Self-Efficacy and Entrepreneurial Competences

What do University Students Reveal?

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Abstract

The aim of this study was to analyze the relationship between self-efficacy and entrepreneurial competencies, in the perception of students enrolled in the second to the eighth semesters of courses in Business Administration and Accounting Sciences. The Accounting Sciences students were studying in the evenings, while the Business Administration students were taking two courses; one in the mornings and one in the evenings.

The theoretical background presents the two themes of investigation, and the data collection tools used. The statistical methods used were Anova and correlation analysis. Initially, the total values of the constructs were assessed, contrasting them by course, semester, gender, and whether or not the student had taken the discipline of Entrepreneurship.

In the Anovas of the complete sample, it was confirmed that the male students felt more competent and self-effective. The fact of whether or not the students had taken the discipline of Entrepreneurship had a different effect on self-efficacy; among the students who took Business Administration in the mornings, no differences were found, but among those who took the course in the evenings, and Accounting Sciences graduates, those who were taking or had already taken the discipline considered themselves to be more effective.

In the analysis of correlations, an association was found between the constructs, but the intensity with which it occurred differed, according to the course, and semester studied. In the Business Administration students who studied in the mornings, there were fewer correlations, while in the students who studied in the evenings, there were many significant correlations. However, the Business Administration students included in the survey were mainly in the seventh semester, while those of Accounting Sciences were in the eighth.
Keywords: Entrepreneurship. Self-efficacy. Competencies. Higher Education.

Introduction

Corporate strategy presents numerous challenges, such as frequent changes that occur in the business environment. To face these challenges, and still thrive, it is necessary for managers and business owners to have attributes that place them ahead of the competition. Their competence is fundamental, because it is necessary to know how to recognize, interpret and implement strategies that, on one hand, will ensure the continuity of the company and on the other, provide competitive advantages. Given that environmental changes affect all organizations, those that are able to change their resource base and capabilities, to adjust to a new state, are the ones that will excel (Araújo *et al.*, 2006).

Rapid organizational adaptability is interpreted as a capacity or entrepreneurial orientation, which presupposes proactivity, innovation and risk taking. If the manager or the

owner is an entrepreneur, he or she will be able to identify market opportunities and develop his or her own vision of the business, even in situations where others can see nothing or very little. They also have energy, hope and a passion for what they do.

There is no single definition of the term entrepreneurship, and various views have been proposed, since the concept was first defined by Schumpeter (1934) at the beginning of the 20th century. According to Schumpeter's concept, it corresponds to the act of taking risks and responsibilities in the design and implementation of a new business, or in the transformation of an existing business. This definition includes the idea of creative destruction, in relation to the process of change that accompanies radical innovations. In other words, for Schumpeter, entrepreneurship is an activity that alters the existing balance, with innovation being the main characteristic.

Described by Gartner (1985) as the “creation of a new organization”, it also includes the understanding that entrepreneurship can involve the development of new visions and business methods for already-established companies. Thus, it can be applied to all types of organizations, including nonprofit institutions. It is clear, therefore, that entrepreneurial actions may be associated with either companies or individuals.

In relation to entrepreneurial people, there is no single definition either. The most common approaches are those that consider the entrepreneur as an innovator, an intermediary in the market process, and a specialist in taking decisions. These approaches include characteristics and behaviors, a thematic axis studied by McClelland (1971). Based on the studies of this author, the study of entrepreneurial competencies emerged as a necessary condition for the success of entrepreneurial initiatives.

There are many factors that can lead an individual to become an entrepreneur; according to McGee *et al.* (2009), they consist of a combination of personal attributes, experiences, features and context. The two dimensions responsible for the interest in entrepreneurialism, states Bird (1988), are individual domains and contextual variables. The contextual dimensions indicate that support and environmental influences have an impact on entrepreneurial intentions. As regards the individual domains, characteristics such as the tendency to take risks, and self-efficacy, together with the competencies and skills developed, influence entrepreneurial intentions (Zhao, Seibert & Hills, 2005).

In this context, some studies have shown the importance of Bandura's Theory of Self-Efficacy (1977) for the study of entrepreneurial conduct. It is a personality trait that affects the motivation to successfully perform tasks, or the degree of tolerance to face certain adverse situations and individual perception of the risk. Also according to Bandura (1977), individuals with higher self-efficacy are more capable of pursuing and persisting in a task than those who lack this attribute. Research among university students has shown that there is positive relationship between self-efficacy and entrepreneurial intention (Noble *et al.*, 1999; Moriano *et al.*, 2006).

In the concept of Martinez and Salanova (2006), beliefs on efficacy are built based on judgments of the capacities possessed. Thus, people with the same abilities, but different beliefs based on them, may be successful or unsuccessful. Such judgments of self-confidence, according to Azzi and Polydoro (2006), may be related to specific domains, with perception of high self-efficacy in a given area and low in another. This led us to consider the importance of this personality trait, in order to benefit from the knowledge obtained.

Based on this perspective, according to Cho (1998), education for entrepreneurship should provide students with knowledge, skills and motivation, which are essential conditions for launching a successful venture. In the author's view, if entrepreneurial talent were only innate and could not be created, then any education for entrepreneurship would lose its importance.

Taking into account these views, and in view of the fact that higher education is one of the main vectors of a country's socioeconomic and cultural development, teaching of entrepreneurship at university level takes on special significance, in view of the influence of the university on society. It is hoped, in a broad context, that higher education institutions, faced with the changes brought by globalization and its repercussions on the world of business, will not only seek to enhance their graduates' employability, but will contribute to the learning of entrepreneurship.

