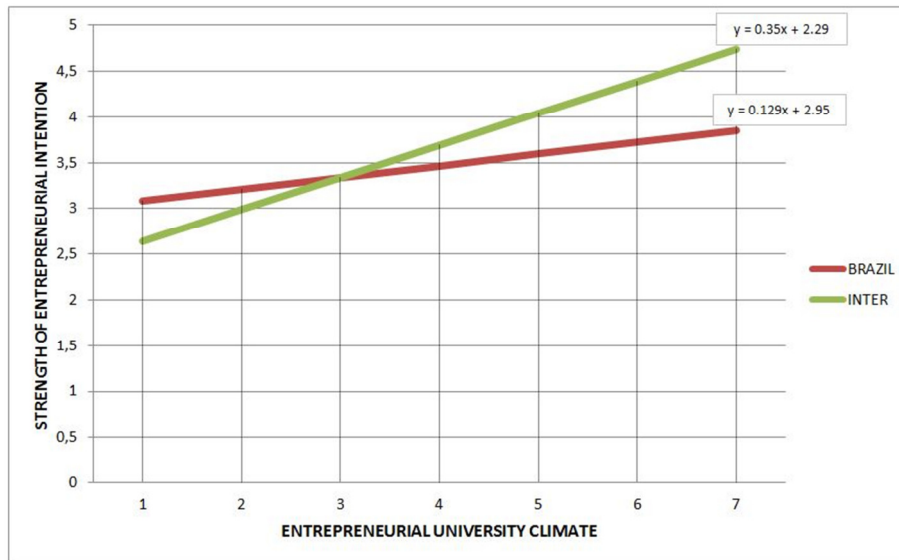
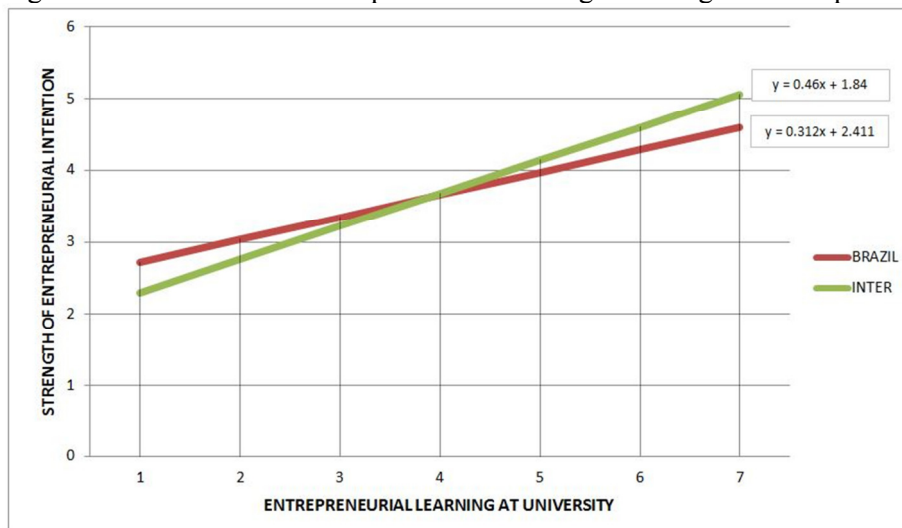


Figure 29 – Evaluation of entrepreneurial learning vs. strength of entrepreneurial intention



The effect of perceived risk in being an entrepreneur on entrepreneurial intention for students is another factor to consider. The development of this perception is not necessarily associated with the education offered by HEIs, but entrepreneurship education at HEIs may contribute to determine it.

We registered perceived risk on a scale (1 = strongly disagree; 7 = strongly agree) based on the statements in Chart 4.

Chart 4 – Items related to perceived risk in having one’s own business

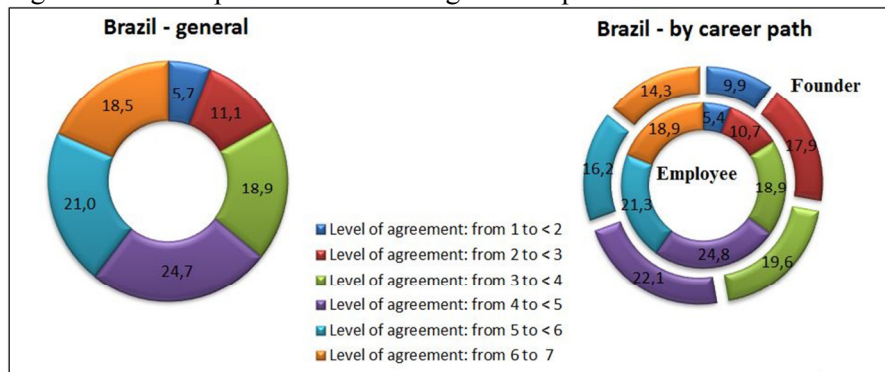
Item number	Statement
1	I consider that starting my own business is very risky.
2	I think it is dangerous to manage my own business.
3	I believe that owning my own business is very risky.

Source: Pennings and Wansink (2004).

Brazil’s general average for perceived risk is 4.31, which is lower than the international sample’s 4.85. This indicates that respondents from Brazil see entrepreneurship as less risky than their international counterparts. According to the international report, from a total of 34 countries, Brazil is the fourth lowest in perceived risk, behind Mexico (4.09), Colombia (4.08), and Argentina (3.90). Most countries above the average are developed. Poland clearly has the highest result (5.50).

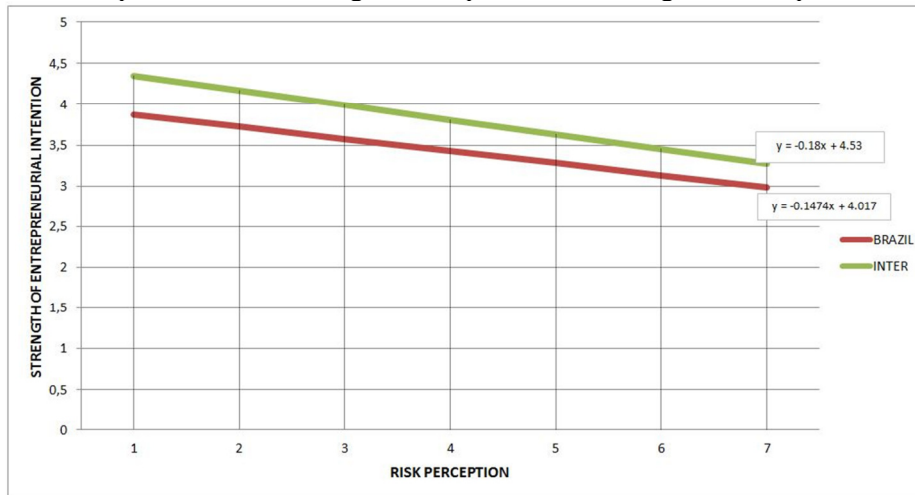
Figure 30 presents the distribution of Brazilian responses, according to the agreement levels registered in the scale. Regarding observed career options for developing this figure, the period considered is immediately after graduating. On the left side of the figure, without any distinction among career options, one can see that a greater percentage of the responses occur for the level of agreement “4 to < 5” in “Brazil – general”. On the right, in the comparison of responses only from those who want to be founders and those looking at being employees, the greatest percentage continues to be at that same level of agreement.

