

Junior enterprise and entrepreneurial behavior in Brazil

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Abstract

Purpose – The purpose of this paper is to analyze what is the influence of the junior enterprise environment on the entrepreneurial profile and intention of university students and what is the difference in the entrepreneurial behavior between students who participated and students who did not participate in junior enterprises.

Design/methodology/approach – A quantitative approach based on multivariate data analysis using confirmatory factor analysis and structural equation modeling was applied to a sample of 549 respondents.

Findings – Participation in junior enterprises influences the development of the students' entrepreneurial profile more than their entrepreneurial intention. This study presents which behavioral characteristics are mostly developed with participation in a junior enterprise.

Research limitations/implications – The questionnaire with perception conditions and self-assessment indicators; data collection by a single cross-sectional research design; the scope of the research, which did not use a probabilistic sampling.

Practical implications – Practical implications are to assist higher education institutions in having a more accurate understanding of the role of junior enterprises in stimulating university entrepreneurship. To implement an effective entrepreneurial education, stimulating junior companies can be a fundamental action for the HEIs, and this is valid for courses in all areas. Entrepreneurial education in a practical context, as in the case of a junior company, can increase entrepreneurial intention.

Originality/value – This research fills a research gap on the uncertainty of the effectiveness of entrepreneurial education in developing the entrepreneurial behavior and entrepreneurial intention of students, at least when considering the junior company as part of entrepreneurial education in the university context, presenting a robust quantitative methodology and a large sample in a developing country.

Keywords Entrepreneurial intention, Brazil, Entrepreneurial behavior, Entrepreneurial profile, Junior enterprise

Paper type Research paper

1. Introduction

Entrepreneurship is deemed as the process of creating ventures and, therefore, it is a planned activity (Shi, Yao, & Wu, 2020). Because of their potential to encourage economic growth,

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social development and provision of jobs, governments and educational institutions devote efforts and invest large amounts of financial resources to promote entrepreneurial behavior (Rocha & Freitas, 2014; Shi *et al.*, 2020). Resuming the academic interest in exploring the entrepreneurial profile, this research is focused on individual agents and entrepreneurs, and how their actions and behaviors are shaped (Acs *et al.*, 2017; Schmidt & Bohnenberger, 2009), considering that common characteristics are attributed to these individuals (Krakauer *et al.*, 2018; Moraes, Iizuka, & Pedro, 2018; Rocha & Freitas, 2014; Schmidt & Bohnenberger, 2009).

No consensus has been reached regarding the complete set of characteristics that define entrepreneurs as a group and consolidate their nomenclature (Moraes *et al.*, 2018; Ozaralli & Rivenburgh, 2016; Zhao, Hills, & Seibert, 2005). While some authors rather use personality traits (Zhao & Seibert, 2006; Fragoso *et al.*, 2020), others use the entrepreneurial profile nomenclature (Iizuka & de Moraes, 2014; Rocha & Freitas, 2014). Given that our research focuses on more generic aspects of how entrepreneurs behave (Filion, 1994), this study adopts the term entrepreneur profile. In this sense, in the entrepreneur profile, entrepreneurial characteristics represent the skills and traits that an entrepreneur must have to successfully manage a business (Atiya *et al.*, 2019). Among the most commonly reported entrepreneurial characteristics, we mention the following attitudinal aspects: self-efficacy, leadership, planner, sociability, innovative and to take calculated risks.

Another point worth mentioning is how entrepreneurial intentions are manifested, considering it is one of the factors that lead individuals to perform business activities (Aleksandrova, Gerry, & Verkhovskaya, 2020). The theory of planned behavior (TPB), formulated by Ajzen (1991), is a major theory explaining such manifestation, which formulates a causal relationship between entrepreneurial intention and entrepreneurship itself (Ajzen, 1991; Liñán & Fayolle, 2015).

At the same time, although entrepreneurial education is defined as a process of developing attitudes and skills for building the entrepreneurial profile (Amaral *et al.*, 2018), its efficacy in promoting students' entrepreneurial intentions is still uncertain (Shi *et al.*, 2020). This points to the need for evaluating mechanisms that ensure education efficiency in cultivating entrepreneurial behavior, such as participating in small companies or junior consultancies, for assisting the process of learning how to perform business activities (Shi *et al.*, 2020). Although participating in junior enterprises may positively influence the development of entrepreneurial behaviors among young people (Barba-Sánchez & Atienza-Sahuquillo, 2018), this field of study, which depends on an experimental learning, is still little explored, and research on entrepreneurial skills are still scarce (Johansen, 2016; Grewe & Brahm, 2020). This is particularly true for the context of developing countries, which reproduce practices adopted in advanced economies without properly assessing their adequacy (Fischer *et al.*, 2019; Moraes *et al.*, 2020; Guerrero *et al.*, 2018; Vodă & Florea, 2019).

