

The entrepreneurial profile of Brazilian business administration students

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Abstract

Purpose – This study aims to focus on the entrepreneurial education and profile in undergraduate business administration programs in Brazil, particularly in the southern region of the state of Rio de Janeiro. Assuming that the entrepreneurial profile can be developed by teaching and learning processes.

Design/methodology/approach – The research performed qualitative approach through interviews and a quantitative approach using multiple criteria decision-making methods. Data were collected along 2015 in a survey with a population of 412 students from three high education institutions (HEIs) and analyzed using the analytic hierarchy process with ratings.

Findings – The study has found that the key entrepreneurial trait for all groups was the ability to “plan”. Other relevant dimensions were “self-realization”, “innovative” and “leader”. The dimensions “risk taking” and “sociability” were considered not important in the opinion of all groups.

Practical implications – The entrepreneurial profile does not seem to evolve over the four-year college period, thus suggesting a failure of the entrepreneurial education at the three surveyed HEIs to impact the overall perception of students about the requirements for creating and developing new ventures. Actions to revert this trend should be taken.

Originality/value – This research aims to identify differences in perception about the entrepreneurial profile among freshmen and senior undergraduates. The theme is relevant in a knowledge era where academy has to prepare students to be entrepreneurs. Similar studies were done around in Brazil and around the world but no one in the state of Rio de Janeiro, Brazil. The work has a contribution by proposing and applying a method to compare students groups, programs, institutions and countries over time.

Keywords Analytic hierarchy process, Entrepreneurial education, Entrepreneurial profile, Business administration programs

Paper type Research paper

Introduction

Several studies have suggested that entrepreneurs have common traits and behaviors (McClelland, 1961; Casson, 1982; Dolabela, 2008; Dornelas, 2008; Hisrich, Peters and



Shepherd, 2012). McClelland (1961) described entrepreneurs as being confident, persevering, diligent, skillful, creative, visionary, versatile and perceptive. A subsequent study by McClelland and Winter (1971) indicated that certain people have the following entrepreneurial behavior characteristics: independence; self-confidence; persuasion; networking, monitoring and planning ability; establishment of goals; curiosity; demand for quality and efficiency; willingness to take calculated risks; search for opportunity; initiative; and commitment. Additional traits, such as focus on value generation, protagonism, energy, rebellion against standards, ability to stand out and leadership and influence on opinions, have been mentioned by other authors (Dolabela, 2008; Dornelas, 2008).

Some individuals appear to be born with several of those traits, while others need efforts to perform the role of venture creators. That claim presupposes that certain entrepreneurial behavior characteristics can be acquired. Based on this idea, the teaching of entrepreneurship and its focus on developing competencies become relevant to understand the profile of people who want to start new businesses (Moraes, 2000; Salamzadeh *et al.*, 2014; Rio-Rama *et al.*, 2016).

The entrepreneurial profile can be developed in the teaching/learning process. The teaching of entrepreneurship is defined as a process of developing skills and attitudes and not only a process of transmitting knowledge. This can occur at different levels of teaching, but with more emphasis at the college level (Souza *et al.*, 2004; Henrique and Cunha, 2008). The origin of the teaching of entrepreneurship is associated with undergraduate business management programs (UBAPs) as a practical need. The focus used by business and management schools regarding the training of entrepreneurs is usually to train executives and managers of organizations instead of stimulating students to open new ventures to meet the real social and economic needs of the country (Lavieri, 2010). The professionals of twenty-first century have to be able to create their own positions, many times creating new ventures and redefining business environment (Florida, 2002).

In Brazil, unlike the sole vision of preparing people to become managers of large corporations, starting with the new promulgation in 2005 of the new National Curriculum Guidelines, another vision has arisen, where skills and competencies like determination, creativity and willingness to change have been included in the profile of managers. This is also a relevant aspect in knowledge era, where there is a clear difference between job and employment (Rocha, 2012).

Another aspect, discussed by scholars, is the way to evaluate the teaching of entrepreneurship. Several models and criteria for measuring the effectiveness exist in the literature, such as the rate of opening new businesses by graduates or the intention expressed to do that by students, the perceived entrepreneurial profile and entrepreneurial aptitude and potential (McGee *et al.*, 2009; Silva *et al.*, 2010; Cubico *et al.*, 2010; Schmidt and Bohnenberger, 2009; Rio-Rama *et al.*, 2016). The commonly used are the intention to open a new business and the entrepreneurial profile model.

This last model is the base for this study, which uses the differences between the entrepreneurial profile of freshmen and senior students of UBAPs, as a measure of the teaching of entrepreneurship in those courses. For this purpose, we proposed and applied a method to evaluate and understand the teaching practices on the theme. Because of the difficulty to make a country survey (because the large amount of programs and territorial extension) and to test the evaluation method proposed, we realized a pilot study is needed in the Médio Vale do Paraíba region, in the southern part of Rio de Janeiro state, Brazil. This region, located between the megalopolises of São

Paulo and Rio de Janeiro, is characterized by the presence of large industrial plants owned by national and multinational companies, and was the cradle of Brazil's industrialization process. In the past 20 years the service sector has been growing strongly, mainly in small businesses that provide complementary services to the industrial process. Therefore, the UBAPs have been altering their curriculums, including entrepreneurship and innovation as relevant themes (Ferreira *et al.*, 2014).