Figure 30 – Perception of risk in being an entrepreneur



Here, a new supposition seems plausible: respondents in the potential founder category perceive less risk in being an entrepreneur, given that they want to be one, than those seeking a job as a career option. The data on the right of Figure 30 lean in this direction by showing superiority in the percentages for potential founder at the 1 to < 4 levels of agreement and inferiority from there on. Additionally, the average response is 3.89 for founder and 4.34 for employee. This 0.45 pp difference reinforces the new supposition, suggesting the following relationship of the variables: a lower risk perception for entrepreneurship is associated with a greater strength of intention to be an entrepreneur. A linear regression projects the same relationship between variables, as shown in Figure 31.

Figure 31 – Perception of risk in being an entrepreneur vs. strength of entrepreneurial intention



Yet Figure 31 offers further information. It shows that, for the same level of perceived risk, the strength of intention to be an entrepreneur is higher in the international sample, and this superiority diminishes slightly with an increase in perceived risk⁷.

6.2- Family activities in entrepreneurship

Are children of entrepreneurs more likely to be entrepreneurs? Over the years, this question has received much attention in entrepreneurship studies, alongside other issues relating to the influences of family on career choice.

Data from the Brazilian sample suggest an affirmative response to the question, which converges with the results that predominate in academic literature. In Figure 32, one can distinguish respondents from the national and international samples for whom neither the mother nor the father is self-employed or the owner of a business – 64.6% and 68.7% respectively for the two samples. The figure also presents those whose parents are entrepreneurs – 35.4% and 31.3%, respectively, with a slight superiority for Brazil.

Figure 32 – Are your parents their own bosses or do they have their own businesses? (%)

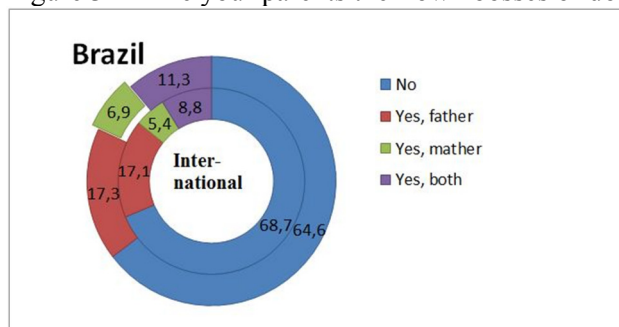
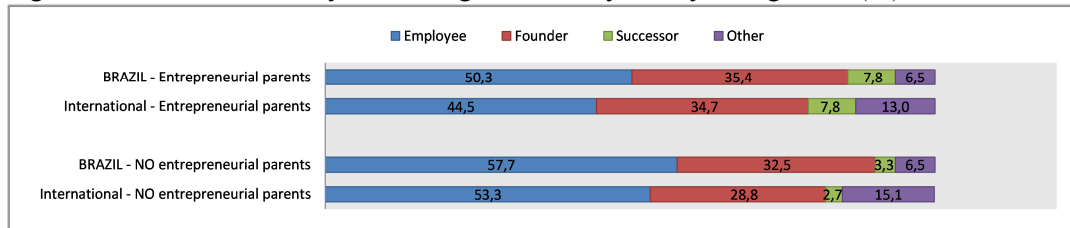


Figure 33 shows a comparison of the two respondent groups, by career options for five years after graduation. This time spectrum has the greatest proportion of potential founders, more than immediately after graduation. The group whose parents are entrepreneurs presents higher percentages of potential founders and potential successors.

⁷ It is important to remember that in developing this linear regression and the two preceding figures, the strength of intention to be an entrepreneur is based on the responses obtained using the scale described in Chart 1 (beginning of section 6). In the questionnaire, the scale registered data in relation to the moment of response, with no connection to the periods immediately after graduation and five years after graduation.

Figure 33 – Career for five years after graduation by family background (%)



With lower percentages for the career option other (which gathers data for those that did not indicate a response in another category and those that do not yet know what they want to do), the Brazilian sample has a higher percentage of respondents that clearly identify themselves as employee, founder, or successor. The portion of them that want to be at the head of their own business, as successor or founder, is more expressive for Brazil, primarily in the case of respondents whose parents are not entrepreneurs. Looking only at the national sample, those whose parents are entrepreneurs are 7.4 pp ahead of those whose parents are not. In the international sample, this difference is 11 pp, which suggests that the potential influence of having entrepreneurial parents is stronger on students' behavior in the international sphere.

7- Nascent entrepreneurs

When it comes to the potential for creating new enterprises and potential new jobs in society, the group identified here as nascent entrepreneurs is particularly important. GUESSS Brazil identified this profile with affirmative responses to the question “Are you currently trying to start your own business / to become self-employed?” They compose a proportion of 15.4% of respondents (1,938 students), compared to 15.1% in the international sample (16, 429 students).

7.1- Basic characteristics

Analysis of the presence of nascent entrepreneurs in each field of study for the respondents establishes the percentages shown in Figure 34. The greatest percentage for Brazil is found in the area BECL (16.7%), followed by SSC (14%) and NSM (13.5%). The proportion for BECL is 1.3 pp lower than that seen in the same area for the international sample, while there is equality for NSM and superiority of 3.9 pp for SSC.

Figure 34 – Proportion of nascent entrepreneurs by field of study (%)

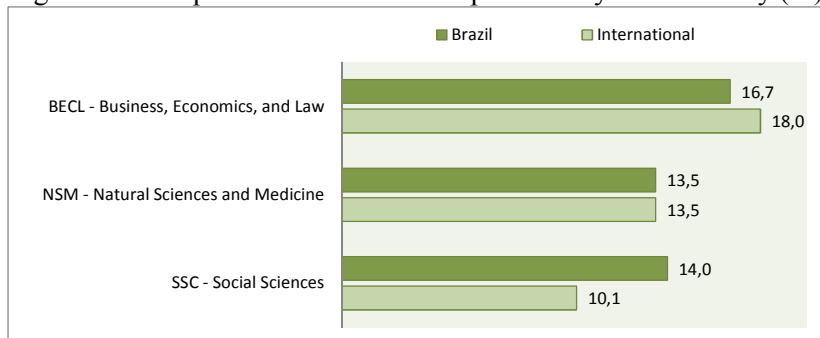
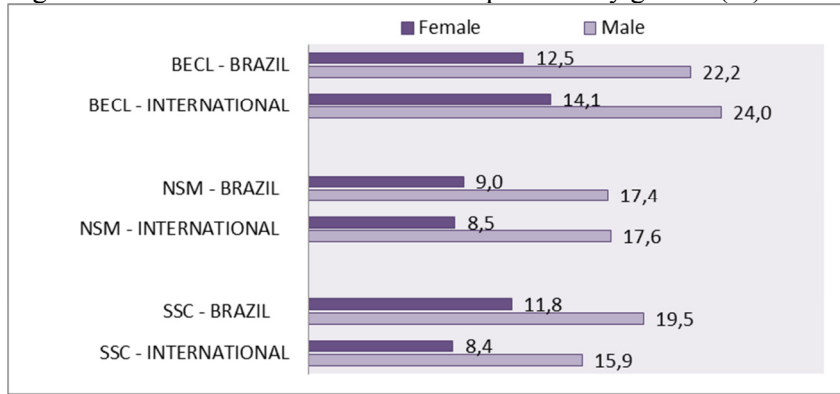


Figure 35 redistributes the results shown in Figure 34 by gender and confirms the gender gap, with systematically higher percentages for men than for women in both the national and international samples.