Therefore, this research among students of courses in Business Administration and Accounting Sciences at a nonprofit university in the Brazilian state of Santa Catarina whose curriculum includes a discipline in entrepreneurialism, will seek to answer the following question: How is entrepreneurial self-efficacy linked to entrepreneurial competencies in the graduates of these courses?

The overall objective of this study is to analyze the relationship between these constructs, through the following specific goals:

1) To measure entrepreneurial self-efficacy using the scale of De Noble, Jung and Ehrlich (1999);
2) To measure entrepreneurial skills according to the model of Cooley (1990); and,
3) To determine the associations between self-efficacy and entrepreneurial competencies.

Studies of this type can make a significant contribution to teaching practices, seeking to guide actions in the field of higher education that will encourage the presence of entrepreneurs as future agents of change. Likewise, the results achieved, and their articulation with the theoretical framework, can allow actions to be planned that will contribute to the area of entrepreneurialism at other educational levels.

Theoretical background

Entrepreneurial self-efficacy

The theory of self-efficacy has been applied, by some authors, to the study of entrepreneurial intention. Among them, Boyd and Vozikis (1994); Chen, Green and Crick (1998); Noble, Jung and Ehrlich, (1999) demonstrated the existence of a positive relationship between these two constructs.

Other studies have suggested that positive self-efficacy is related to persistence, dedication and the satisfaction of the actions carried out (Salanova *et al.* 2001). The studies of Zhao *et al*. (2005) suggest that individuals who choose to become entrepreneurs have high entrepreneurial self-efficiency. Thus, the individual's belief that they will be successful in launching a venture, according to McGee *et al*. (2009) is a very important variable, because it is a strong predictor of entrepreneurial intentions.

To study entrepreneurial behavior, Markman, Blakin and Baron (2002) indicate that they consider effectiveness in a broad, general sense, while other authors, such as Chen *et al*. (1998), use scales. In 1999, Noble, Jung and Ehrlich developed the Entrepreneurial Self-Efficacy (ESE), validated for Spanish by Moriano, Palaci and Morales (2006). Comprised of twenty-three items, with a five-point scale, this instrument contains the main tasks that an entrepreneur must develop in order to succeed in their own business, the most notable ones being:

1) The development of new products and market opportunities: this refers to a series of skills related to recognizing opportunities. This dimension, for various authors, is considered essential for the success of a new business (Chen *et al*., 1998; Krueger Jr. *et al*., 2000);

2) Being innovative: focusing on the individual's capacity to stimulate creativity, initiative and the responsibility of people with whom the entrepreneur works (Kumar & Uzkurt, 2010);

3) Defining the goals of the business: this dimension is essential, because if an individual is unable to establish the primary goal, he or she probably will have no motivation to start their own business;

4) Human resources: the ability to attract and retain competent people in the creation of a new company;

5) Relationships with investors: using social networks to establish contacts, and also searching for the best way to obtain the capital needed to start one's business; and,

6) Dealing with unexpected changes: relates to knowing how to work in uncertainty.

On the other hand, studies with university students have confirmed that there are arguments about the positive impact of entrepreneurship education on self-efficacy and entrepreneurial intentions. In this regard, new alternatives have emerged in the study of entrepreneurship and its relationship with the self-efficacy. For example, the inclusion of self-regulation (Bandura, 2012) has led to a proposed model with this vision by Pihie and Bagheri (2013), which has also been tested among university students.

Entrepreneurial competencies

In the 1960s and 1970s, McClelland conducted several studies on the term competences, which in the subsequent decade, was explored by Boyatzis (1982) in the managerial context, arguing that these are true aspects linked to human nature. They are observable behaviors that largely determine the return for the organization.

Taking this same approach, Spencer and Spencer (1993) argued that competency refers to the intrinsic characteristics of the individual that influence and serve as a point of reference for the individual's performance in the work environment. Complementing the studies of Spencer and Spencer, which were begun several years earlier, the studies of Cooley (1990) emphasized that competency is manifested through actions in which there is delivery, and not just a store of knowledge, skills and attitudes.

According to Zarifian (2001), to be identified and understood, the individual's competency needs to be observed in action. How the subject articulates their resources to cope with situations at work and in their personal life results in the expression of the competency. For Le Boterf (2003) competency is assuming responsibilities when faced with complex work situations, seeking to deal with new, surprising or unique events. Fleury (2002), agreeing with Cooley, alters the structure given by Le Boterf, emphasizing that a competency is a responsible and recognized knowledge of how to act, which involves mobilizing, integrating, and transferring knowledge, resources, and skills that add economic value to the organization and social value to the individual.

Paiva Jr. *et al.* (2006) consider that competencies are necessary at group, individual, organizational and societal levels, and that the entrepreneurial competencies reflect effective actions of the manager of the entrepreneurial profile, falling into the category of individual level. Previously, Fleury and Fleury (2004) had already identified that competencies, at both organizational and individual levels, are labor-intensive, creative tasks, and can be a factor of competitive advantage in the market.

In the organizational context, individual competencies, among other benefits, must be considered as sources of innovation, knowledge transfer, mobilization of people, and learning, as well as adding economic and social and economic value to the organization. Thus, competency management is an advanced form of managing people and enterprises, in which the organizational challenge is to transform individual competencies into competitive advantage. In view of this, it can be seen that the entrepreneurial actions are associated with

competencies, as they represent the capacity for network relationships, management capacity, the sense of identifying opportunities, positioning in conjunctural scenarios, and commitment to individual interests and those of the company (Mamede & Moreira, 2005).