This work is organized in five sections including this introduction. The second section presents the literature review of themes as entrepreneurship, teaching processes and assessment of the entrepreneurial profile; the third section explains in detail the research method used; the fourth presents the empirical findings; and the fifth contains our final considerations, contributions, and limitations of the study.

Theoretical framework

Entrepreneurship and the entrepreneurial profile

Although there is consensus about the importance of entrepreneurship and innovation to the economic development of countries (Schumpeter, 1978; Fagerberg *et al.*, 2009), the exact definition of the term remains controversial. Entrepreneurship occurs when four basic conditions are present: motivation to overcome challenges, knowledge, expectation of personal gain and support from the outside environment (Bull and Willard, 1993). According to Longenecker *et al.* (2009), freedom or autonomy is a fundamental factor for materialization of the objectives of new undertakings, combined with resources, action strategies and the search for relevant business opportunities. Baron and Shane (2007) define entrepreneurship as a process with distinct but closely related phases: recognition of opportunities, the decision to go ahead and gather the basic resources to start the process, the launch of a new undertaking, judging the success of this undertaking and obtaining the rewards of that success.

Whatever the definition of entrepreneurship, the key element is the "entrepreneur". Schumpeter (1978) stresses the importance of this actor for the process of economic development, with the creation of new businesses and jobs generation being essentially based on change that involves entrepreneurial acts. Filion (1991) defines the entrepreneur as "someone who conceives, develops and realizes visions". In sum, the entrepreneur is someone who detects an opportunity and creates a business to capitalize on it, assuming calculated risks (Dornelas, 2001).

Studies to identify the strongest personality and behavioral characteristics of entrepreneurs to determine this profile have been conducted by many researchers. The list below summarizes some of the identified characteristics, organized into psychosocial and environmental and economic factors:

- *psychosocial*: initiative and independence, persistence, long-term vision, self-confidence and optimism, commitment, standard of excellence, persuasion, need for realization, collectiveness and training; and
- *environmental and economic*: ability to work with support groups; ability to find investors; ability to overcome obstacles of the economic situation; ability to work with scarce financial resources; ability to overcome external bureaucratic hurdles; ability to choose good location, greater use of technology, knowledge of the market and ability to use it; construction of an information network; ability to work in groups; and ability or knowledge acquired with time by means of education.

Dimensions/Criteria	Variables/Subcriteria
Self-realization (C1)	S1) I often detect business opportunities in the market S2) I think I have a good ability to detect business opportunities in the market S3) I have control over the factors for my full professional realization S4) Professionally, I consider myself to be much more persistent than others S5) I always find highly creative solutions to the professional problems I face
Leader (C2)	S6) I have a good plan for my professional life S7) I am often chosen to lead professional projects or activities S8) People often ask for my opinion about subjects related to work S9) People respect my opinion S10) I get along easily with other people
Planner (C3)	S11) In my work, I always carefully plan what I do S12) I always try to thoroughly study each professional situation that involves some type of risk
Innovator (C4)	S13) I always plan subjects related to work very well S14) I prefer a tasks filled with novelties over a routine activity S15) I like to change the way I work anytime possible
Risk taker (C5)	S16) I get irritated when taken by surprise by facts that could have been foreseen S17) I would assume a long-term debt when believing in the advantages a business opportunity would bring S18) At work, I normally influence the opinion of others regarding a determined subject
Sociable (C6)	S19) I am willing to run risks in return for possible benefits S20) My social contacts have little influence on my professional life S21) My social contacts are very important to my personal life S22) I know several people who can help me professionally, if I need

Table I.
Characteristic
dimensions and
variables of the
entrepreneurial
profile

Source: Author's tabulation based on [Schmidt and Bohnenberger \(2009\)](#)

Based on the list of characteristics, [Schmidt and Bohnenberger \(2009\)](#) extracted common characteristics and attitudes present directly or not in the personality of entrepreneurs. These characteristics were conceived to sustain the process of preparing a measurement instrument, later used by [Rocha \(2012\)](#) and [Rocha and Freitas \(2014\)](#). [Table I](#) shows the characteristics proposed to evaluate the entrepreneurial profile, divided into six dimensions and 22 variables.

Entrepreneurial education

It is possible to teach entrepreneurship, although the student must have aptitude for the logic of the field of study ([Oliveira, 2012](#)). Authors like [Filion \(2001\)](#) advocate the importance of that action, but argues that it cannot be taught like other isolated subjects. To teach entrepreneurship, it is necessary to develop programs and courses with learning and experimentation systems that are adapted to this field of study, providing the students with a structure of real connections, to help their comprehension of the different steps of their development.