Figure 35 – Distribution of nascent entrepreneurs by gender (%)



For both men and women, the figure describes the Brazilian percentages for SSC clearly ahead of the international percentages, but inferior for BECL, and similar for NSM for both genders.

7.2- Progress and plans for new enterprises

The respondents stating they are trying to start their own business answered about completing each of the steps in Figure 36 concerning their preparation for accomplishing this desire. The figure presents the percentage for positive responses registered in the questionnaire.

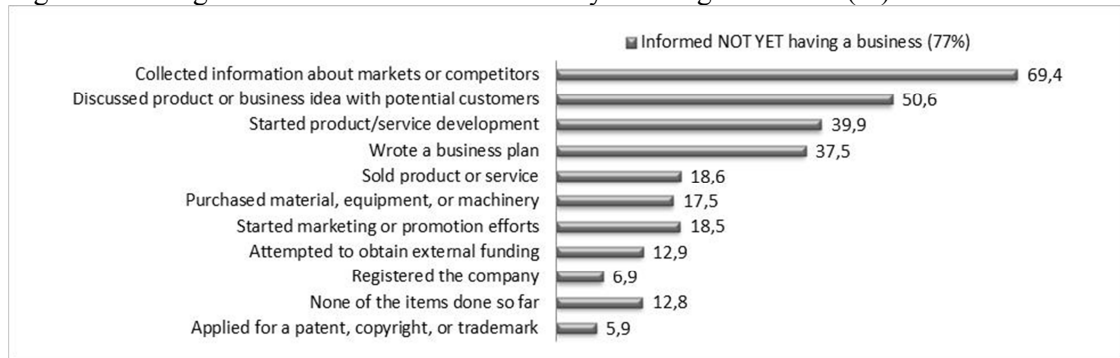
Figure 36 – Gestation activities already conducted by nascent entrepreneurs (%)



The decreasing order of the Brazilian percentages in the figure demonstrates that collecting information on markets and competitors and discussing the product or business with potential clients receive positive responses from more than half of the respondents. In the international sample, these two items also show the highest percentages. In contraposition, application for a patent registration, copyright, or trademark had the lowest percentages for the two samples. The Brazilian proportions are only lower than the international ones for the items related to attempting to obtain external funding (the high interest rates in Brazil, the need for more knowledge on how to proceed to do that, and the small offer of financing for nascent enterprises in Brazil may explain this), registering the company (the high cost of registration and Brazilian bureaucracy may be to blame), and the “none of the items done so far” item. However, the low percentage for this last item indicates the reverse – i.e. superiority in having taken steps in preparing to be an entrepreneur.

We also asked all respondents if they already had their own business. Of those that indicate they are trying to start a business, 23% responded positively and 77% negatively. Figure 37 summarizes the advances informed by this second subset of 77%.

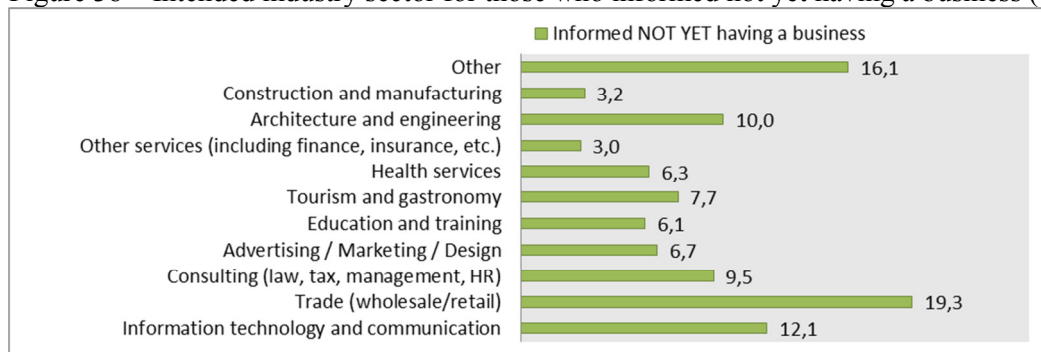
Figure 37 – Progress for those who informed not yet having a business (%)



A comparison of Figures 36 and 37 shows that the Brazilian percentages are similar primarily for the two greatest percentages and for “wrote a business plan.” For the rest of the items in these figures, which use the same order of items, the differences follow more clearly the intuitive idea that those who do not yet have their own business tend to state less frequently that they have advanced in their preparations to be entrepreneurs.

The next figures in this subsection also focus on the reality presented by the students who state not having their own business, but wanting to have one. The 2013-2014 international report does not provide data on this more restricted group of respondents, which prevents comparisons between the national and international samples.

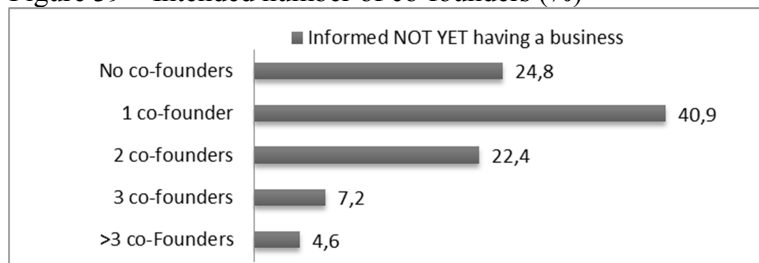
Figure 38 – Intended industry sector for those who informed not yet having a business (%)



The greatest percentage of respondents (19.3%) intend to do business in trade, followed by other (16.1%), IT and communications (12.1%), and architecture and engineering (10%).

According to Figure 39, approximately one quarter of them want to create a business without a co-founder (partner). Most (40.9%) plan to have one co-founder, and a little less than a quarter consider having two. From that point on, greater numbers of partners present lower frequency of response.

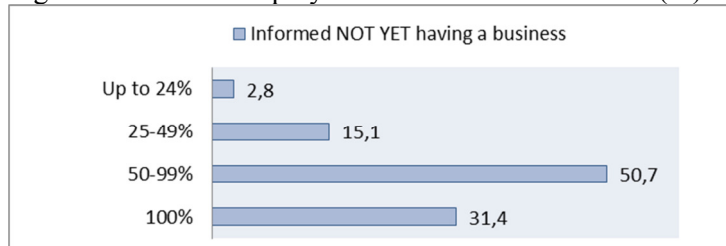
Figure 39 – Intended number of co-founders (%)



We were also interested in knowing the equity share that respondents want to have in their future business. Nearly one fifth of them (20.2%) want to own 50% of the business. Considering Figure 40, this means that 30.5% of them look at having more than 50% and less than 100% of the business. Other data in the figure reveal that the majority (68.6%) wants to have some type of partnership while a little less than a third (31.4%) avoid this idea, preferring to be sole owners.

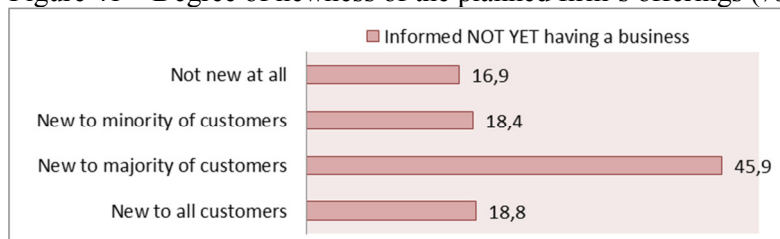
Excluding those that want to have 100% of the business, the average desired equity share is 54.7%, with an 18.9% standard deviation.