In studies on entrepreneurship, there has always been interest in identifying entrepreneurial competencies and thereby relating them to various aspects of entrepreneurs and the businesses they develop. Zarifian (2001) argues that competencies are needed at various levels, but that entrepreneurial competencies, in particular, reflect effective actions of the manager of the entrepreneurial profile. Studies among university students have confirmed that the values and competencies play an important role in entrepreneurial intention, with competencies being perceived as more important (Liñán, 2008).

To develop research on this topic, several classifications have been created. Among those that exist, the researchers chose, in this study, to use that of Lizote (2013), which is based on the work of Cooley (1990). That study highlights ten characteristics of entrepreneurial behaviors, gathered into three groups: realization group, planning group, and power group. Its measurement uses thirty indicators, three for each competency.

Material and methods

The data for this research were gathered from students taking courses in Business Administration and Accounting Sciences, at a Private nonprofit university Community in the Brazilian state of Santa Catarina. For this, a survey was carried out, through a self-administered questionnaire with students enrolled in the second to eighth semesters. For the Business Administration course, undergraduates studying in the mornings and evenings were included. The Accounting Sciences students were studying in the evenings, as the course is taught during this time.

The data collection tool was organized in three blocks. The first gathered the following data on the respondents: course, semester studied, semester enrolled in, whether the student had taken, or was taking the discipline of entrepreneurship, and the student's gender. The second block was composed of 23 items, according to the “Entrepreneurial Self-Efficacy” scale of Noble *et al*. (1999). As in the original proposal, validated in Spain by Moriano *et al*. (2006), we used a 5-point Likert scale, which ranges from “completely incapable” (1) to “completely capable” (5). The values attributed by respondents were analyzed summatively, i.e. with a single score measuring total entrepreneurial self-efficacy (ET), and also based on the six subscales of the tool: 1) SE1: development of products and market opportunities; 2) SE2: construction of an environment of innovation; 3) SE3: definition of the main objective of the business; 4) SE4: development of key human resources for the company; 5) SE5: establishing a relationship with possible inverters; and, 6) SE6: capacity to deal with unforeseen changes.

In the third block, according to the proposition of Cooley (1990) and used by Lizote (2013), responses to ten entrepreneurial skills were obtained, grouped into three sets. In the realization set, five were included: 1) BOI: seeking opportunities and initiatives; 2) CRC: running calculated risks; 3) EQE: demand for quality and efficiency; 4) PER: persistence; and, 5) COM: commitment. In the planning set, three competencies were considered: 1) BDI: seeking information; 2) EDM: establishing goals; and, 3) PMS: planning and systematic monitoring. Finally, in the power set, there are two groups: 1) PRC: persuasion and a network of contacts; and, 2) IAC: independence and self-confidence. These ten competencies were measured with thirty items, considering three assertions for each one. The respondents were asked to attribute a value to the items on a five-point scale. Subsequently, the three scores are totaled to obtain a single value for each competency, and the total value of the ten competencies (CEmpr) was also recorded.

A total of 568 students answered the questionnaire, forming the initial database, which was organized in a spreadsheet for preliminary analysis, according to the recommendations of Hair Jr. *et al*. (2009). We identified 18 questionnaires in which the competencies section had not been filled out, and which were therefore were discarded. In another 8, the missing data was more than 15%, and so they too were eliminated from the database, leaving 542 respondents. The total number of missing items data was 128, corresponding to 40 in the self-efficacy block, and 88 in the competencies block. The maximum quantity of items left blank by one respondent was four, which occurred with six students. As the quantity of missing data was very small in relation to the maximum allowed of 10% (Hair Jr. *et al*., 2009) and considering that the missing data were not associated with any pattern, it was decided to fill in the empty cells with the mean value of the corresponding indicator. There were no spelling errors, and 71 outliers were detected; 19 in the self-efficacy block, and 52 in the competencies block, but as they were not related to certain respondents, it was decided to keep them in the sample. In This way the final database was composed of 542 students, distributed as follows: 119 on the course in Business Administration in the mornings, 225 in the evenings, and 198 in Accounting Sciences.

As the data were obtained using five-point Likert scales, calculations of skewness and kurtosis were performed, as according to Hair Jr. *et al.* (2009), the use of these measurements enables the normality of distribution to be evaluated. Finney and DiStefano (2006) state that data with coefficients of up to 2 for skewness and up to 7 for kurtosis, in absolute value, may be considered almost normal. All the distributions, i.e. the summations of total self-efficacy and its subscales, and of the ten competencies, are within the values considered acceptable limits.

The statistical methods used were analysis of variance (Anova) and analysis of linear correlations. For the ANOVAs, information given by the students in the first block was used as a category predictor, and the dependent variables were the total self-efficacy scale and the sum of the score given for all the competencies. Correlation analyzes were performed for the students in their year, i.e. seventh and eighth semesters of the courses. The correlations between self-efficacy were evaluated, expressed by the full scale and the six subscales, and the entrepreneurial competencies were measured individually and by the full scale. A significance of 5% was considered in all cases.

Results

An initial result to be presented, in the light of the analyses performed, is shown in Table 1, which shows the values of skewness and kurtosis for the data of the summations of the full scale and the subscales of self-efficacy declared by the respondents and of the summations of the three items measuring each of the ten competencies considered, as well as their sum total. It can be observed that all the values are within the ranges proposed by Finney and DiStefano (2006) for these two descriptive measures, therefore, the distributions should be considered almost normal, analysis of variance to be carried out. In addition it should be noted that the Anova with one dependent variable is very robust to the violation of normality and homoscedasticity (Harris, 1975).