The study carried out by [Martin et al. \(2013\)](#) shows that the formation of human capital through educational and training activities focused on entrepreneurship can be related to the creation and development of businesspeople [even though [Rideout and Gray \(2013\)](#) emphasize the lack of rigorous methods to determine the efficacy of these programs]. Regarding the forms of teaching entrepreneurship, the study of [Guimarães \(2002\)](#) stands out, examining universities in the USA. He describes the teaching methods and curriculum

contents most used for this purpose. According to the findings, contents focused on planning and creation of new companies that analyze the profile, skills and behavior of entrepreneurs to enable the process predominate. Regarding the methods, he used comments of successful entrepreneurs, case studies and business plans. Researchers and thinkers on entrepreneurial education advocate a pedagogical approach more directed to practice as the best for teaching entrepreneurship. Traditional classes can be used only for transfer of theoretical knowledge (Henrique and Cunha, 2008; Ruskovaara *et al.* 2010; Peterson and Limbu, 2010).

Figure 1 shows the stages of programs for development of entrepreneurial education, which is the process that aims to develop skills that enable people to identify and take advantage of opportunities for posterior transformation into reality.

Assessment of entrepreneurial education

Carvalho and Zuanazzi (2003) evaluated the entrepreneurial behavior characteristics of UBAP's students and their relationship with the expectations of entrepreneurship teaching. The results indicated that the students who already had their own business or intended to create one were more interested in the entrepreneurship courses and presented higher entrepreneurial behavior characteristics indexes in aspects like willingness to take

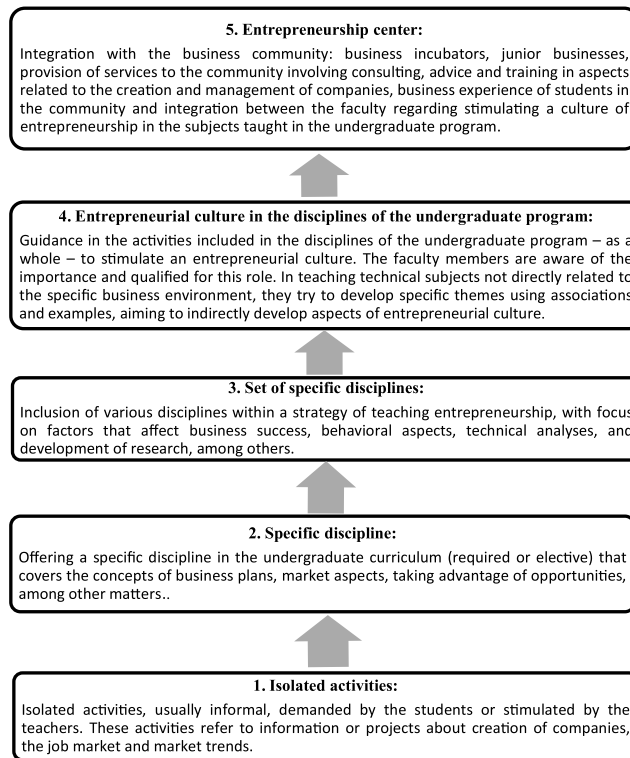


Figure 1.
Stages of
entrepreneurial
education

Source: Author's creation based on Andrade and Torkomian (2001)

calculated risks in comparison to those who did not intend to open a business or were unemployed. In this respect, [Carvalho and González \(2006\)](#) proposed a model to explain the entrepreneurial intention, with emphasis on academic, demographic, family, and social elements. They found that this model only explained the direct relations of these elements, so that the consideration of indirect relations was a limitation of their study. The focus of models that use the intention to create a business goes beyond the limits of universities, because other factors can be included, such as the business climate, personal traits, kinship with entrepreneurs and social and educational level. This means that these models are not the best to assess the learning of entrepreneurship by undergraduate students ([Izquierdo and Buelens, 2011](#); [Boyles, 2012](#)).

The literature contains models that use the entrepreneurial profile as a way to assess the teaching of the subject ([Bae et al., 2014](#)). These models explore the relation among the development of the profile and education and have been used in several ways to evaluate groups, settings and gender differences ([Guimarães, 2002](#); [Peñaloza et al., 2008](#); [Rocha and Freitas, 2014](#)), in the analysis of relationships ([Corrêa and Vale, 2014](#)); to compare teaching practices in different countries ([Ferreira et al., 2006](#)); and to assess academic process models and identify the impacts of entrepreneurship and motivations ([Oosterbeek et al., 2010](#)).