Figure 40 – Desired equity share in the future business (%)



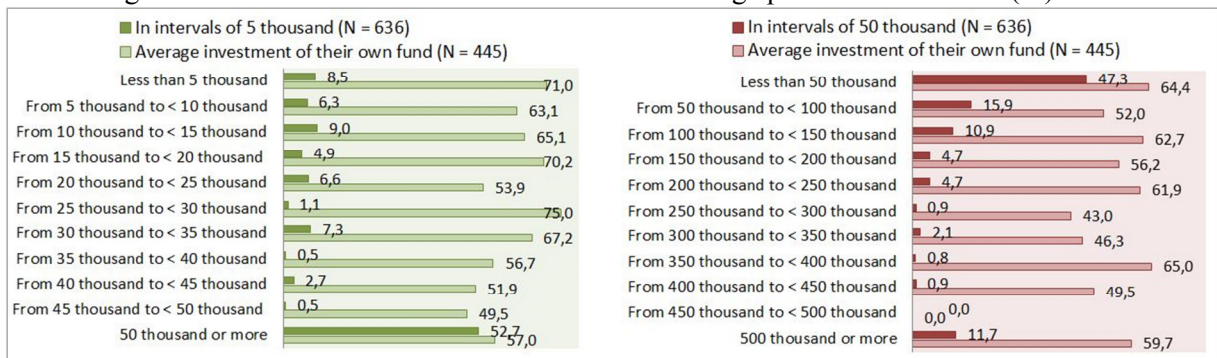
When asked about the degree of novelty perceived in the good or service to offer in the market, student responses present the distribution shown in Figure 41. Almost half of them (45.9%) are confident that they are focusing on something new for most of their clients.

Figure 41 – Degree of newness of the planned firm’s offerings (%)



Regarding the investment needed to start the new business, 824 students (55.4%) stated not having any idea of the amount. On the other hand, 636 students (43.6%) estimate such an investment as shown by the dark green and dark red bars in Figure 42. Of these, a subset of 445 students (70%) stated the percentage of investment using their own resources, represented by the light green and light red bars in Figure 42.

Figure 42 – Investment to start the business and average personal investment (%)



The responses obtained indicate that 47.3% of respondents estimate a necessary investment of less than BRL 50 thousand (USD 16.7 thousand⁸). This places the predicted investment to create each of the approximately 400 businesses as something close to the price of a new non-luxury car in Brazil. Taking this as indicative of the average expected use of one's own capital at 64.4% below BRL 50 thousand (see the top of the right side of Figure 42), the need for third-party capital would drop to less than the cost of a Brazilian popular car. This suggests that low financing amounts could generate a significant socioeconomic impact in the country, considering only the number of business to be created. Nevertheless, leaving aside the possible financial support from friends and family, one might

⁸ At the time of preparing this English version of the GUESSS Brazil report, the exchange rate was a little superior to 3 Brazilian Reals for each American Dollar, but we used the rate of BRL 3 = USD 1 exactly as a measure of simplification.

ask if the existing financing for micro and small enterprises in Brazil, so often criticized, is adequate for the country to take full advantage of this development potential.

Below BRL 50 thousand (USD 16.7 thousand), the largest percentage of responses (9%) indicates an expectation of investment from BRL 10 thousand (USD 3.3 thousand) to less than BRL 15 thousand (USD 5.0 thousand). In this range, those stating the percentage of their own capital indicate 65.1% as the average foreseen use of their own resources. Still below BRL 50 thousand, the greatest average of foreseen use of personal capital is 75%, but for a range of values estimated by few (1.1%) as being from BRL 25 thousand (USD 8.3 thousand) to less than BRL 30 thousand (USD 10.0 thousand).

Most respondents (52.7%) consider the necessary amount of investment to be BRL 50 thousand (USD 16.7 thousand) or more. In this range, the forecasts are most frequently from BRL 50 thousand to less than BRL 100 thousand (USD 33.3 thousand), with the average use of personal resources being 52%. The second most frequent range is BRL 500 thousand (USD 166.7 thousand) or more, with the average use of personal resources being 59.7%. In comparison to the lower investment values, those amounts of investment starting at BRL 50 thousand may more easily be related to the creation of new businesses in technology and/or associated with research and development. These types of business have a potential socioeconomic impact that goes beyond only generating self-employment and new jobs and distributing modest salaries. Given their greater potential of generating development in comparison to businesses with lower investment – and given the complexity of the business, which tends to be greater and frequently associated with greater risks – it is not just the financing system for these businesses that requires redoubled attention but also the preparation and planning by nascent entrepreneurs who need those amounts. After all, one should also consider that failures of businesses using such great amounts tend to have an even more undesired impact on the economy.

Financial questions appear important for the creation of a new business. However, when looking at reasons for creation, they do not appear as the most important factor. According to Figure 43, the response average (4.7) places the motivation “...make money and become rich” in fourth place. GUESSS Brazil registered the levels of motivation for creation with responses from 1 (strongly disagree) to 7 (strongly agree) to the items A to F in Figure 43, which complete the sentence “I will create my firm in order to...”

Figure 43 – Motivations for creating one’s own business



Figure 43 shows that “...advance my career in the business world” (5.8) is the most important motivation, followed by those identified as F (4.9) and D (4.9). The items with the lowest averages are C (4.6) and E (4.5). With these responses, one can see that the factors related to career advancement and social contributions surpass financial interest as reasons for having one’s own business.

8- Active entrepreneurs

The respondents that effectively show more advances toward carrying out their entrepreneurial intentions are those that state having their own business. They are considered as active entrepreneurs in the sample. Among Brazilian respondents, they are 5.7% (713 students), identified by an affirmative

response to the question “Are you already running your own business / are you already self-employed?” Their equivalents in the international sample add up to 5.5% (6,016 students).

The preceding section showed that a portion of active entrepreneurs see themselves as people trying to have their own business, despite having already created one. As such, 451 respondents, 63.3% of active entrepreneurs, appear to consider their business as not completely established.

The national distribution for a business’s founding year, according to Figure 44, reveals a greater concentration in the two extremes: 2012-2013 and prior to 2005. The national percentage for the last range stands out for being 7 pp higher than the international equivalent. This coincides with the higher average age of the respondents for the entire Brazilian sample; although, the international sample has a higher percentage of graduate students (primarily master’s) than Brazil – see section 4.2.1.

