SELF-EFFICACY AND ENTREPRENEURIAL CHARACTERISTICS INFLUENCE ON ENTREPRENEURIAL INTENTION: WHICH ONE FITS BETTER?

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Abstract: This study sought to identify what is the behavioral aspect (self-efficacy or entrepreneurial characteristics) that fits better in entrepreneurship intention model. Two models were developed to assess both behavioral aspects and their relationship with entrepreneurial intention using entrepreneurial education as a control variable. Quantitative methodology was employed, and data was analyzed by Structural Equation Models using the Partial Least Squares (PLS-SEM) technique. The sample consisted of 1,004 Brazilian university students, from public and private universities located in two states. The results indicate that entrepreneurial characteristics is a better explanation to entrepreneurial intention models, when compared to self-efficacy; also, entrepreneurial characteristics represent a more sensitive model, which brings accurate assessments on factors that affects entrepreneurial intention. The research brings complementary understanding on entrepreneurial intention influencers and provides further comprehension in the relationship of behavioral aspects and entrepreneurial intention.

Keywords: Self-efficacy. Entrepreneurial Characteristics. Entrepreneurial Intention. Entrepreneurial Education.

1 Introduction

Entrepreneurial intention have been consistently approached as a relevant construct in entrepreneurship research, as shown by Landström and Harirchi (2018) and Lopes and Lima (2019), since it may predict future entrepreneurial activity, even in long term prospects (Liñán & Fayolle, 2015). Additionally, the investigation interest reflects on entrepreneurial intention's antecedents, and on the potential of understanding entrepreneurial behavior (Moraes, Iizuka, & Pedro, 2018).

Entrepreneurial intention is closely related to entrepreneurship behavior and its determinants may be affected by several factors (Koe, Sa'ari, Majid, & Ismail, 2012; Zhao, Seibert, & Lumpkin, 2010), such as knowledge, experience (Koe et al., 2012), and behavioral aspects (Saeed, Yousafzai, Yani-De-Soriano, & Muffatto, 2015). In specifics, findings have explored behavioral aspects into two paths: entrepreneurial self-efficacy (Asimakopoulou, Hernández, & Peña Miguel, 2019; Zhao, Hills, & Seibert, 2005) and entrepreneurial characteristics (Krakauer, Moraes, Coda, & Berne, 2018; Moraes et al., 2018; Vodă & Florea, 2019).

Entrepreneurial Self-Efficacy refers to the individual's belief regarding his or her skills, abilities and resources to perform a specific task (Atiya, Bilal, Abulhamid, & Shoaib, 2019), in this context it reflects one's difficulty or easiness to carry out a certain action, such as create a company (Asimakopoulou et al., 2019). Also, many studies have shown that a high self-efficacy belief translates into a greater entrepreneurial intention (Lüthje & Franke, 2003; Pittaway & Edwards, 2012).

Likewise, entrepreneurial characteristics relate to a common set of characteristics and competencies that individuals have and may drive one to entrepreneurship (Moraes et al., 2018). Many behaviors are associated with entrepreneurial characteristics (Krakauer et al., 2018), but for this study it is prioritized: risk taking, planning, opportunity recognition, persistency, sociability, innovation and leadership. These personal-level variables are perceived as the elements that set entrepreneurs apart from non-entrepreneurs (Bignotti & Le Roux, 2016).

Research on entrepreneurial self-efficacy demonstrates it as a leading meta-approach to entrepreneurship that assists on the understanding of entrepreneurial behavior. It is seen as a key construct that influences entrepreneurial motivation, intention and behavior, as well as being a critical target outcome of entrepreneurship education (Miao, Qian, & Ma, 2017; Newman, Obschonka, Schwarz, Cohen, & Nielsen, 2019). In contrast, entrepreneurial characteristics' research is conducted as a behaviorist view of entrepreneurship, where it is based on or associated with entrepreneurial intention (Bignotti & Le Roux, 2016). Thus, this research questions *what's the behavioral aspect that fits better in entrepreneurship intention models?*

Forasmuch, this research aims at identifying whether self-efficacy and entrepreneurial characteristics (e.g. risk taking, planning, opportunity recognition, persistency, sociability, innovation and leadership) differ in explaining entrepreneurship intention models. Additionally, entrepreneurial education was used as a control variable in a multigroup analysis, since it influences both entrepreneurial intentions and behavior (Vodă & Florea, 2019).