Junior enterprises emerged in the 1980s and, according to data collected by the Brazilian Confederation of Junior Enterprises (*Confederação Brasileira de Empresas Júniores* – Brasil Júnior), more than 400 junior enterprises and more than 11,000 junior entrepreneurs are established throughout Brazil, which may be associated with more than 17 states. This research aimed to analyze the influence of the junior enterprise environment on the entrepreneurial behavior of university students. For that, we intend to answer the following questions: *What is the influence of the junior enterprise environment on entrepreneurial profile and entrepreneurial intention? What differs between the entrepreneurial behavior of students who participated participate in junior enterprises and those who did not?*

From an academic point of view, this research helps to understand the impact of entrepreneurial education on the development of human capital (Cranmer, 2006; Sin & Neave, 2016; Nowiński *et al.*, 2019), highlighting the most impacted characteristics by junior enterprise environment. From a practical point of view, this research can provide higher education institutions (HEI) a more accurate understanding of junior enterprises role in

stimulating university entrepreneurship. Stimulating junior companies can be a fundamental action to implement an effective entrepreneurial education within HEIs, and this is valid for courses in all fields. In a practical context, as in a junior company, entrepreneurial education may motivate entrepreneurial intention.

This paper is organized in six sections, being this introduction the first one. Section 2 establishes relations between literature of entrepreneurial profile and entrepreneurial intention and the junior enterprise environment. Section 3 presents the research model and the study hypotheses. Section 4 presents the methodological aspects, discussed and analyzed in Section 5. Section 6 presents the final considerations, limitations and suggestions for further research.

2. Literature review

The literature review is structured in three fundamental topics for contextualizing the research. We begin by presenting the entrepreneurial profile and the main characteristics defining it. Subsequently, we address the main models used to measure entrepreneurial intention. Finally, we explore the environment of the junior enterprise, especially in Brazil.

2.1 Entrepreneurial profile

The entrepreneurial profile has been the focus of research aiming to identify characteristics and skills common to individuals who perform entrepreneurial activities (Moraes *et al.*, 2018). According to Salisu *et al.* (2020), this is an increasing interest especially in developing economies, and its purpose is to demonstrate which factors and characteristics may be linked to entrepreneurial efforts.

Amaral *et al.* (2018) state that some individuals are born with several traits considered entrepreneurial, whereas others develop them in a teaching/learning process. Regardless, it might be worth identifying characteristics and skills shared by individuals complying with entrepreneurial prerogatives (Iizuka & de Moraes, 2014; Rocha & Freitas, 2014).

Although several behaviors are associated with the entrepreneurial profile (Krakauer *et al.*, 2018), we delimited our scope to some behavioral characteristics (Table 1) established in previous studies (Krakauer *et al.*, 2018; Moraes *et al.*, 2018; Rocha & Freitas, 2014; Schmidt & Bohnenberger, 2009).

2.2 Entrepreneurial intention

Liu *et al.* (2020) state that entrepreneurial intention is influenced by several factors, such as individual profile and demographic aspects. Accordingly, Shi *et al.* (2020) state that such intention is underlined by many determinants and is the main factor influencing entrepreneurship, despite not necessarily resulting in an entrepreneurial activity *per se* (Aleksandrova *et al.*, 2020).

Aleksandrova *et al.* (2020) understand that the decision to become an entrepreneur is a personal choice that results from a set of other intentions formed within economic, historical, cultural and institutional contexts specific to every country.

Studies such as those conducted by Shapero and Sokol (1982) and Ajzen (1991) are seminal for understanding that intentions reflect motivational factors influencing entrepreneurial behavior and shaping its planning, so that the stronger the intention to display a behavior, the greater its probability of being displayed (Aleksandrova *et al.*, 2020). Therefore, these authors postulate that intentions produce the entrepreneurial behavior.

According to Ajzen (1991), intentions result from attitudes (individuals' attitudes toward behavior); subjective norms (norms and expectations of society in relation to their behavior);

Table 1.
Behavioral
characteristics of
entrepreneurial profile

Characteristics	Explanation of the indicator	References
Self-efficacy (SE)	It is the cognitive estimation that a person has to intentionally achieve results. It concerns the ability to mobilize motivation, cognitive resources, and courses of action required to exercise control over events in your life	Moraes <i>et al.</i> (2018); Rocha and Freitas (2014); Schmidt and Bohnenberger (2009)
Leadership (LE)	People who, based on their own goal, influence others to voluntarily adopt this goal	Krakauer <i>et al.</i> (2018); Moraes <i>et al.</i> (2018); Rocha and Freitas (2014); Schmidt and Bohnenberger (2009)
Planner (PL)	People who organize and prepare themselves to achieve a future goal. It concerns people who anticipate the facts and have a future vision of the organization	Krakauer <i>et al.</i> (2018); Moraes <i>et al.</i> (2018); Rocha and Freitas (2014); Schmidt and Bohnenberger (2009)
Innovative (IN)	People who relate ideas, facts, needs and market demands in a creative way	Moraes <i>et al.</i> (2018); Rocha and Freitas (2014); Schmidt and Bohnenberger (2009)
Takes calculated risks (TR)	People who, in the face of a personal project, relate and analyze variables that can influence its result, deciding, upon this, on the continuity of the project. It refers to individuals able to intelligently take risks, to act quickly and efficiently to adapt to the continuous changes in the economic environment	Moraes <i>et al.</i> (2018); Rocha and Freitas (2014); Schmidt and Bohnenberger (2009)
Sociability (SO)	Degree of use of social networks to support the professional activity	Krakauer <i>et al.</i> (2018); Moraes <i>et al.</i> (2018); Rocha and Freitas (2014); Schmidt and Bohnenberger (2009)