Some of these studies have used multiple criteria decision-making (MCDM). [Rezaei et al. \(2013\)](#) did some applications of the analytic hierarchy process (AHP). [Han et al. \(2012\)](#) developed an assessment model based on fuzzy logic and AHP and applied in 11 regions in the province of Hebei, China, to evaluate the entrepreneurial environment. [Somsuk and Laosirihongthong \(2014\)](#) identified factors related to the internal resources that influenced the success of university business incubators in Thailand, also applying fuzzy logic and AHP to categorize and rank 14 factors found. At this study, we use the entrepreneurial profile to evaluate the teaching of entrepreneurship. The form of assessing the relationship of teaching with development of the entrepreneurial profile of students is based on the model of [Schmidt and Bohnenberger \(2009\)](#), using AHP to rank the importance of the profile characteristics.

Research procedures

The research method was mixed, by incorporating aspects of qualitative analysis (interviews with courses coordinators) and quantitative (survey) treated using MCDM. The institutions offering UBAPs were chosen based on location (southern region of Rio de Janeiro state), scores on the National Student Performance Test (4 and 5, with 5 being the maximum), and availability of the UBAP coordinator. Three high education institutions (HEIs) fit these parameters. One is a federal public university and two are private profit colleges (not identified here). All of them with at least one campus in the city of Volta Redonda, RJ.

Besides the literature review, we sought to understand the importance of teaching entrepreneurship from interviews with the UBAP's coordinators and analysis of the responses to questionnaires applied to different groups of college students. The groups are identified as Group I (freshmen – first-year students) and Group II (senior – fourth-year students). The data were analyzed by the AHP method with ratings, using the Super Decisions version 2.2.6 software.

The questionnaire was organized in three sections. It was based on a model proposed and validated by [Schmidt and Bohnenberger \(2009\)](#). These authors, supported by a wide literature review, originally identified eight dimensions and 22 variables, to explain the entrepreneurial profile. They validated the model in an

application at FEEVALE, a college in the city of Novo Hamburgo, south of Brazil, with 1,122 students. To correlate dimensions and variables [Schmidt and Bohnenberger \(2009\)](#) did an exploratory factorial analysis, with extraction of principal components, and Varimax rotation. The final model, with six dimensions, was applied also by [Rocha and Freitas \(2014\)](#) in a similar study in the city of Fortaleza, state of Ceara, northeast of Brazil, with four institutions and a sample of 407 students as population and 242 answers. [Rocha and Freitas \(2014\)](#) used also the Cronbach's alpha as an instrument for measuring the reliability of the entrepreneurial profile scale proposed by [Schmidt and Bohnenberger \(2009\)](#).

To apply the model, the basic idea is to ask to freshmen and senior students the perceived relevance of each item. The response options were structured on a five-point Likert scale (from not important to extremely important). This study was transversal in nature, since the data were collected one time only at each institution, along 2015, as part of a Master dissertation field research ([Bastos, 2015](#)). The survey was applied with the support of the UBAP's coordinations. As the answers were voluntary, the result was a non-statistical sample of 294 students from a population of 412. [Table II](#) shows the distribution.

The answers to the questions in Sections I and II allowed ranking the criteria and subcriteria, i.e. determining the importance attributed by each group to the dimensions and variables (called criteria and subcriteria, respectively, when using the AHP) that define the entrepreneurial profile. The answers to the questions of Section III allowed characterizing the sample regarding specific aspects and involvement with entrepreneurial activities during the teaching process.

As defined by the International Society on MCDM the method addresses the study of the inclusion of conflicting criteria in decision making. It is a discipline that has produced a large number of articles and books, since the 1960s. The advantages of applying this method are analysis of the context of decision making, identifying actors, alternative solutions, consequences, stakeholders; organization of the decision-making process to achieve consistency between the objective of the decision and the final decision reached; cooperation and consensus among decision-makers; and legitimation of the final decision ([Salomon et al., 2009](#)).

The AHP was one of the first methods to solve decision-making problems in the presence of multiple quantitative and qualitative criteria. Most methods consist of three steps:

- (1) identification of criteria and decision alternatives;
- (2) allocation of importance values for the criteria and performance values for alternatives; and
- (3) synthesis of results.

UBAP	Total of freshmen students	Respondents	(%)	Total of senior students	Respondents	(%)
A	72	57	79.2	68	44	64.7
B	43	35	81.4	93	68	73.1
C	80	38	47.5	56	52	92.9
Total	195	130	66.7	217	164	75.6

Table II.

Survey respondents

Source: Author's tabulation

In applying the traditional AHP, when the criteria for comparison are qualitative, relative measurement is applied where the alternatives are compared pairwise. When the number of comparisons is very large, absolute measurements or ratings can be used to apply the AHP, as in this study, with 22 variables. The AHP is classified as a qualitative method when used to analyze a specific phenomenon of case, but when the emphasis is on the results of applying the method to corroborate an expected result, as in this case, then the approach is classified as quanti-qualitative (Salomon *et al.*, 2009). This also explains the use of the expression “mixed research method”.

Results and discussion

This section is organized in two topics: characterization of the groups studied and characterization of the entrepreneurial profile of the surveyed groups.