Figure 44 – Years for the foundation of the business (%)

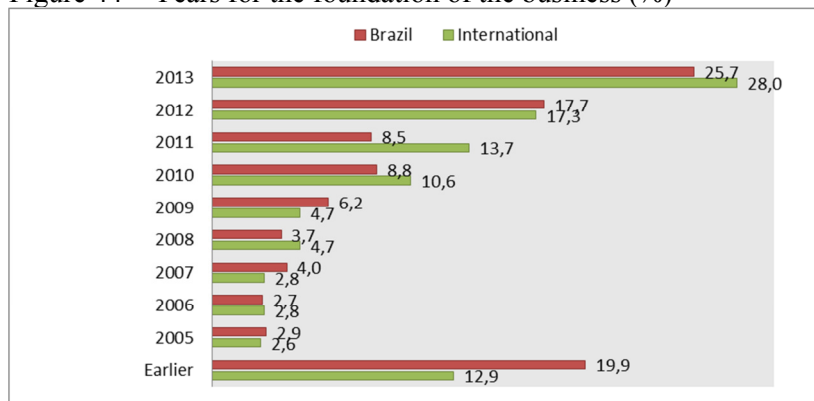
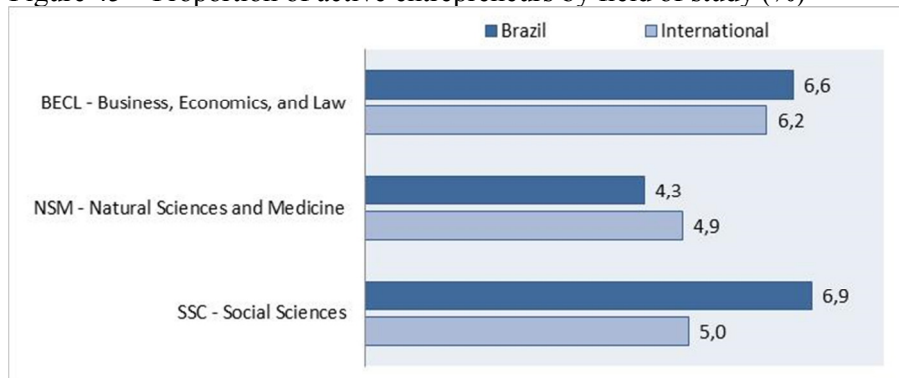


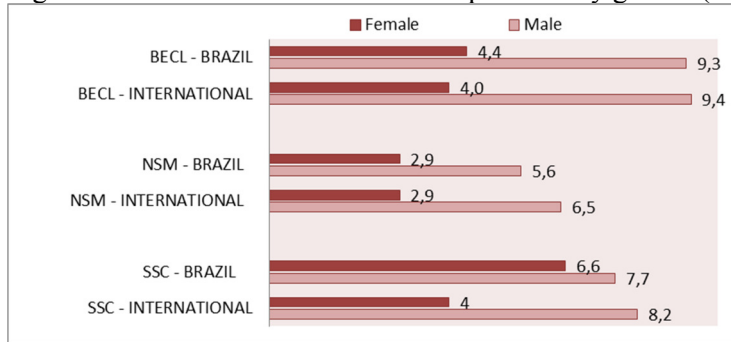
Figure 45 illustrates the percentage for active entrepreneurs in the three fields of study already considered in this report. One can see that, in the national sample, it is most pronounced for SSC, followed by BECL, and last NSM. Compared to the international sample, the national results are superior except for NSM.

Figure 45 – Proportion of active entrepreneurs by field of study (%)



We also examined the data from Figure 45 according to gender. The distribution shown in Figure 46 systematically sustains, yet again, the gender gap – more greatly pronounced in the national sample for BECL and less pronounced for SSC. It is lower in the Brazilian sample for the three fields of study. In the national comparison only for women, this last field of study is the one presenting the greatest proportion of women who are active entrepreneurs, a proportion almost equal to that for men.

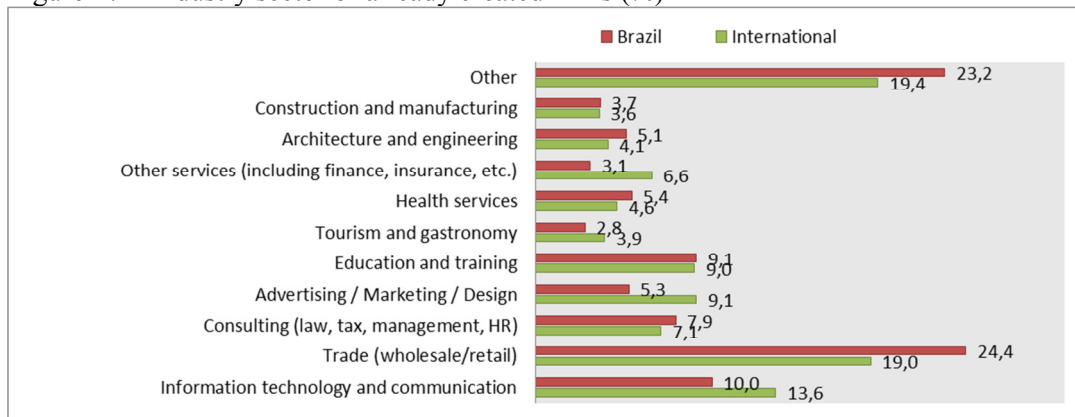
Figure 46 – Distribution of active entrepreneurs by gender (%)



On average, the active entrepreneurs in the Brazilian sample work 35.2 hours per week in their business. This indicates that their business activities take up a considerable part of their week, different from what happens with the international sample, in which business is a secondary activity that takes up from one to two days per week – according to the average presented in the international report.

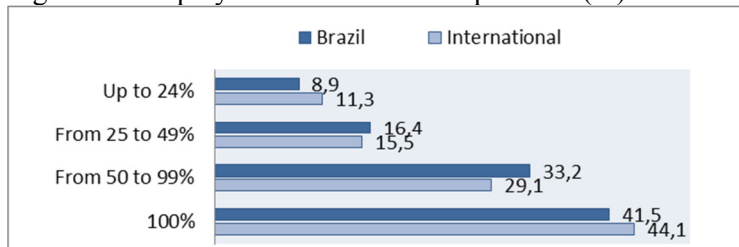
Figure 47 shows, primarily for Brazil, that the main activity sectors for existing new enterprises are Trade and Other. In third place is the IT and Communication sector, with the Brazilian percentage more modest than the international one.

Figure 47 – Industry sector of already created firms (%)



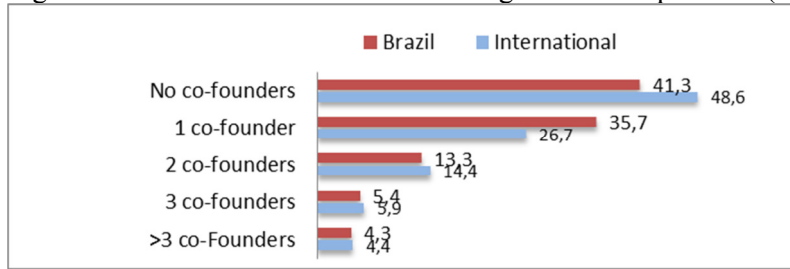
The average percentage of active entrepreneurs' equity share is 69.1% for Brazil and 68.7% internationally. In the Brazilian sample, 17.6% own half of the business. This percentage represents more than half of the 33.2% illustrated in Figure 48 as owners of 50% to 99% of the business. The figure also indicates that 41.5% are sole owners.