The ANOVAs performed with the complete sample, using course, semester, semester or participation in the discipline of entrepreneurship as a predictor and the full scales for self-efficacy (ET) and the sum of the competencies as dependent variables (CEmpr) showed no significant differences for any of the simultaneous comparisons. However, when using gender both for ET and for CEmpr, men had higher mean values than women.

Table 1 - Mean values, standard deviation, skewness and kurtosis of the total sample for self-efficacy and for the entrepreneurial competencies .

	Mean	Std.Dev.	Skewness	Kurtosis
SE1	17.35	3.06	0.21	-0.17
SE2	13.31	2.56	0.29	-0.12
SE3	14.52	2.44	0.16	-0.34
SE4	10.58	2.08	0.10	-0.26
SE5	13.77	2.44	0.11	0.16
SE6	9.85	2.01	0.28	-0.12
ET	79.39	11.71	0.21	0.08
BOI	9.20	2.50	0.03	0.05
CRC	10.19	2.46	-0.13	-0.32
EQE	10.41	2.31	-0.32	0.21
PER	11.93	2.17	-0.53	0.20
COM	12.55	2.21	-1.11	1.51
BDI	11.23	2.55	-0.42	-0.17
EDM	10.51	2.54	-0.29	-0.42
PMS	10.79	2.46	-0.44	-0.15
PRC	10.48	2.33	-0.37	0.19
IAC	10.85	2.32	-0.25	-0.27
CEmpr	108.13	17.13	-0.37	0.78

Legend: Self-efficacy - ET: full scale; IF: subscales. Entrepreneurial competencies - BOI: search for opportunities and initiatives, CRC: taking calculated risks, EQE: demand for quality and efficiency, PER: persistence, COM: commitment, BDI: search for information, EDM: establishing goals, PMS: planning and systematic monitoring, PRC: persuasion and a network of contacts, IAC: independence and self-confidence, and CEmpr: Sum of the ten competencies.

The analyses were then carried out by course and for the Business Administration students who studied in the mornings, and there were no differences between the mean values of the full scale for self-efficacy or the competencies, when semester, participation in the discipline or gender were used as predictor, In the case of Business Administration students who attended the course in the evenings, differences occurred in the simultaneous comparisons of ET and CEmpr when using semester as a predictor. In the paired comparisons, using the Tukey test, the students of the 3rd and 5th semesters felt more self-effective than those enrolled in the 7th semester and those of the 2nd semester, with more competence than those in the 7th semester. The other difference found in this course was for total self-efficacy when participation in the discipline of entrepreneurship was used as a predictor. The students who had not participated were more self-effective. This relationship is contrary to what happens for the course in Accounting Sciences, as the students who consider themselves more self-effective are those who have already participated or are participating in this discipline. For the students of this course, differences still occur when gender is used as a predictor. For both total self-efficacy and the entrepreneurial competencies, men had statistically higher averages.

The results obtained by means of ANOVAs performed for each course, with the total values for self-efficacy or entrepreneurial skills, indicate that the student's behaviors differ, although this was not observed when are the data for the complete sample were processed. To make the comparisons more homogeneous, students in the final year were selected, in the seventh and eighth semesters, who had already taken or were taking the discipline of entrepreneurship. For each course evaluated, the correlations were evaluated between the self-efficacy, measured by the full scale and the six subscales, and the competencies, measured by the total score and individually.

For the students of the course in Business Administration taught in the mornings, a small number of significant associations were observed. In the seventh semester, as shown in Table 2, the full scale for entrepreneurial self-efficacy (ET) did not correlate with any

competence, or with its total value (CEmpr). The latter correlated with the subscale "establishing a relationship with possible investors" (SE5). The other correlations found were between the competence planning and systematic monitoring (PMS) and the same subscale 5, and persuasion and a network of contacts (PRC) with "construction of an environment of innovation" (SE2).

Table 2 – Business Administration Course morning, seventh semester: correlations between Self-efficacy and Entrepreneurial Competencies.

	BOI	CRC	EQE	PER	COM	BDI	EDM	PMS	PRC	IAC	C.Empr.
ET	0.1975	0.1951	0.4116	-0.0980	-0.0071	-0.1479	0.2431	0.1605	0.3971	0.2555	0.2652
	p=0.418	p=0.424	p=0.080	p=0.690	p=0.977	p=0.546	p=0.316	p=0.512	p=0.092	p=0.291	p=0.273
SE1	0.2073	-0.0914	0.3848	-0.0927	-0.0876	-0.0755	0.3935	0.0501	0.4046	0.3170	0.2286
	p=0.394	p=0.710	p=0.104	p=0.706	p=0.721	p=0.759	p=0.096	p=0.839	p=0.086	p=0.186	p=0.347
SE2	-0.0120	0.1688	0.2221	-0.0345	-0.1024	-0.2212	0.0848	0.2151	0.4826	0.1602	0.1531
	p=0.961	p=0.490	p=0.361	p=0.889	p=0.677	p=0.363	p=0.730	p=0.376	p=0.036	p=0.512	p=0.531
SE3	0.3430	0.2938	0.4415	0.1542	0.2474	-0.1168	0.2031	0.0232	0.0836	0.1943	0.3002
	p=0.151	p=0.222	p=0.058	p=0.529	p=0.307	p=0.634	p=0.404	p=0.925	p=0.734	p=0.425	p=0.212
SE4	0.2405	0.0289	0.2172	-0.3672	-0.2137	-0.1473	-0.1084	0.0391	0.2798	0.0463	0.0033
	p=0.321	p=0.906	p=0.372	p=0.122	p=0.380	p=0.547	p=0.659	p=0.874	p=0.246	p=0.851	p=0.989
SE5	0.1575	0.3263	0.4118	-0.0986	0.0808	0.1472	0.4292	0.4612	0.4489	0.4264	0.4775
	p=0.520	p=0.173	p=0.080	p=0.688	p=0.742	p=0.548	p=0.067	p=0.047	p=0.054	p=0.069	p=0.039
SE6	-0.0296	0.1361	0.0999	-0.1529	-0.0185	-0.3433	-0.1327	-0.2131	-0.0609	-0.1715	-0.1447
	p=0.904	p=0.579	p=0.684	p=0.532	p=0.940	p=0.150	p=0.588	p=0.381	p=0.804	p=0.483	p=0.554