Source: Prepared by the authors

and from the perceived behavioral control (perceived facility with which individuals believe a behavior can be successfully displayed).

Although entrepreneurial behavior is also a product of effectuation, we understand entrepreneurial intention as associated with the planned decision of running a business, the propensity to act accordingly, and the individual perception of how attainable the objectives are. (Aleksandrova *et al.*, 2020).

Thus, we present the first research hypothesis:

H1. The entrepreneurial profile positively influences the entrepreneurial intention.

2.3 Junior enterprise environment

Universities play a key role in teaching, research and extension (Moraes *et al.*, 2018). According to Rocha and Freitas (2014), entrepreneurial education comprises three pillars: developing an entrepreneurial spirit among students; training students to start and manage a business; and developing entrepreneurial skills required to identify and explore business opportunities. Therefore, entrepreneurial education takes different forms and encompasses multiple contents in the learning process, requiring different pedagogical initiatives, such as extension activities.

Extension activities include several activities that allow students to practice entrepreneurship, such as lectures, events, business incubators, junior companies and other student organizations (Moraes *et al.*, 2018).

In this context, the junior enterprise excels. According to the Brazilian Law No. 13,267, junior enterprise are entities managed by undergraduate students aiming to conduct projects and services that contribute to the academic and professional development of associates, training them for the labor market. It is a relevant alternative for students to practice their knowledge and exercise entrepreneurship:

Art. 5th. The junior enterprise, whose purposes are educational and nonprofit, shall have, in addition to other specific purposes, the following objectives:

I – to provide its members with the necessary conditions for the practical application of theoretical knowledge related to the respective area of professional training, offering them the opportunity to experience the labor market during their training for the exercise of the future profession and stimulating their critical, analytical, and entrepreneurial spirit; [. . .] (Brasil, 2016).

As a pedagogical practice of entrepreneurship education, junior enterprises are a valid teaching strategy owing to its fomenting nature; besides stimulating students' entrepreneurial spirit (Almeida *et al.*, 2019). These practices endow students with "know-how," so that their behavior corroborates the knowledge, skills and attitudes forming the entrepreneurial subject (Almeida *et al.*, 2019; Rocha & Freitas, 2014).

Thus, we present the second, third and fourth research hypotheses:

- H2.* Participating in the junior enterprise environment positively influences entrepreneurial profile.
- H3.* Participating in the junior enterprise environment positively influences entrepreneurial intention.
- H4.* The entrepreneurial profile characteristics of students who participated in junior enterprises exerted different influence on their entrepreneurial intention in relation to those who did not participate.

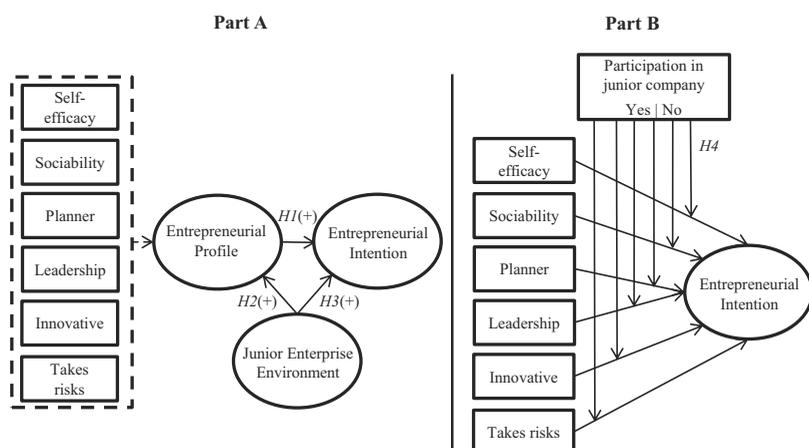
3. Conceptual model

Based on the literature review, we elaborated a model (Figure 1) and formulated hypotheses to answer the research objective. With that, we aim to understand how the junior enterprise environment influences the entrepreneurial profile and entrepreneurial intention of university students and how the entrepreneurial behavior of students who participated in junior enterprises differ from those who did not.