Characterization of the groups studied

A list below shows a summary of the characteristics of the UBAP at each institution, identified with the letter “A”, “B” and “C”. As can be noted, the programs have roughly the same time of functioning. The basic differences are in the overall curriculum, which can lead to different results.

UBAP A: The program was established about ten years ago. The curriculum has two specific courses about entrepreneurship, which are given in the fourth and fifth semesters.

UBAP B: The program was established 12 years ago. The curriculum does not contain any specific course about entrepreneurship. There are other courses in the curriculum that include concepts of entrepreneurship (first, sixth and seventh semesters).

UBAP C: The program was established ten years ago. The curriculum has one specific course about entrepreneurship, given in the second semester. Other courses (mandatory and elective) include the theme.

Table III reports the percentage values of the responses of each group and institution, when asked about participation in practical activities related to entrepreneurship (defined on the questionnaire as activities promoted by the UBAP).

In general, the results show little participation of students in practical activities to train entrepreneurs. The preparation of a “Business Plan” is covered by all the UBAPs, so it increases for Group II. The participation in “Projects” (research and extension) is only featured at UBAP “C”. This aspect was cited by the coordinator. The values are not high because they are activities that involve only a few students in function of the small

UBAP	Groups	Business plans (%)	Incubators (%)	Projects (%)	Simulations (%)	Presentations (%)	Practical classes (%)
A	I	0.00	0.00	3.51	0.00	3.51	0.00
	II	29.55	4.55	2.27	0.00	15.91	4.55
B	I	5.71	0.00	2.86	0.00	5.71	2.86
	II	14.71	0.00	0.00	17.65	16.18	2.94
C	I	5.26	0.00	10.53	2.63	2.63	2.63
	II	9.62	1.92	11.54	11.54	3.85	1.92

Source: Author's tabulation

Table III.
Participation in
practical activities
related to
entrepreneurship

availability of scholarships and other funding mechanisms, but it demonstrates that UBAP “C” works with this aspect. “Simulations” are part of the content of other disciplines, which use business games as a form of practical teaching. The students who participate recognized the importance of these games to the development of an entrepreneurial profile. “Presentations” are the most frequent activities at UBAPs “A” and “B”. Also, in this case, the coordinators interviewed had placed these activities as positive for the formation of entrepreneurial characteristics in the respective UBAP.

Similar results were obtained by Rocha (2012), who also found that practical activities on the theme of entrepreneurship were scanty, highlighting that traditional classes (theoretical and expositive) were the model most often used in the undergraduate courses.

Characterization of the entrepreneurial profile of the surveyed groups

To characterize the entrepreneurial profile, we formed the hierarchical structure shown in Figure 2.

To obtain the numerical values of the ratings, we used the comparison carried out by Silva et al. (2010) shown in Table IV. The value of CR was below the recommended value (0.1), indicating the consistency of the judgments. For all the subsequent applications we use the idealized vector recommended by Saaty (2006). The numerical values of the ratings

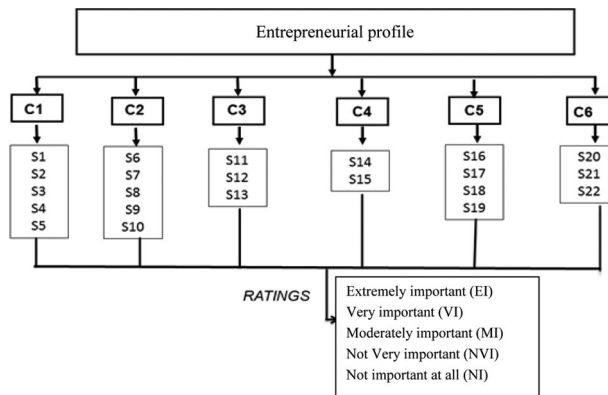


Figure 2.
Hierarchical structure

Source: Author’s tabulation based on Saaty (2006)

Table IV.
Matrix for comparison of the intensities of the ratings

Categories/Intensities	EI	VI	MI	NVI	NI	Normalized vector	Idealized vector
Extremely important (EI)	1	3	5	7	9	0,513	1,000
Very important (VI)		1	3	5	7	0,261	0,510
Moderately important (MI)			1	3	5	0,129	0,252
Not very important (NVI)				1	3	0,063	0,124
Not important at all (NI)					1	0,034	0,065

Source: Author’s tabulation based on Silva et al. (2010)

follow a decreasing scale from “Extremely important” to “not important at all”. These rating values are used in all the cases analyzed.