Legend: Identifiers as in Table 1.

With the students of the eighth semester, the number of associations with significance was also small, as shown in Table 3, with the relationship between the total value of the competences and the same subscale being maintained. And, in the case of the full scale for self-efficacy, no correlation was found with the competence "seeking opportunities and initiatives" (BOI).

Table 3 – Business Administration Course, morning, eighth semester: correlations between Self-efficacy and Entrepreneurial Skills.

	BOI	CRC	EQE	PER	COM	BDI	EDM	PMS	PRC	IAC	C.Empr.
ET	0.8434	0.6952	0.7196	0.1584	-0.1136	0.1761	0.5215	0.2589	0.3176	0.1973	0.6533
	p=0.017	p=0.083	p=0.068	p=0.734	p=0.808	p=0.706	p=0.230	p=0.575	p=0.488	p=0.671	p=0.112
SE1	0.7689	0.6026	0.6784	0.3546	-0.1165	0.0777	0.6705	0.4352	0.4613	0.2831	0.7173
	p=0.043	p=0.152	p=0.094	p=0.435	p=0.804	p=0.869	p=0.099	p=0.329	p=0.297	p=0.538	p=0.070
SE2	0.7494	0.5309	0.6968	-0.4262	-0.1199	0.1199	0.1195	-0.2828	-0.1857	-0.2044	0.2270
	p=0.052	p=0.220	p=0.082	p=0.340	p=0.798	p=0.798	p=0.799	p=0.539	p=0.690	p=0.660	p=0.625
SE3	0.8211	0.5788	0.9005	0.1786	0.1875	0.2120	0.6311	0.2741	0.3495	0.2905	0.7382
	p=0.024	p=0.173	p=0.006	p=0.702	p=0.687	p=0.648	p=0.129	p=0.552	p=0.442	p=0.527	p=0.058
SE4	0.8693	0.7457	0.4813	-0.2352	0.3186	0.4881	-0.0755	-0.1999	-0.1190	0.0274	0.3691
	p=0.011	p=0.054	p=0.274	p=0.612	p=0.486	p=0.266	p=0.872	p=0.667	p=0.799	p=0.953	p=0.415
SE5	0.5012	0.6235	0.4678	0.5808	-0.3558	0.1671	0.6665	0.6519	0.6766	0.4759	0.7546
	p=0.252	p=0.135	p=0.290	p=0.172	p=0.433	p=0.720	p=0.102	p=0.113	p=0.095	p=0.280	p=0.050
SE6	0.5805	0.3938	0.4480	0.2333	-0.3763	-0.1704	0.5614	0.3140	0.3153	0.0575	0.4388
	p=0.172	p=0.382	p=0.313	p=0.615	p=0.405	p=0.715	p=0.190	p=0.493	p=0.491	p=0.903	p=0.325

Legend: Identifiers as in Table 1.

This competency was also correlated with "develop of products and market opportunities" (SE1), "definition of the main objective of the business" (SE3) and "development of key human resources for company" (SE4). The competence demand quality and efficiency (EQE), in turn, was associated with SE3.

In the case of the Business Administration students studying in the evenings, there were a high number of significant associations for the seventh semester, as shown in Table 4. Thus, entrepreneurial competencies, measured by their total value (CEmpr) was correlated with the full scale for self-efficacy (ET) and all its subscales. ET, in turn, only showed no

relationship with significance for three competencies: persistence (PER), commitment (COM) and establishment of goals (EDM). These same three competencies were the ones that had the least association with the subscales for self-efficacy.

Table 4 - Administration Course, evenings, seventh semester: correlations between Self-efficacy and Entrepreneurial Skills.