As the entrepreneurial profile is a hierarchical latent variable, i.e. a second-order construct, the relationships between its forming constructs are not presented as a hypothesis. Operationalization-related details of this construct are presented in the methodological section.

The presented model was based on the construction of an entrepreneurial profile (Schmidt & Bohnenberger, 2009; Rocha & Freitas, 2014; Moraes *et al.*, 2018; Krakauer *et al.*, 2018) that positively influences entrepreneurial intention (Moraes *et al.*, 2018; Krakauer *et al.*, 2018) and Junior enterprise environment. In turn, the junior enterprise environment is based on the university environment construct (Moraes *et al.*, 2018, 2020), which positively influences entrepreneurial profile and intention (Saeed *et al.*, 2015; Turker & Selcuk, 2009; Moraes *et al.*, 2018).

Besides the three hypotheses presented in Part A of the conceptual model, Part B presents a fourth hypothesis (*H4*). In *H4*, we analyze, by a multigroup analysis (Hair *et al.*, 2018), whether the entrepreneurial profile characteristics of students who participated in junior enterprises exert different influence on entrepreneurial intention in relation to students who did not participate in junior enterprises.



Source: Prepared by the authors

Figure 1.
Conceptual research models

Some indicators used in the questionnaire (self-efficacy, risk-taking, innovation, leadership, planning and sociability) consisted in validated scales of the research conducted by Rocha and Freitas (2014) and Schmidt and Bohnenberger (2009). Questions about entrepreneurial intention were adapted from Liñán and Chen (2009) and Saeed *et al.* (2015). The junior enterprise construct was mainly based on the studies of Schwarz *et al.* (2009), Saeed *et al.* (2015) and Moraes *et al.* (2018).

Experts in entrepreneurship and structural equation modeling assisted in preparing the conceptual model and validating the questionnaire.

4. Methodological aspects

We adopted a quantitative methodology, using structural equation modeling, to predict and explain the presented constructs. The proposed conceptual model has a hierarchical latent variable, which justifies the choice of the Partial Least Squares Structural Equation Modeling (PLS-SEM), according to the suggestions of Hair *et al.* (2017). Another reason for using the PLS-SEM is the fact that the model comprises reflective and formative measures (Hair *et al.*, 2017).

Junior enterprises throughout the country were surveyed; among the 140 enterprises identified, 56 answered the research questions.

The sample included companies from all regions of Brazil: 59% were from southeastern states (Espírito Santo, Minas Gerais, Rio de Janeiro and São Paulo); 18%, from the South (Paraná, Rio Grande do Sul and Santa Catarina); 14%, from the Northeast (Bahia, Ceará, Pernambuco, Piauí and Rio Grande do Norte); 7%, from the Midwest (Federal District, Goiás and Mato Grosso do Sul); and 2%, from the North (Amazonas).

Based on the literature data, we developed a questionnaire to measure entrepreneurial profile, entrepreneurial intention and the contribution of the participation in junior enterprises by selected indicators. Given that some of the indicators used in the questionnaire were adapted by the researchers and others were extracted from the literature, a confirmatory factor analysis (CFA) was performed to confirm that the selected items would provide sufficient

measures for the proposed constructs. The indicators were linked to loadings in their respective construct and were tested on the same model (Brady & Cronin, 2001).

Initially, all measurements with factor loadings greater than 0.7 were maintained and measurements with factor loadings below 0.4 were excluded (Hair *et al.*, 2017). Measurements between 0.4 and 0.7 were analyzed according to the impact on average variance extraction (AVE) and composite reliability (CR). In this sense, only the SE2 indicator had to be excluded. Table 2 shows the CFA results and descriptive analyses.

Sample size and statistical power were analyzed using the G*Power 3.1 software (Faul *et al.*, 2009), and the minimum sample size calculated was 98. The final sample consisted of 549 respondents (287 students participating in Junior Enterprises and 262 nonparticipants), appropriate for estimation using PLS-SEM. The *post hoc* analyses showed that: any r^2 higher than 2.45% would be considered significant; and the power for average effect size is 0.999.

Data was collected using a questionnaire with closed-ended questions (Table 4) and a five-point Likert scale. The online version of the questionnaire was made available by the Qualtrics platform for all 140 registered companies, from its own database, via email, social networks and website.

The questionnaire was applied with the aid of important partners: State Federations of Junior Enterprises; Junior enterprises and entrepreneurs; and National Association of Undergraduate Programs in Business (*Associação Nacional dos Cursos de Graduação em Administração* – ANGRAD).

The SmartPLS 3.0.M3 software (Ringle & Becker, 2015) was used to estimate and validate statistical tests developed by the structural equation modeling.