Figure 48 – Equity share of active entrepreneurs (%)



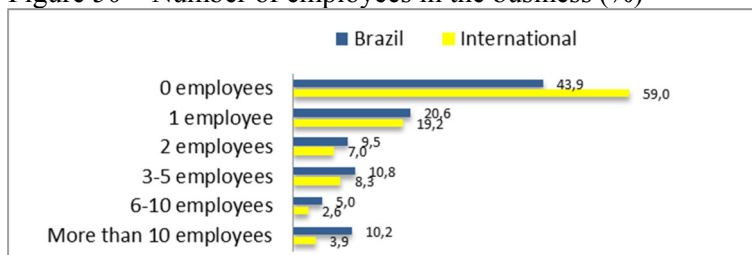
When asked about the number of co-founders, the respondents presented information convergent with that in Figure 48, affirming that most (77%) have one or none. In comparison to the Brazilian percentages, the international ones are higher for no co-founder, lower for 1 co-founder, and similar for the other items in the figure.

Figure 49 – Number of co-founders among active entrepreneurs (%)



The number of employees can be used as an indicator of the size of a business. As such, Figure 50 shows that 43.9% of businesses reported in the Brazilian sample (59% in the international sample) are very small for not having employees. 20.6% have only one employee. The proportion of businesses with one or more employees is greater in the national sample, standing out in the range of 10 or more, with a superiority of 6.3 pp.

Figure 50 – Number of employees in the business (%)



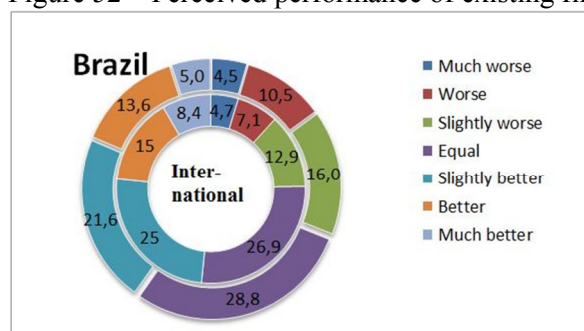
When asked about intentions for growing the business over five years in terms of number of employees, the active entrepreneurs in the national sample informed more frequently an interest in increasing to more than 10 employees (24.7%) and to three to five employees (21.3%). Figure 51 also shows a considerable proportion (19.3%) of respondents that do not intend to increase the number of employees.

Figure 51 – Growth intentions of active founders in five years (%)



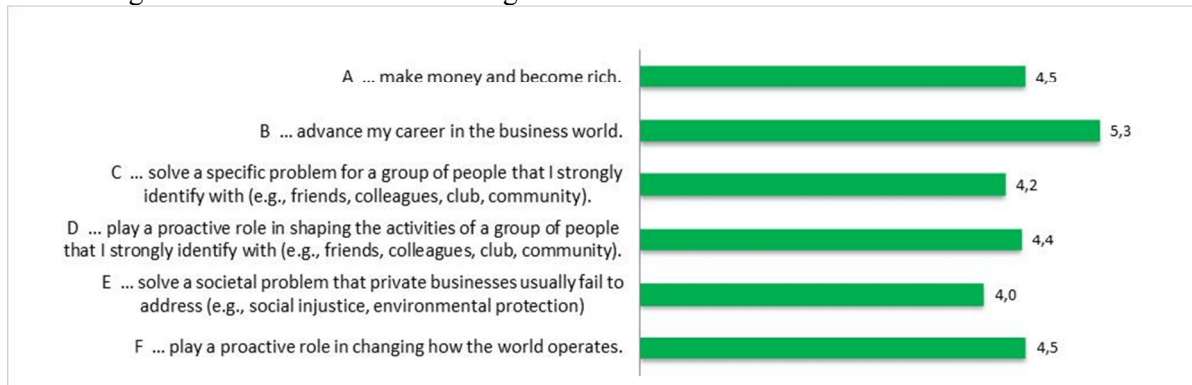
The active entrepreneurs compared their businesses with competitors, responding from 1 (much worse) to 7 (much better) on a scale for five items: sales growth, market share growth, profit growth, job creation, and innovativeness. Approximately half of them, 50.4% in the national sample and 51.9% in the international sample, consider their enterprise's performance to be better than that of competitors. Figure 52 details the response percentages for each level of evaluation, denoting, among other things, that the international percentages are higher for "better" and "much better."

Figure 52 – Perceived performance of existing firms in comparison to competitors (%)



Similarly to what we observed for nascent entrepreneurs, “...make money and become rich” does not appear for active entrepreneurs as the primary motivation for having a business. The response averages in Figure 53 indicate that career advancement is the most important motivation.

Figure 53 – Motivations for having one’s own business



Another important comparison with nascent entrepreneurs refers to activities in the process of business creation. They responded on their level of agreement from 1 (strongly disagree) to 7 (strongly agree) on the items in Figure 54, concerning what they are doing to create their own business. The active entrepreneurs also answered the same questions but concerning what they had already done in creating their own business. With the exception of item H, the average responses of nascent entrepreneurs are superior in all items, which could suggest that those interested in having their own business are more attentive and driven to complete important requirements for quality entrepreneurship. Another possibility is that the active entrepreneurs in the past had a higher level of agreement with the items in the figure but have adjusted their opinion after facing the reality experienced in practicing entrepreneurship. For example, they might have previously believed that they were researching and selecting target markets and analyzing the competition (item B in the figure); however, the practice may have shown them that they had not completed these activities sufficiently well.

For both types of entrepreneur, the highest average responses occur for items I and J in the figure, which suggests that they work particularly on being flexible to take advantage of opportunity and on being cautious in working within the limits of their resources.

Figure 54 – Process for creating the business



9- General summary

The following items summarize the main data and results of this report:

- ✓ The Brazilian sample has 12,561 student respondents studying in HEIs from various states and located across all regions of the country (see Table 2). 78.9% of respondents are up to 24 years

old. For Brazil, the average age is 24 and the median is 22, while these data for the international sample are respectively 23.1 and 22 years old.