The next step on the method is to determine the weight of the criteria/subcriteria and the aggregation of the result by calculating the final priorities, where it is necessary to

Dimensions/Criteria	C1	C2	C3	C4	C5	C6	Vector
C1	1	1	1/3	1/2	4	5	0,16050
C2		1	1/3	1/2	3	4	0,14367
C3			1	3	4	5	0,38154
C4				1	4	4	0,20889
C5					1	1	0,05721
C6						1	0,04819

Source: Author's tabulation

Table V.
Matrix of pairwise
comparison

Criteria/Subcriteria	Saaty's hierarchy	Vector
<i>C1 (0,1605)</i>		
S1	Very important (0,51)	0,0819
S2	Not very important (0,124)	0,0199
S3	Moderately important (0,252)	0,0404
S4	Moderately important (0,252)	0,0404
S5	Extremely important (1,000)	0,1605
<i>C2 (0,14367)</i>		
S6	Very important (0,51)	0,0733
S7	Not very important (0,124)	0,0178
S8	Moderately important (0,252)	0,0362
S9	Very important (0,51)	0,0733
S10	Extremely important (1,000)	0,1437
<i>C3 (0,38154)</i>		
S11	Extremely important (1,000)	0,3815
S12	Very important (0,51)	0,1946
S13	Moderately important (0,252)	0,0966
<i>C4 (0,20889)</i>		
S14	Very important (0,51)	0,1065
S15	Moderately important (0,252)	0,0526
<i>C5 (0,05721)</i>		
S16	Moderately important (0,252)	0,0144
S17	Not very important (0,124)	0,0071
S18	Not very important (0,124)	0,0071
S19	Not very important (0,124)	0,0071
<i>C6 (0,04819)</i>		
S20	Not very important (0,124)	0,006
S21	Moderately important (0,252)	0,0122
S22	Moderately important (0,252)	0,0122

Source: Author's tabulation

Table VI.
Evaluation of the
variables/subcriteria

particularize the study in each group from each university (the procedure is detailed for Group I of UBAP "A").

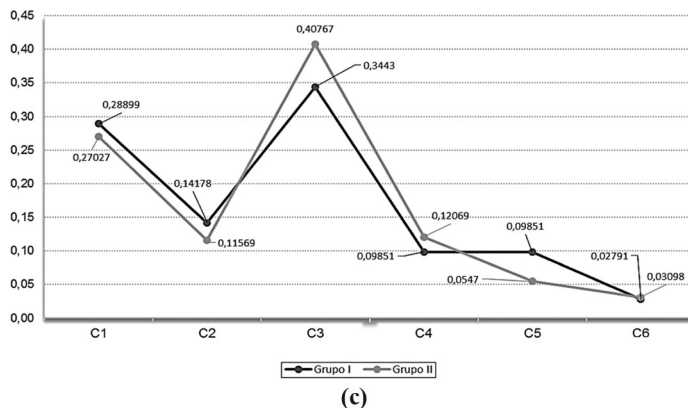
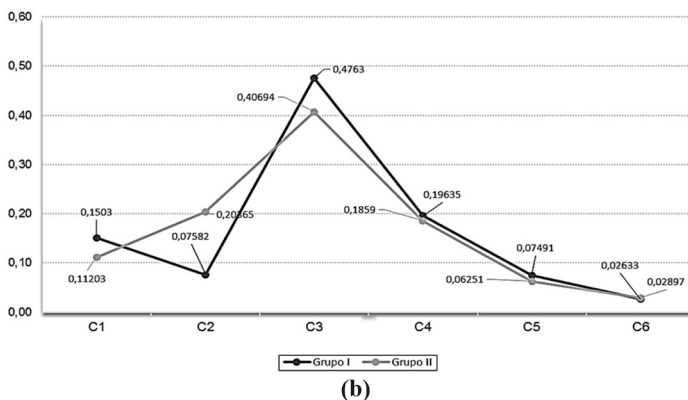
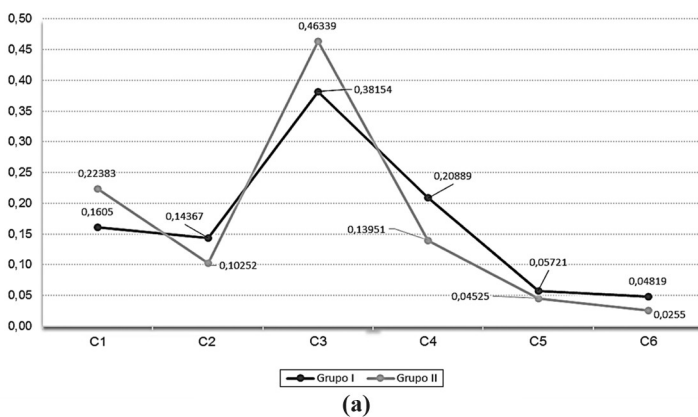
Table V shows the matrix for comparison of the dimensions of the entrepreneurial profile of Group I from UBAP "A". For all the calculations (in all groups and universities), we used the Super Decisions 2.2.6 program to calculate the relative comparison scale according to Saaty. The result shows the greatest importance is attached to the Planner dimension (C3), followed by the Innovator (C4) and Self-realization (C1) dimensions, which have a small difference with respect to the Leader dimension (C2).