5. Description and analysis of results

Among the 549 respondents, 287 were junior entrepreneurs working in 56 companies across the country. The most representative states were São Paulo (29%), Minas Gerais (25%), Santa Catarina (9%), Rio de Janeiro (8%) and Amazonas (5%). In total, 52% of the respondents were women and 48% men and most of them reported being single (97%). Regarding age, 39% of the sample was composed of students aged up to 19 years; 44% of those aged between 20 and 22; and the remaining (17%) were older than 23 years.

As for the period participating in the junior enterprise, 37% of the students have been working for less than 6 months; 27% between 6 months and 1 year; 27% between 1 and 2 years; and 9%, for more than 2 years.

Only 67 students reported not having participating in the aforementioned activities before joining the junior enterprise, corroborating the idea that a more diversified set of performed activities increases the student's entrepreneurial potential. In addition, 38% of the students did some kind of volunteer work and 51% had worked in a family, third-party or self-employed company.

For analyzing the results, we initially considered only respondents who participated in junior enterprises. Respondents who did not participate comprised a control group to validate the multigroup analysis (H4), presented in the final part of the section. Nonparticipants did not have to answer the part of the questionnaire concerning junior enterprises.

The cross-loadings of each indicator were analyzed to verify whether indicators associated with each construct really reflect their concept (Hair *et al.*, 2017).

For indicators to be maintained in the model, their factor loadings must be higher than or equal to 0.7 and higher than other constructs cross-loadings (Hair *et al.*, 2017). Factor loadings lower than 0.4 caused the indicator to be automatically excluded, as occurred with SE2, SE3 and PL1 indicators. As LE1 presented factor loading lower than 0.7 but higher than 0.4, we considered Hair *et al.* (2017) suggestion to analyze how the indicator exclusion would impact

Questions	Standardized path loading	Mean	SD	Critical ratio	P-value
<i>Leadership</i>					
(LE1) I am often chosen as the leader in school or professional activities	0.653	3.815	0.976	10.087	0.000
(LE2) People respect my opinion	0.691	4.171	0.753	13.083	0.000
(LE3) I can convince people to overcome conflicts and work as a team aiming to achieve a certain result	0.767	3.986	0.779	22.176	0.000
(LE4) I can encourage people to do tasks for which they are demotivated	0.693	3.739	0.850	13.997	0.000
<i>Planner</i>					
(PL1) I always plan very well everything I do	0.679	3.512	1.049	5.230	0.000
(PL2) I define where I want to be and detail all the steps I must take	0.842	3.432	1.083	12.644	0.000
(PL3) I know I can define my directions in short, medium and long-term	0.719	3.648	1.032	9.095	0.000
(PL4) I like setting objectives and goals to feel challenged	0.667	3.843	1.005	7.128	0.000
<i>Innovative</i>					
(IN1) I prefer a work full of novelties to a routine activity	0.734	4.233	0.925	15.561	0.000
(IN2) I like changing my way of working whenever possible	0.761	3.746	1.006	20.135	0.000
(IN3) I like improving the conventional and correct way of performing activities, not strictly following steps	0.731	3.564	1.060	16.632	0.000
(IN4) I bet on creativity when carrying out projects/activities	0.719	4.035	0.925	18.132	0.000
<i>Takes risks</i>					
(TR1) I would owe a long-term debt, believing in the advantages that a business opportunity would bring me	0.716	3.254	1.124	14.402	0.000
(TR2) I admit taking risks in exchange for possible benefits	0.808	3.746	0.927	27.705	0.000
(TR3) My decisions are not predominantly based on my comfort zone	0.650	3.746	0.942	11.808	0.000
(TR4) I believe that getting involved in higher-risk situations will lead to more impressive results	0.668	3.895	0.979	13.16	0.000
<i>Sociability</i>					
(SO1) The social contacts I have are very important to my personal life	0.728	4.23	0.857	14.804	0.000
(SO2) I know a lot of people who could help me professionally in case I needed to	0.728	4.024	0.979	17.124	0.000
(SO3) I relate very easily to other people	0.692	3.997	0.979	14.145	0.000
(SO4) I try to maintain regular contact with the people in my network of relationships	0.732	3.693	0.965	15.193	0.000
<i>Self-efficacy</i>					
(SE1) I believe I have a good ability to identify business opportunities in the market	0.734	3.456	0.837	20.419	0.000
(SE3) Professionally, I consider myself a much more persistent person than the others	0.577	4.519	0.607	6.124	0.000
(SE4) When I am faced with a problem, I can usually find several solutions	0.638	3.871	0.831	11.248	0.000

(continued)