- ✓ The greatest proportion of respondents from Brazilian HEIs comprises undergraduate students (88.8%), a proportion superior to the international sample (76.1%). This sample has 19.9% at the master's level, while the respective percentage for Brazil is 5.1%.
- ✓ Women comprise 55% of the Brazilian sample and 58.4% of the international one.
- ✓ In the national sample, 66.6% of students attend public institutions.
- ✓ In the national sample, 23.1% of respondents study Business, 18.5% study Engineering or Architecture, and 17.6% study in some other field (non-identified field of study). These are the fields of study with the highest number of respondents in the Brazilian sample.
- ✓ Most respondents from Brazilian HEIs work (53.3% at 33.7 hours per week, on average), which is the case for the minority in the international sample (36.6% at 25.7 hours per week, on average).
- ✓ Even working more hours per week, Brazilian respondents evaluate themselves with an average 4.91 (on a scale from 1 to 7), seeing themselves as slightly better in their academic performance than their colleagues. The international average is 4.78.
- ✓ Regarding career intention, 7.9% of respondents in Brazil want to found an enterprise immediately after graduation. Internationally, the proportion is 6.6%. The percentages rise respectively to 33.5% and 30.7% for the period five years after graduation.
- ✓ The career intention percentages for being an employee decline for this change in time spectrum. In the first period, they total 51.3% for employee – in a small enterprise (8%), in a medium enterprise (15.8%), and in a large enterprise (27.5%). For the international sample, this total is 30.8%. For five years after graduation, this percentage decreases to 16.9% for the employee option – in a small enterprise (0.9%), in a medium enterprise (1.4%), and in a large enterprise (14.6%) – while 30.8% of the international students preferred being employees.
- ✓ Realizing one's dream, having an exciting job, having decision-making freedom, and creating something are the most important reasons for wanting to be business founders or successors, more than earning money and becoming rich.
- ✓ The gender gap for entrepreneurship is evident in both samples.
- ✓ There still appears to be much room for improvement in entrepreneurial education (EE) in HEIs for the Brazilian sample, given that 57.9% of respondents state not having taking any course in EE, 28.8% having taken at least one required course, and 12.1% having taken at least one optional course.
- ✓ The students' evaluation indicating a positive climate for entrepreneurship in HEIs is more frequent in the Brazilian sample (42.4%) than in the international one (23.9%). Similarly, the evaluation of entrepreneurial learning in HEIs is higher for Brazil than internationally – on a scale from 1 to 7, the Brazilian average is 4.6, and the international is 4.0.
- ✓ The data for both the national and international samples suggest (and reinforce the intuitive idea) that strength of entrepreneurial intention for the respondents tends to improve in line with the positive evaluation of the climate for entrepreneurship and the entrepreneurial learning at the HEIs. One can say the same concerning the inverse relation for entrepreneurial intention and risk perception, also indicated by the data. The linear regressions shown in Figures 28, 29, and 31 illustrate such relationships.
- ✓ In the Brazilian sample, 15.4% of respondents identify themselves as nascent entrepreneurs by responding positively to the question “Are you currently trying to start your own business / to become self-employed?” The percentage is 15.1% for the international sample. Nationally (16.7%) and internationally (18%), nascent entrepreneurs are more present in the field of study comprising Business, Economics, and Law. For the two samples, these are primarily men.
- ✓ Concerning preparation for being an entrepreneur, the nascent entrepreneurs in the Brazilian sample stated more frequently having collected information about markets or competitors (69.2%), discussed the product or business idea with potential customers (51.8%), and begun to develop the product or service (43.6%). In the other eight items compared, Brazilian inferiority concerns only having attempted to obtain funding from others and registering the company.
- ✓ The nascent entrepreneurs that stated not having started a business appear most frequently in the areas of trade (19.3%), other (16.1%), IT and communications (12.1%), and architecture and engineering (10%). Approximately 25% of them plan on creating the business without a

co-founder (partner). The greatest proportion (40.9%) plan on having one partner in the foundation, and a little less than one quarter consider having two. Also, the greatest proportion (45.9%) believe they will be offering a good or service that is new for the majority of clients. 47.3% plan on founding the enterprise with a small investment: less than BRL 50 thousand (USD 16.7 thousand).

- ✓ The respondents stating already owning their own business (active entrepreneurs) compose 5.7% of the national sample and 5.5% of the international one. 25.7% of their businesses were created in 2013, 17.7% were founded in 2012, and 19.9% were established before 2005. The others began from 2005 to 2011. In all fields of study, men are in the majority for both samples.
- ✓ In Brazil, active entrepreneurs work an average of 35.2 hours in their business; for the international sample, they work an average of only one to two days. The most frequent activity sectors are trade (24.4%), other (23.2%), and IT and communications (10%).
- ✓ Among active entrepreneurs, 41.3% are sole owners of the business, 35.7% have one co-founder, 13.3% have two co-founders, 5.4% have three co-founders, and 4.3% have more than three co-founders. Most have a small enterprise, as approximately 75% have zero or one employee, and 20% have two to five employees.
- ✓ Regarding growth intention in five years, nearly 20% of active entrepreneurs do not plan on increasing the number of employees, 18% want to add one or two more employees, 21.3% want to add three to five employees, 16.6% consider adding six to ten employees, and, most frequently, 24.7% of them envision adding more than 10 employees.
- ✓ Approximately half of the active entrepreneurs, 50.4% nationally and 51.9% internationally, consider the performance of their own business to be equal or superior to that of the competitors.

10- Recommendations

- ✓ **Increase the number and quality of offerings in entrepreneurial education (EE) at HEIs.** Similar to the 2011 GUESSS Brazil report and the most recent international one, this report highlights promising routes for improving EE and the fundamental role of HEIs in developing students' entrepreneurial intention and their preparation to be entrepreneurs. Such preparation should include better risk evaluation, improved competencies in recognizing and exploiting opportunities, greater proactivity, and strengthened creativity and capacity for innovation. As such, it would be a preparation recommendable not only for those interested in entrepreneurship but for all students.
- ✓ **Ensure, through EE improvement, that students are being served with the pedagogical strategies needed to develop fully their evaluative abilities, their self-awareness regarding entrepreneurship, and their precision of thinking concerning how desirable and appropriate the idea of being an entrepreneur is for them – as well as general entrepreneurial skills.** This is potentially useful for all students, not just those with some interest in entrepreneurship.
The superiorities over the international sample that are identified in the Brazilian sample (for example, concerning strength of entrepreneurial intention, evaluation of the entrepreneurial climate at HEIs, evaluation of entrepreneurial learning, and the lower risk perception level) suggest the existence of particularities in the national sample. In the 2011 report, the national results also showed superiority in various aspects. Additionally, one of our more detailed studies concerning EE (Lima et al., 2104a) suggests that in Brazil more EE is associated with lower levels of entrepreneurial intention and self-efficacy (confidence that one is prepared to be an entrepreneur). These elements reinforce the need to consider and act on the quality of EE in Brazil. They also raise the possibility that students are optimistic in their evaluation, overly self-confident, and moderate in regard to risk assessment.
- ✓ **Part of the investment made at HEIs should be specifically targeted at EE, given the potential contributions of the previous recommendations and considering that more schooling and preparation for entrepreneurship tend to generate more innovation in**

society. This preparation can also be very useful considering possible crises or economic slowdowns because entrepreneurship can at least generate self-employment if not more contributions to the economy.

- ✓ **As previously highlighted** (Lima et al., 2014a, 2014b), **prepare more professors and increase the number of professors trained and interested (if possible, also with practical and pertinent experience) in working in EE**, making them progress beyond simply providing students with the basic instrumentations to work. The country still appears to lack training for EE professors.
- ✓ **Take advantage of the different courses in the programs by adopting a transversal perspective of EE – i.e. adding EE contents to the various courses and disciplines provided at HEIs and addressing in them aspects such as innovation, opportunity identification and exploitation, and risk assessment, among others.** For example, Finance could easily include content such as risk assessment, and Pharmacology and Engineering could easily include some focus on generating innovations.
- ✓ **In light of the international report, students in general should seriously consider the possibility of pursuing a career as an entrepreneur.** A detailed and well-supported reflection on the question seems fruitful for all to allow them to verify if this type of career suits their interests and abilities. For lack of this type of reflection, which could be motivated and assisted by the HEIs and professors, how many potential entrepreneurs in their different fields is the country losing? In addition, students in general should take greater advantage of the growing offerings of entrepreneurial courses and activities both at and outside HEIs. This will help them in that reflection, better preparing them to evaluate entrepreneurship as a career choice.
- ✓ **Researchers and future studies should investigate the Brazilian particularities related to EE, students, and entrepreneurship.** Such initiatives are potentially useful for understanding the superiority of the national results over the international ones, as well as promoting the development and use of a tailored approach to EE for the country. Generally, in a specific context, this is necessary to promote improvements in the initiatives concerning EE.
- ✓ **In the same vein, future research should complement GUESSS Brazil by considering professors' perceptions,** seeking to advance in the same line as the few national studies that have taken this direction.
- ✓ **Other promising themes for future research:**
 - Considering each aspect that presents a clear difference between the Brazilian and international samples (lower risk perception for entrepreneurship and greater strength of entrepreneurial intention, for example), what exactly are Brazilian HEIs doing to make their students more well-informed and realistic in considering entrepreneurship as a career option?
 - How can EE obtain its deserved recognition in the various fields of study at HEIs, and how can EE be offered as closely as possible with international high quality standards?
 - What pedagogical techniques and strategies are best suited for the Brazilian context? How can HEIs in the country effectively adopt them?