	BOI	CRC	EQE	PER	COM	BDI	EDM	PMS	PRC	IAC	C.Empr.
ET	0.3798	0.5553	0.2975	0.2250	0.2270	0.5565	0.2474	0.5735	0.6159	0.4019	0.6311
	p=0.009	p=0.000	p=0.045	p=0.133	p=0.129	p=0.000	p=0.097	p=0.000	p=0.000	p=0.006	p=0.000
SE1	0.3034	0.4256	0.1546	0.1312	-0.1573	0.3017	0.1054	0.3800	0.4639	0.2156	0.3664
	p=0.040	p=0.003	p=0.305	p=0.385	p=0.296	p=0.042	p=0.486	p=0.009	p=0.001	p=0.150	p=0.012
SE2	0.4227	0.5161	0.4067	0.2324	0.3908	0.6772	0.3042	0.5906	0.6185	0.4418	0.7121
	p=0.003	p=0.000	p=0.005	p=0.120	p=0.007	p=0.000	p=0.040	p=0.000	p=0.000	p=0.002	p=0.000
SE3	0.3157	0.5504	0.3312	0.3046	0.3823	0.4877	0.3186	0.6293	0.5865	0.4944	0.6714
	p=0.033	p=0.000	p=0.025	p=0.040	p=0.009	p=0.001	p=0.031	p=0.000	p=0.000	p=0.000	p=0.000
SE4	0.1673	0.4145	0.1459	0.2505	0.1557	0.3497	0.0779	0.5769	0.5984	0.1788	0.4446
	p=0.266	p=0.004	p=0.333	p=0.093	p=0.301	p=0.017	p=0.607	p=0.000	p=0.000	p=0.234	p=0.002
SE5	0.2327	0.3369	0.1527	0.0421	0.1064	0.3039	0.3269	0.4028	0.3516	0.3106	0.4067
	p=0.120	p=0.022	p=0.311	p=0.781	p=0.482	p=0.040	p=0.027	p=0.006	p=0.017	p=0.036	p=0.005
SE6	0.4377	0.5410	0.2876	0.1778	0.2811	0.6463	0.1172	0.3153	0.4702	0.3798	0.5626
	p=0.002	p=0.000	p=0.053	p=0.237	p=0.058	p=0.000	p=0.438	p=0.033	p=0.001	p=0.009	p=0.000

Legend: Identifiers as in Table 1.

Observing the relationships between the two constructs for the eighth semester, it was found that their number decreased substantially (Table 5). The relationship between competencies and self-efficacy measured by the total value remains, but CEmpr ceases to have a significant correlation with the subscales “construction of an environment of innovation” (SE2), “establishment of relationships with possible investors” (SE5) and “ability to deal with unforeseen changes” (SE6). As regards the full scale for self-efficacy, it was found that it only maintained significance with three individual competencies: taking calculated risks (CRC), demand for quality and efficiency (EQE), and planning and systematic monitoring (PMS), which were the only ones to have associations with some subscales.

Table 5 - Administration Course, evenings, eighth semester: correlations between Self-efficacy and Entrepreneurial Skills.

	BOI	CRC	EQE	PER	COM	BDI	EDM	PMS	PRC	IAC	C.Empr.
ET	0.1478	0.5245	0.5166	-0.1466	0.0214	0.2573	0.2782	0.4289	0.2482	-0.0249	0.4315
	p=0.481	p=0.007	p=0.008	p=0.484	p=0.919	p=0.214	p=0.178	p=0.032	p=0.232	p=0.906	p=0.031
SE1	0.2095	0.5292	0.3930	-0.2318	0.1106	0.3247	0.2937	0.5090	0.1686	0.0949	0.4593
	p=0.315	p=0.007	p=0.052	p=0.265	p=0.599	p=0.113	p=0.154	p=0.009	p=0.421	p=0.652	p=0.021
SE2	0.1829	0.4100	0.4420	-0.2224	-0.0289	0.0610	0.3120	0.3387	0.2030	0.1871	0.3624
	p=0.381	p=0.042	p=0.027	p=0.285	p=0.891	p=0.772	p=0.129	p=0.098	p=0.331	p=0.370	p=0.075
SE3	0.0651	0.4285	0.6354	-0.0708	0.1200	0.3399	0.3592	0.4376	0.3487	-0.0270	0.4797
	p=0.757	p=0.033	p=0.001	p=0.737	p=0.568	p=0.096	p=0.078	p=0.029	p=0.088	p=0.898	p=0.015
SE4	0.0255	0.5595	0.4717	-0.0329	0.0046	0.1683	0.1996	0.3950	0.3370	0.0991	0.4101
	p=0.904	p=0.004	p=0.017	p=0.876	p=0.983	p=0.421	p=0.339	p=0.051	p=0.100	p=0.638	p=0.042
SE5	0.0709	0.4832	0.3774	-0.1562	-0.0047	0.3564	0.1257	0.3159	0.1291	-0.2290	0.3004
	p=0.736	p=0.014	p=0.063	p=0.456	p=0.982	p=0.080	p=0.549	p=0.124	p=0.539	p=0.271	p=0.145
SE6	0.1874	0.3114	0.3555	0.0282	-0.1354	0.0078	0.1101	0.1907	0.1316	-0.2693	0.1977
	p=0.370	p=0.130	p=0.081	p=0.893	p=0.519	p=0.971	p=0.600	p=0.361	p=0.530	p=0.193	p=0.343

Legend: Identifiers as in Table 1.

The correlations between the constructs for the course in Accounting Sciences, also with classes in the evenings, indicate an opposite relationship to the one described for the course in Business Administration. In this case, it was the seventh semesters that exhibited few associations between the constructs, as shown in Table 6. Thus, the sum total of the

scores for competences (CEmpr) had a significant correlation only with “construction of an environment of innovation” (SE2) and the full scale for self-efficacy relates to just three competencies: running calculated risks (CRC), planning and systematic monitoring (PMS) and persuasion and a network of contacts (PRC). These three competencies, in turn, were correlated with some of the subscales. Thus, CRC correlated with the three subscales “defining the main objective of the business” (SE3), “establishing a relationship with possible investors” (SE5) and “ability to deal with unforeseen changes” (SE6). The competence PMS was correlated with “construction of an environment of innovation” (SE2) and PRC with “product development and market opportunities” (SE1), with SE2 and SE3 and “development of key human resources for the company” (SE4).

Table 6 - Course in Accounting Sciences, seventh semester: correlations between Self-efficacy and Entrepreneurial Skills.