Table 2.
Standardized CFA path loadings and descriptive statistics

Questions	Standardized path loading	Mean	SD	Critical ratio	P-value
(SE5) I can solve most problems if I devote the necessary effort	0.792	3.756	0.763	25.309	0.000
<i>Entrepreneurial Intention</i>					
(EI1) I am ready to do anything to be a businessman	0.755	3.418	1.159	23.598	0.000
(EI2) I will make every effort to create and maintain my own company	0.901	3.477	1.311	72.745	0.000
(EI3) Even if I work for other companies, I will never abandon my dream of starting my own business	0.887	3.24	1.387	60.242	0.000
(EI4) My greatest accomplishment will be having my own business	0.895	2.895	1.483	58.261	0.000
(EI5) I intend to start a business in the next few years	0.865	3.000	1.528	49.660	0.000
<i>Junior Enterprise Environment</i>					
(JEE1) The Junior Enterprise helped me to detect business opportunities and be persistent	0.748	4.303	0.734	27.840	0.000
(JEE2) I developed my leadership skills through group work in the Junior Enterprise	0.750	4.509	0.683	22.050	0.000
(JEE3) The Junior Enterprise provided me with planning and strategy tasks in different disciplines, thus developing my ability to plan	0.757	4.484	0.662	21.301	0.000
(JEE4) I improved my creativity and ability to innovate with the Junior Enterprise.	0.720	4.286	0.748	18.944	0.000
(JEE5) The Junior Enterprise enabled me to relate and analyze the variables that influence the outcome of a problem, increasing my ability to take calculated risks	0.789	4.258	0.753	33.244	0.000
(JEE6) The Junior Enterprise provided me with several important contacts in person and professional terms	0.675	4.439	0.705	14.671	0.000
(JEE7) The Junior Enterprise motivated me to want to start my own business	0.547	3.871	0.952	10.244	0.000

Table 2. Source: Prepared by the authors

the average variance extracted (AVE) and composite reliability, which led us to exclude the LE1 indicator as well.

Our research model presents a hierarchical latent variable (entrepreneurial profile). Hierarchical latent variable models are characterized by the number of levels in the model and by the relationships between its constructs (Becker, Klein, & Wetzels, 2012). A second-order construct is a general concept that is formed (formative) or represented (reflective) by first-order constructs. Therefore, the relationship between second- and first-order constructs is not of dependence, but rather of hierarchy, as the second-order construct does not exist without the first-order constructs (Becker *et al.*, 2012).

In our research model, the entrepreneurial profile is a second-order construct (higher-order constructs – HOCs) formed by the first-order constructs (lower-order constructs – LOCs) self-efficacy, risk-taking, innovation, leadership, planning and sociability. Because of the characteristic of the model, the two-stage approach was adopted to estimate the parameters (Hair *et al.*, 2018), which was performed with the aid of the SmartPLS 3.0.M3 software (Ringle & Becker, 2015).

In this approach, analyses are separated into two stages: ideally, for the first one, the repeated indicator approach should be used to obtain constructs scores (Hair *et al.*, 2018), which were tabulated as additional variables for further analysis in the second stage; in the

second stage, the LOCs scores obtained in the previous stage were used as indicators for HOCs (Hair *et al.*, 2018).

Our research model has two formative indicators (entrepreneurial profile and junior enterprise) and one reflective indicator (entrepreneurial intention), so that each indicator will be evaluated according to appropriate criteria.

According to Hair *et al.* (2017), the evaluation criteria for the formative model are: convergent validity, multicollinearity analysis and significance and relevance.

Convergent validity was assessed by redundancy analysis, which correlated the formative construct variables with a global measure of the indicator. The constructs were modeled as independent variable and the global measure as dependent variable (Hair *et al.*, 2017). Path coefficient above the threshold value of 0.80 supports the formative construct convergent validity. The path coefficient for the entrepreneurial profile construct was 0.805 and for the junior enterprise construct 0.813, supporting their convergent validity.

The variance inflation factor (VIF) of the formative constructs variables was analyzed to test the collinearity of indicators, showing values within those established by Hair *et al.* (2017) – lower than 5.

Significance and relevance were analyzed using the bootstrap method, and all indicators showed significance according to the T-statistic of outer weights, being maintained in the constructs (Hair *et al.*, 2017).

Reflective models were analyzed based on the internal consistency, indicator reliability, convergent validity and discriminant validity (Hair *et al.*, 2017).

Discriminant validity and convergent validity were evaluated at the level of indicators and latent variables (Hair *et al.*, 2017). After the dimensional analysis, all indicators remaining presented factor loadings higher than 0.70 in their latent variables (convergent validity) and low factor loadings in other latent variables (discriminant validity).

The AVE was also used in the model convergent validity, which must present a value greater than 0.5 (Hair *et al.*, 2017).

Each construct composite reliability is one of the measures used to evaluate the measurement model (Hair *et al.*, 2017). Composite reliability describes the degree to which indicators represent a common latent construct, and 0.70 is a commonly used reference value to indicate acceptable reliability.

The construct internal consistency was analyzed using Cronbach's alpha, whereby a high value indicates that all variables represent the same latent construct. For exploratory studies, values between 0.60 and 0.70 are considered acceptable (Nunally & Bernstein, 1994; Hair *et al.*, 2017).