With the information and inducements presented in this report of the second edition of GUESSS Brazil, we hope once more to add our efforts to all of those that work to generate human enrichment and socioeconomic development in our country.

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APPENDIX 1

MATERIAL FOR PROFESSORS

EXERCISES ON CHOOSING A CAREER FOR GROUPS OF STUDENTS THAT HAVE ALREADY RESPONDED TO THE GUESSS ONLINE QUESTIONNAIRE

April 2011 – guesssbrasil.org

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The content in this material refers to some suggestions for simple, interactive, and dynamic exercises that complement the questionnaire-response experience for GUESSS.

These suggestions are purposely simple so that they can be used, adapted, and/or complemented at all possible levels and fields of study.

Have a great class!

Suggested procedures for professors

A- A short presentation by the professor followed by a debate on the importance of networking and its development as a basis for obtaining useful information to help in choosing a career, to better prepare oneself for the chosen career, and to conduct various career-related activities – whether for creating a business or in any other career option, including the importance of networking in obtaining clients.

Objective: enunciate and clarify the importance of networking in choosing a career, preparing to work in it, and pursuing success at work.

Professor's role: first, to present about the theme, then to coordinate a discussion with participants.

There are various possible forms for conducting this pedagogical activity, variations in the professor's presentation and use of audio-visual materials (if any are used), as well as in the manner of conducting the debate, which may be inspired by some procedures recommended in exercise B on the next page.

However, some recommendations deserve attention:

- The exercises should be conducted preferably before students respond to the GUESSS online questionnaire, although it may be useful afterwards.
- The professor should preferably emphasize that frequently the English word “networking” is used in Brazil (and other countries) to mean developing and using a network of relationships with other people.
- It is also recommendable that the professor highlight the importance of coaching – i.e. monitoring or counseling offered by a more experienced person – as an activity propitious for career success.

MATERIAL FOR PROFESSORS

EXERCISES ON CHOOSING A CAREER FOR GROUPS OF STUDENTS THAT HAVE ALREADY RESPONDED TO THE GUESSS ONLINE QUESTIONNAIRE

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B- Classroom discussion on the advantages and disadvantages of being one's own boss, avoiding being an employee, or complementing a job with entrepreneurial activities.

Objective, for all students: build awareness of and make more explicit the knowledge and justifications that can lead to the adoption, abstention from, or even dislike of career choices in entrepreneurship (being one's own boss, having a business...).

Professor's role: moderate the discussion and add knowledge nuggets and examples of elements arising during the discussion.

1- Possible conduction for the beginning of the exercise:

- Ask students to volunteer opinions and make a list of the advantages and disadvantages that they cite.
- In the classroom, differentiate the students that want to be their own bosses, those that do not, and those that are undecided. Ask these different groups to expound, whenever possible, on which items on the list most weigh on their reasons for a preference or indecision. Note all new reasons as they cite them.

2- Possible conduction for the development of the exercise:

- Ask the students quickly to provide examples that they or people they know well have experienced of successful or unsuccessful attempts to be one's own boss. Quickly explore the advantages and disadvantages of the examples in light of the list of advantages and disadvantages.

3- Possible conduction for the conclusion of the exercise:

(Some of the items below are helpful as the basis for an activity or reflection for students to complete after the class.)

- Ask questions such as:
 - * From your experience in completing the questionnaire, what have you learned or more clearly understood about possible career choices?
 - * What would you identify as necessary for improving your preparation to follow your chosen career path – whether it be to have one's own business, to be an entrepreneur, or not?
 - * After answering the GUESSS questionnaire and having this discussion, do you think it is worth being your own boss, having your own business?
 - * Who here has changed their views on the possibility of being their own boss? Why?
 - * Would you invite someone to be a partner if you would like to be your own boss? Who would you choose, and why?
 - * Would you invite a colleague at your educational institution to be a partner? Who would you choose, and why?

APPENDIX 2

COMPLEMENTARY MATERIAL FOR PROFESSORS **TO BE APPLIED WITH ALL STUDENTS USING THE INTERNET** **EXERCISES FOR STUDENTS WHO HAVE ALREADY ANSWERED OR HAVE** **CHOSEN NOT TO ANSWER THE GUESSS ONLINE QUESTIONNAIRE**

April 2011 – guesssbrasil.org

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This complementary pedagogical material helps professors who take groups of students to a computer lab or have them use their own computers with Internet to answer the GUESSS questionnaire.

A portion of these students may have already answered the questionnaire at a previous time. As each student can only complete the questionnaire once, that portion of students will need an activity different from that given to the others who will complete it. The same applies to students who do not want to answer the questionnaire, which is their right.

Hence, the exercise suggestions below are for students to keep them busy with an activity that is productive and convergent with GUESSS objectives while the others are answering the online questionnaire.

Have a great class!

Exercise proposed to be conducted in front of computers, either in the computer lab or in another location in which a group of students has already completed the GUESSS questionnaire, while other students are still completing it.

Objective, for all students: build awareness of and make more explicit the different career options in their fields of study, as well as the routes they should follow and/or the preparation they should undertake to adopt one or more of the options. It is important to remember that having a business or being an entrepreneur in their respective fields of study is one of these options.

Professor's role: first to encourage and assist; second, to coordinate a discussion with all students or conduct another activity with them, as suggested in the main list of exercises entitled "Material for Professors" (Appendix 1).

The professor asks students that have completed the questionnaire to conduct Internet searches (using Google, Bing, Yahoo, etc.) using search expressions such as the following or even other key words related to career in their respective higher education fields of study:

- "I want to be a dentist", "I want to have a dentist's practice", "a business in Dentistry", "be a private dentist", etc. (for students in Dentistry).

- "I want to be a doctor", "I want to have a doctor's practice", "a business in Medicine", "be a private doctor", etc. (for students in Medicine).

- "I want to be an administrator", "I want to be a consultant", "I want to be an entrepreneur", etc. (for students in Business Administration and other fields of study).

- "*I want to be...*", "*I want to have...*", "*a business in...*", "*be a private...*", etc. (adapt to each student's field of study).

COMPLEMENTARY MATERIAL FOR PROFESSORS
TO BE APPLIED WITH ALL STUDENTS USING THE INTERNET
EXERCISES FOR STUDENTS WHO HAVE ALREADY ANSWERED OR HAVE
CHOSEN NOT TO ANSWER THE GUESSS ONLINE QUESTIONNAIRE

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First stage: We suggest that Internet searches occur while the other students are completing the GUESSS questionnaire and that students take notes and record website addresses for important information they find.

Second and final phase: All students, those who completed the questionnaire at another time and those who have just completed it, are invited to do the activities proposed in the main list of exercises entitled “Material for Professors.”

Those students that conducted keyword searches can complement these activities by highlighting and sharing (in a discussion with all students) the most relevant information they found on the Internet.