	BOI	CRC	EQE	PER	COM	BDI	EDM	PMS	PRC	IAC	C.Empr.
ET	0.1316	0.4035	0.1724	0.3280	0.2105	0.1438	0.0849	0.3931	0.5011	0.2118	0.3427
	p=0.466	p=0.020	p=0.337	p=0.062	p=0.240	p=0.425	p=0.638	p=0.024	p=0.003	p=0.237	p=0.051
SE1	0.1206	0.0601	0.1814	0.1859	0.1283	0.0511	0.0659	0.3237	0.4523	0.1498	0.2271
	p=0.504	p=0.740	p=0.312	p=0.300	p=0.477	p=0.778	p=0.715	p=0.066	p=0.008	p=0.405	p=0.204
SE2	0.0785	0.3250	0.2873	0.2755	0.3216	0.1019	0.1660	0.3877	0.5321	0.2142	0.3584
	p=0.664	p=0.065	p=0.105	p=0.121	p=0.068	p=0.572	p=0.356	p=0.026	p=0.001	p=0.231	p=0.041
SE3	0.1321	0.3781	0.1681	0.2272	0.1872	0.0068	0.0367	0.2899	0.4732	0.0624	0.2588
	p=0.464	p=0.030	p=0.350	p=0.203	p=0.297	p=0.970	p=0.840	p=0.102	p=0.005	p=0.730	p=0.146
SE4	0.1075	0.2555	0.1784	0.2979	0.1395	0.1340	0.0341	0.2941	0.4190	0.2211	0.2771
	p=0.552	p=0.151	p=0.321	p=0.092	p=0.439	p=0.457	p=0.851	p=0.097	p=0.015	p=0.216	p=0.118
SE5	0.0688	0.5103	-0.0492	0.2822	0.0271	0.2207	-0.0272	0.3090	0.2333	0.1681	0.2299
	p=0.704	p=0.002	p=0.786	p=0.112	p=0.881	p=0.217	p=0.880	p=0.080	p=0.191	p=0.350	p=0.198
SE6	0.0907	0.3687	-0.0168	0.2547	0.1555	0.1784	0.1176	0.1611	0.1149	0.1699	0.2154
	p=0.616	p=0.035	p=0.926	p=0.153	p=0.387	p=0.321	p=0.515	p=0.370	p=0.524	p=0.345	p=0.229

Legend: Identifiers as in Table 1.

On the other hand, when the associations were calculated for the eighth semester, the total score for competencies (CEmpr) had significance with the full scale (ET) and with all the subscales for self-efficacy, as shown in Table 7. The total scale for self-efficacy, meanwhile, only showed no significant correlation with establishing goals (EDM), which is the competency that only had an association with the subscale “ability to deal with unforeseen changes” (SE6).

Table 7 - Course in Accounting Sciences, eighth semester: correlations between Self-efficacy and Entrepreneurial Skills.

	BOI	CRC	EQE	PER	COM	BDI	EDM	PMS	PRC	IAC	C.Empr.
ET	0.7349	0.5475	0.8083	0.7296	0.6250	0.4662	0.3172	0.5993	0.5463	0.5633	0.8018
	p=0.000	p=0.003	p=0.000	p=0.000	p=0.000	p=0.014	p=0.107	p=0.001	p=0.003	p=0.002	p=0.000
SE1	0.5818	0.3973	0.6497	0.6080	0.5009	0.4910	0.2498	0.3759	0.3693	0.4603	0.6311
	p=0.001	p=0.040	p=0.000	p=0.001	p=0.008	p=0.009	p=0.209	p=0.053	p=0.058	p=0.016	p=0.000
SE2	0.6047	0.5128	0.5590	0.5164	0.4522	0.3079	0.1626	0.5115	0.4747	0.3843	0.6069
	p=0.001	p=0.006	p=0.002	p=0.006	p=0.018	p=0.118	p=0.418	p=0.006	p=0.012	p=0.048	p=0.001
SE3	0.6018	0.5520	0.8107	0.6717	0.5902	0.4222	0.2680	0.6149	0.5783	0.6053	0.7715
	p=0.001	p=0.003	p=0.000	p=0.000	p=0.001	p=0.028	p=0.177	p=0.001	p=0.002	p=0.001	p=0.000
SE4	0.6625	0.5011	0.6828	0.5678	0.4680	0.2657	0.1417	0.5358	0.6451	0.4975	0.6727
	p=0.000	p=0.008	p=0.000	p=0.002	p=0.014	p=0.180	p=0.481	p=0.004	p=0.000	p=0.008	p=0.000
SE5	0.6339	0.3346	0.5865	0.5988	0.4578	0.1990	0.1840	0.5015	0.3532	0.4330	0.5790
	p=0.000	p=0.088	p=0.001	p=0.001	p=0.016	p=0.320	p=0.358	p=0.008	p=0.071	p=0.024	p=0.002
SE6	0.5262	0.4193	0.6768	0.5975	0.5981	0.5212	0.5614	0.4725	0.3145	0.3729	0.6825
	p=0.005	p=0.029	p=0.000	p=0.001	p=0.001	p=0.005	p=0.002	p=0.013	p=0.110	p=0.055	p=0.000

Legend: Identifiers as in Table 1.

Besides EDM, other competencies also showed a lack of association with some of the subscales. Thus, running calculated risks (CRC), search for information (BDI), planning and systematic monitoring (PMS), persuasion and a network of contacts (PRC) and independence and self-confidence (IAC) were the ones in this condition, as shown in Table 7.