Yet another criterion to discriminate validity is calculating the square root of AVE and comparing it with the correlation among latent variables (Fornell & Larcker, 1981).

Table 3 shows all indicators, within the values established by the authors. The square root of AVE is shown diagonally, in bold.

The structural model was analyzed by collinearity, based on the tolerance analysis and VIF. All tolerance values were above 0.2 and VIF below 5 (Hair *et al.*, 2017).

Indicators significance was analyzed based on a modeling estimate using the bootstrap method (Efron & Tibshirani, 1998), which also estimates parameter and their confidence intervals based on multiple estimates (Hair *et al.*, 2017).

According to the Student's *t*-test (*t*-values) hypothesis, correlation coefficients are equal to zero. All values of the relationships presented Student's *t*-values higher than 1.96 (5% significance level).

The coefficient of determination (R^2) was evaluated based on a study conducted by Cohen (1988), whereby R^2 equal to 2% is considered small effect sizes, 13% medium and 25% are large.

The entrepreneurial intention construct showed R^2 equal to 0.385, considered high, and the entrepreneurial profile construct showed R^2 equal 0.224, also considered high. Figure 2 presents the resulting model.

The Q^2 value, an indicator of the model predictive relevance, was also assessed. Q^2 values higher than zero for a specific endogenous latent variable demonstrate relevance of the SEM path model. All values are considered adequate.

A multigroup analysis was conducted to test our study hypothesis regarding the difference in the relationships between the entrepreneurial profile characteristics of students who participated in junior enterprises and their entrepreneurial intention when compared to those who did not participate.

Table 4 shows the results regarding significant construct relationships between groups of respondents who participated and who did not participate in a junior enterprise (Figure 1 shows the Part B of the conceptual model).

Constructs	Junior enterprise	Entrepreneurial intention	Entrepreneurial profile
Junior enterprise	Formative		
Entrepreneurial intention	0.475	0.863	
Entrepreneurial profile	0.474	0.581	Formative
Cronbach's alpha	Formative	0.913	Formative
Composite reliability	Formative	0.936	Formative
Average variance extracted	Formative	0.745	Formative

Source: Prepared by the authors

Table 3. Synthesis of the evaluation of the measurement model

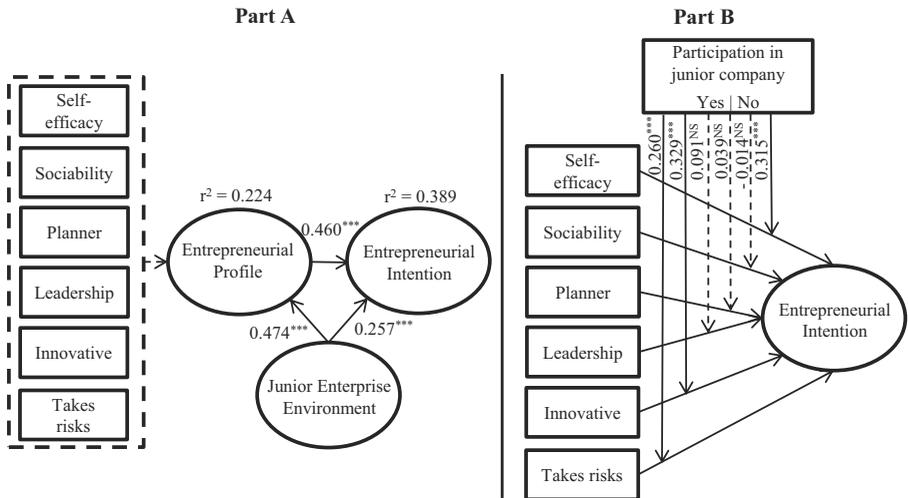


Figure 2. Models resulting from the research

Notes: NS = Nonsignificant; * = Significant at 5%; ** = Significant at 1%; *** = Significant at 0.1%

Source: Prepared by the authors

Table 4 data enable us to verify significant differences in the relationships between self-efficacy, innovation and risk-taking toward entrepreneurial intention, positively greater for students who participated in the junior enterprise. In turn, leadership, planning and sociability indicators showed no significant differences between groups regarding Entrepreneurial Intention.

Table 5 shows the synthesis of the hypothesis testing.

6. Discussion

This research sought to analyze the influence of participating in a junior enterprise on the entrepreneurial profile and entrepreneurial intention of university students, as well as the difference in the entrepreneurial behavior of students who participated and students who did not participate in these.

The university environment is an important factor in stimulating student entrepreneurship (Moraes *et al.*, 2020). This is owing to the fact that universities mobilize infrastructure, mechanisms and programs to encourage entrepreneurship in the academic community (Guerrero *et al.*, 2018), including supporting junior companies (Johansen, 2016; Grewe & Brahm, 2020). Within this context, this study presents a robust and consistent model with a high explanatory power of the entrepreneurial profile and entrepreneurial intention constructs, confirming a positive influence of the junior enterprise environment on the development of these characteristics. We also found participating in a junior enterprise to foster the development of certain entrepreneurial characteristics.