Next, we evaluated the variables of the entrepreneurial profile (subcriteria). Table VI shows the intensity of each variable/subcriterion and the vector resulting from multiplying the intensity of the variable/subcriterion by the priority vector of the dimensions/criteria.

Likewise, we performed the procedure for the other groups of each UBAP. Figures 3 show the behavior of the dimensions of the entrepreneurial profile for "A", "B" and "C".

To UBAP A, as can be seen in Figure 3, dimension C3 is the most important for both the groups, but the dimensions C1, C2 and C4 change order from Group I to Group II: C2 and C4 decline in importance while the importance of C1 increases in the latter group. UBAP "A" offers courses involving entrepreneurship and according to the coordinator, there is no transversality of contents between the different courses and the approach to the theme occurs by individual activities from professors' initiatives. The extension/outreach activities along the academic life are positively assessed, such as presentations coordinated by the Commercial, Industrial and Agripastoral Association of Volta Redonda (ACIAP-VR), at which there is encouragement to personal planning and effort to identify the training needs for identification of business opportunities. This to a certain extent explains the result obtained, where dimensions C3 and C1 increase in importance for Group II (seniors). Therefore, the educational activities developed by the UBAP can be contributing to the development of these two characteristics.

To UBAP B, in Figure 3 it can be seen that dimension C3 continues being the most important in the opinion of the students of both groups, but unlike for the other programs, the importance to the seniors (Group II) is lower than for the freshmen (Group I). Dimension C2 also has different behavior, with a small increase in importance from 7.58 per cent for Group I to 20.36 per cent in Group II. This is the largest change of importance in all the dimensions. Investigation of the causes of this behavior revealed that at the UBAP the curriculum differs from the other two institutions. There is no specific course called "entrepreneurship" that covers the general concepts of the theme, but in the first, sixth and seventh semesters there are courses that address the theme with more specific content. The course called "Business Plan" in the first semester stresses the need for planning, possibly influencing the result for the importance of dimension C3 for Group I, which is formed of first-year students. Afterward, the courses called "Project Management" and "Budget and Costs", in the sixth and seventh semesters, reiterate the themes of entrepreneurship and formulate new concepts, which can contribute to develop other characteristics of the entrepreneurial profile, such as the Leader dimension (C2). The aspect that stands out in this school's curriculum is the incorporation of the concept of transversality imparted in different disciplines. These contents initially appear in simple form and continue in more practical way while adding complexity and interdependence with the contents seen beforehand. A negative aspect of this UBAP is the low number of extension or extracurricular activities to support the entrepreneurial training, with presentations by successful entrepreneurs being the main means used.



Notes: (a) UBAP A, Group I and II; (b) UBAP B, Group I and II;
(c) UBAP C, Group I and II

Source: Author's tabulation

Figure 3.
Importance of the
dimensions of the
entrepreneurial
profile for UBAPs
“A”, “B” an “C”

Figure 3 also shows the situation of UBAP “C” regarding the dimensions of the entrepreneurial profile. Dimension C3 is most important for both groups, with higher value for Group II. Dimensions C1, C2 and C4 change order from Group I to Group II: C1 and C2 decline in importance while C4 gains importance. To further investigate this behavior, we analyzed the curriculum and characteristics of the program presented by the coordinator. At UBAP “C” the discussion of the theme starts in the second semester, but a large set of curricular and extracurricular activities exists that cover themes related to the subject during all the semesters. Some contents of different courses (mandatory and elective) include entrepreneurial training activities. The standout of this institution is the existence of projects that incorporate aspects of entrepreneurship, but not all the students participate and as a result the skills of the students can differ. Analysis of Figures 3 shows that the dimensions “Risk taking” (C5) and “Sociable” (C6) are less important to the profile according to the opinion of all the groups and UBAPs. Specifically C5 in all the UBAPs has lower importance for Group II than for Group I. This result is contradictory when considering the opinion of most of the referenced authors, who consider that risk taking is a determining characteristic in the profile of entrepreneurs.

With respect to the variables that measure the entrepreneurial profile, Table VII contains a summary of the importance of the top five for each group and UBAP. The variables S11, S12 and S13 are concentrated in the first positions. These are directly related to the “Planner” dimension (C3). This result was reasonably expected, given that this dimension was the highest in importance for all the groups, with high positive differences when compared to the other dimensions.

In UBAPs studied contents of management and planning are incorporated in many disciplines from the outset, and they normally increase in the second half of the program. Thus, this characteristic gains importance regardless of whether a student participates in specific entrepreneurial training activities.

The other important variables are related to the dimensions “Self-realization” (C1) and “Leader” (C2). Regarding the variables related to C2 (S6, S8, S9 and S10), they had a considerable positive change at UBAP “B”, but some of them also were highly important at the other two programs. In turn, the behavior of the variables related to the dimension C1 (S1, S2, S3, S4, S5) was expected, given the importance this dimension received in the majority of the groups and UBAPs when compared to the other dimensions, although it only increased from Group I to Group II at UBAP “A”.