Final Considerations

On various occasions, it has been recommended that entrepreneurial spirit be promoted in the context of higher education, enabling students, on graduation, not only to focus on looking for a job, but also to be capable of creating them (UNESCO, 1998) The Regional Conference on Policies and Strategies for the Transformation of Higher Education in Latin America and the Caribbean had already declared, after the meeting in Havana in 1996, the need to introduce teaching methods based on learning, with the aim of producing students who learn to learn and how to take initiatives (UNESCO, 1998).

Therefore, it is important to analyze the relationships between some antecedents of entrepreneurial action, of which self-efficacy and entrepreneurial skills are addressed in this study. Both constructs have been associated with entrepreneurial intentions, as in the studies of Boyd and Vozikis (1994), Noble *et al*. (1999), Moriano *et al*. (2006) on self-efficacy, or those of Liñán (2008) and Kakkonen (2011) on competencies. The present study considers students of two courses in the area of applied social sciences whose curriculum includes the discipline of entrepreneurship: Business Administration and Accounting Sciences.

Based on the results, some revelations can be highlighted, thrown up by the survey with the university students. The first observation is the existence of a positive relationship between self-efficacy and entrepreneurial skills. That is to say, when the self-efficacy that students manifest is high, the competencies are also high, and vice versa, if the competencies are low, so too will perceived self-efficacy be low. This evidence was found both for the Business Administration and the Accounting Sciences students, in the analysis of data for students enrolled in the seventh or eighth semesters. However, when the courses were analyzed individually, this relationship was more intense when the students also worked, i.e. those who studied at night.

However, the correlation between self-efficacy, measured by the full scale or by subscales, and the ten entrepreneurial competencies, taken individually or together, occurs differently, depending on the evening course considered. It is observed that the Business Administration students in the seventh semesters showed many significant correlations, while the Accounting Sciences students showed few correlations. For the eighth semesters, the situation is reversed, with few correlations for Business Administration and many for the students of Accounting Sciences. This result is thought to be associated with the teaching curriculum of the discipline of Entrepreneurship.

From a general perspective, the fact that the student is taking, or took the discipline of entrepreneurship can act as a moderator of beliefs, by providing the opportunity for the student be closer and “experience” the reality of the business world. It should be noted that the main focus of the discipline is different in these courses. While the treatment is comprehensive in Administration, the various areas and qualifications in Accounting Sciences are more focused. Thus, the students in the eighth semester, whose inclusion in the labor market is already more defined, should be more closely identified with one of the possible areas of employment, and therefore, the motivator effect the discipline is presumed to have will be used to better advantage when the focus is less dispersed.

This view is supported by an interpretation of Tables 4 and 7, which shown when the students have more correlations between the constructs analyzed. Based on their analyses, it is seen that undergraduates of the seventh semester of Business Administration exhibit

significant correlations for two subscales of self-efficacy with all the ten competencies, i.e., with the three sets into which the model of Cooley (1990) groups them: realization, planning and power. The subscales are the one that evaluates the definition of main business objective (SE3) and the one that relates to the construction of an environment of innovation (SE2), which can be associated with a phase of definitions regarding their future career.

Considering the students of the eighth semester of Accounting Sciences, it is found that the realization sets of the competencies (search for opportunities and initiatives; running calculated risks; demand for quality and efficiency; persistence; and, commitment) and power (persuasion and a network of contacts, and independence and self-confidence) are linked with entrepreneurial self-efficacy, i.e. they declare themselves to be self-effective in a way that is associated with their own competencies for the execution of the work to be carried out, which, it is hoped, will occur when their job option is defined.

The analysis of variance, in turn, offers more effective support for the planning of teaching practices, for the planning of teachers, both at the level of individual courses and at a higher level, such as the Center for Applied Social Sciences or something equivalent, such as the organization of the university institution. From a general perspective, for the complete sample, it is confirmed that the male students feel more self-effective, and with more competencies, than their female counterparts. However, this condition is only observed in Accounting Sciences when the ANOVAs are done individually for each course. This corroborates with what was pointed out by Wilson *et al*. (2007), who suggest that entrepreneurship may still be perceived as a male-dominated field.

Another relevant aspect is how the fact whether the student has taken, or is taking the discipline in Entrepreneurship influences self-efficacy. In the Business Administration students who study in the mornings, it did not cause any differences, while among those who study of night, those who had not yet taken the course felt more self-effective, and the graduates of Accounting Sciences, those who considered themselves to be more self-effective were those who had already taken or were currently taking discipline. These findings provide important information for the definition of pedagogical guidelines at the corresponding level since, as is suggested in the literature on the topic, there are significant positive relationships between education and entrepreneurial activity (Raposo & Paço, 2011), although some changes to the education system may necessary (Lautenschläger & Haase, 2011).

We therefore believe that studies of this nature are important for improving teaching practice, as they enable diagnosis as the basis for defining the strategies needed to achieve a higher education that is focused not only on the future employability of graduates, but that also contributes to entrepreneurial learning. In this regard, new alternatives for the study of entrepreneurship and its relationship with the self-efficacy, such as the inclusion of self-regulation (Bandura, 2012), have led to the development of new models with this vision, such as the one proposed by Pihie and Bagheri (2013). In view of this, the need for continuity and further studies is suggested, to improve the understanding of the results of self-efficacy and entrepreneurial competence among Brazilian university students. Not only with the subject in itself, but also in relation to the positive relationship found with the discipline of entrepreneurship, and the teaching of entrepreneurship in academic education as a whole. It is also recommended that similar studies be carried out simultaneously, in other courses of the same university, and in other types of higher education institutions.

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