Relationships	Difference in coefficients (JE vs NJE)		P-value
Self-efficacy → entrepreneurial intention	0.315		0.000
Sociability → entrepreneurial intention		-0,014	0.857
Planner → entrepreneurial intention	0.039		0.575
Leadership → entrepreneurial intention	0.091		0.217
Innovative → entrepreneurial intention	0.329		0.000
Takes risks → entrepreneurial intention	0.260		0.001

Notes: JE: Junior enterprise participants; NJE: Nonparticipants of junior enterprises
Source: Prepared by the authors

Table 4.
Analysis of relationships per differentiation of participation or not in junior enterprises

Hypotheses	Description	Result
H1	The Entrepreneurial Profile positively influences the Entrepreneurial Intention	Confirmed
H2	Participation in the Junior Enterprise Environment positively influences the Entrepreneurial Profile	Confirmed
H3	Participation in the Junior Enterprise Environment positively influences the Entrepreneurial Intention	Confirmed
H4	There are differences in the influence of the characteristics of Entrepreneurial Profile on Entrepreneurial Intention between students who participated and students who did not participate in junior enterprises	Partially confirmed

Source: Prepared by the authors

Table 5.
Synthesis of results of the study hypotheses

The results obtained from data on all regions of a developing country enable us to present two main contributions. *First*, that participating in junior enterprises influences the development of students' entrepreneurial profile more than their entrepreneurial intention. Our results show that participating in junior enterprises influence both entrepreneurial profile and intention, but its influence on entrepreneurial profile is more considerable. This is an important contribution for demonstrating that junior companies are fulfilling their role in the professional development and training of associates for the labor market (whether on their own business or not), stimulating students' entrepreneurial spirit (Almeida *et al.*, 2019).

The *second* contribution is to present which behavioral characteristics are mostly developed by participating in a junior enterprise. The most developed characteristic is that related to innovation, creatively relating idea, facts, needs and market demands. The second most developed characteristic is self-efficacy, increasing the ability to mobilize motivation, cognitive resources and courses of action required to exercise control over life events. Finally, the ability to take risks was also greatly developed, improving the ability to analyze variables that can influence decisions.

Students who participate in junior enterprises often present a strong entrepreneurial motivation. However, some of the students in our sample had no intention to become an entrepreneur despite participating in a junior enterprise. This finding highlights the need for a company to have people with different profiles and skills, complementing each other.

We believe our study to contribute in advancing knowledge about entrepreneurial behavior, as well as about Brazilian junior enterprises, increasingly growing in the universities of the country. From a practical perspective, we sought to provide HEI with a more accurate understanding of the role of junior enterprises in stimulating university entrepreneurship, as well as raise junior enterprises and entrepreneurs' awareness for management-related and self-knowledge purposes. Our results reinforce that stimulating junior companies can be a fundamental action for implementing an effective entrepreneurial education within the HEIs, and this is valid for courses in all fields, as multidisciplinary teams in junior companies approach the labor market reality (Barba-Sánchez & Atienza-Sahuquillo, 2018). In this sense, Piperopoulos and Dimov (2015) argue that teaching entrepreneurship in a theoretical context may reduce entrepreneurial intention, although increasing student self-efficacy; in turn, in a practical context – as in the case of a junior company – it may increase such intention.

7. Conclusions

The junior company movement emerged as a way to assist entrepreneurial learning and increase entrepreneurship among students, with new job prospects for students from all fields of expertise (Barba-Sánchez & Atienza-Sahuquillo, 2018). Being immersed in commercial initiatives to improve productivity in the workplace and career options, learning the role of economics in society, is convenient for any student (Violante & Vezzetti, 2017). Thus, the experience as junior entrepreneurs make future employees more capable of taking advantage of opportunities and establishing a social or commercial activity, besides increasing awareness about their role in the global context and in the labor market (Barba-Sánchez & Atienza-Sahuquillo, 2018).

This research fills a knowledge gap regarding uncertainty of entrepreneurial education efficiency in developing students' entrepreneurial behavior and intention (Shi *et al.*, 2020) in the context of the junior company as part of entrepreneurial education within the university, presenting a robust quantitative method and a large sample in a developing country.

Our study has some limitations, such as the use of a questionnaire with perceived conditions and self-assessment indicators, which may present biased results. Data was collected by a single cross-sectional research design, which makes it difficult to analyze how the association between variables of interest evolves over time. Moreover, we did not use a probabilistic sampling as research scope.

We suggest further studies to be conducted longitudinally, addressing the relationship between junior enterprise environment and entrepreneurial behavior, considering differences in regions, gender or academic courses within the research context and conducting a qualitative research with junior companies' participants.

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