The lowest ranked is the variable S14, related to the “Innovator” dimension (C4). It appears in the fourth and fifth positions of some of the groups, with the standout being at UBAP “B”, where it occupies the same position (fourth) in the two groups, but with importance values that increase for Group II (21.02 per cent for Group I and 45.68 per cent for Group II). This variable is associated with the preference for tasks replete with novelty

Table VII.
Summary of the
importance of
the variables of the
entrepreneurial
profile

UBAP	Group	1st position	2nd position	3rd position	4th position	5th position
A	I	S11	S12	S5	S10	S14
	II	S11	S12	S10	S13	S5
B	I	S11, S12	S13	S3, S5	S14	S2, S4
	II	S11	S12	S9, S10, S6	S14	S5
C	I	S11, S12	S13	S1, S4	S2, S5	S6, S8, S10
	II	S11, S12	S10	S13	S1, S5	S9

Source: Author’s tabulation

and challenges, and even with a decrease of one percentage point in dimension C4 for UBAP “B”, the increase in the value of this variable is evident, which can be related to the way the contents involving entrepreneurship are treated.

In general, the results reveal small variability in the entrepreneurial profile of the students when compared between groups and institutions, a similar finding of the studies conducted by [Schmidt and Bohnenberger \(2009\)](#) and [Rocha and Freitas \(2014\)](#). The importance attributed to the dimensions and variables of the entrepreneurial profile has not only a significative variation from one group to another but also from one UBAP to another. This is evidence that even though the theme entrepreneurship is covered differently, the overall outcome in terms of perceived attributes of entrepreneurial profile is too similar. Although the focus of the two cited studies was the development of models to analyze the effect of entrepreneurial education during college, they identified the most relevant dimensions and variables. In both, the category “planner” was the most relevant to the UBAP’s students. The same result found at this research suggests the urgency of a wide discussion about the methods of entrepreneurial education.

Conclusion and managerial implications

Both freshmen and senior students view the traits of “planner”, “innovative” and “self-realization” through leadership as the core attributes of company creators. The fact that the dimensions “risk taking” and “sociability” were considered “not very important” in the opinion of all groups, regardless of seniority, has at least two practical implications: inexperienced students seem to underestimate the importance of social networking and risk taking as key attributes of successful entrepreneurs, and this perception does not seem to evolve over the four-year period of college. This suggests that the entrepreneurship contents in the curriculum of the three surveyed UBAPs do not seem to impact students’ perceptions towards important entrepreneurial traits.

The small impact of HEIs on entrepreneurial attitudes in the sampled groups may be because of the insufficient participation of students in entrepreneurial activities ([Table III](#)). “Business Plan” development was the only widespread entrepreneurial activity among the three institutions, which may explain why “planner” was consistently perceived as the most important trait. This points toward a major flaw in the entrepreneurial courses content design in these three UBAPs. The faculty body must do a better job of involving students with incubated projects within or outside the campus, stimulate entrepreneurial project development and expose potential entrepreneurs to the surrounding eco-system to develop the notion about the importance of networking and taking risks. Attitudes towards entrepreneurship will not be changed by presenting conceptual slides in a classroom, but by actively encouraging students to develop their ideas during their four-year program.

This study has some limitations. First of all, the sample was limited to three UBAPs in one region of an emerging economy. Second, the inquiry was based on a convenience sample of freshmen and senior students who did not necessarily expressed entrepreneurial intention; therefore, the opinions of potential entrepreneurs were mixed with those of students who do not have any vocation of interest in creating a new business venture. In spite of the empirical shortcomings of our exploratory approach, this study makes a methodological contribution by adapting the MCDM to understand the perception of students about entrepreneurship profiles. This approach has proven to be pertinent by allowing us to measure the importance and priorities of the

dimensions and variables that define the entrepreneurial profile in heterogenous groups. Future studies may replicate the approach used here among pure entrepreneurs to evaluate the impact of dedicated entrepreneurship programs. Such replication shall expand the sample size and compare the results obtained here with other regions of Brazil and/or other countries. Another stream for future research would be to analyze the increase in entrepreneurial competencies of graduated students with the generation of new businesses in a region. Finally, analysis can be directed at how the entrepreneurial profile and experiences of faculty body members affect the teaching of the theme.

The data from this study show that a superficial teaching of entrepreneurship has limited potential to change students' attitudes toward entrepreneurial traits. The UBAPs studied need to rethink the way they deal with the theme, with the aim of increasing the students' participation in theoretical and practical activities that instill an entrepreneurial spirit. This will require revision of the curriculum to strengthen transversal training, with specific courses combined with the diffusion of concepts across the curriculum, in such courses as accounting, finance and management principles, for example. Hence, we suggest more "hands-on" activities, with interactive activities (business games) and encouragement to participation in junior enterprises, incubators and internships within start-ups.

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