This research considered university students, from public and private education institutions, located in two states. The choice of Brazilian university students relates to: (i) the support and promotion received by university may increase student's entrepreneurial intention in the same proportion (Asimakopoulos et al., 2019), and (ii) the conduction in a resource constrained reality might provide different results from previous studies in developed countries (Moraes et al., 2018).

2 Entrepreneurial Intention

Entrepreneurial intention (EI) is the connection between ideas and action. It is the state of mind that directs a person toward a specific goal (Saeed et al., 2015). Also, it is the predisposition of conscience to a certain action, it relates to the passage from the formation of intention to the manifestation of entrepreneurial behavior, which implies that individuals have hands-on knowledge, attitudes and complementary skills along the entire entrepreneurial process (Vodă & Florea, 2019).

EI is commonly explained by Ajzen's theory of planned behavior (TPB) and Shapero's model of entrepreneurial event (SEE). Ajzen (1991) states the more favorable the attitude and subjective norm, combined with a greater perceived behavioral control, the stronger is the individual's intention to initiate an organization. Meanwhile, Shapero and Sokol (1982, p. 99) establishes that "each entrepreneurial event is the endpoint of a process and the beginning of another", so SEE favors changes since entrepreneurship is a result of displacement, which is further boosted by the perceptions of desirability and feasibility. Both models present similarities and differences: TPB and SEE considered individual's willingness and desirability of starting a new business; but only SEE brought the propensity to act into account. Even though

these are well established models, they do not consider exogenous factors to entrepreneurship, such as the effect of education or the arise of an opportunity (Asimakopoulou et al., 2019; Sarasvathy, 2001)

In sum, entrepreneurial intention is considered as the first step into the process of venture creation, since intention is not action *per se*, it is a valuable predictor of behavior (Ajzen, 1991; Liñán & Chen, 2009).

2.2 Entrepreneurial intention influencers

Literature on entrepreneurship has expanded widely into sub-topics due to its eclectic nature, but it remains as a domain not clearly defined and rather fragmented (Landström & Harirchi, 2018). There are several studies pointing out the most influential factors to entrepreneurial intention. It seems EI is affected by endogenous factors, such as attitudes and perceptions (Koe et al., 2012; Liñán & Fayolle, 2015; Newman et al., 2019); as well as by exogenous factors such as the education an individual receive (Lüthje & Franke, 2003; Ozaralli & Rivenburgh, 2016; Peterman & Kennedy, 2003; Stamboulis & Barlas, 2014).

Moreover, when referring to behavioral aspects, literature hasn't reached a consensus of what variables should be considered (Bignotti & Le Roux, 2016; Krakauer et al., 2018), since some authors endorse the use of self-efficacy (Asimakopoulou et al., 2019; Miao et al., 2017; Newman et al., 2019; Zhao et al., 2005), while others entrepreneurial characteristics (Koe et al., 2012; Moraes et al., 2018; Rocha & Freitas, 2014; Vodă & Florea, 2019), when studying the personal-level characteristics that affect EI.

2.2.1 Entrepreneurial Self-Efficacy

Self-efficacy relates to the ability a person has to organize and effectively execute actions. It allows an individual to outperform those who are lower on this dimension, since they are motivated, regulated and directed by the ongoing exercise of self-efficacy (Markman & Baron, 2003). Thus, literature sees entrepreneurial self-efficacy (ESE) as a key theoretical approach to study entrepreneurial actions and beliefs, since it fosters entrepreneurial behavior through heightening an individual's entrepreneurial intentions (Newman et al., 2019).

In addition, prior studies have found that self-efficacy is a reliable predictor in educational settings (Atiya et al., 2019; Krakauer et al., 2018), since students participating in entrepreneurship courses present high entrepreneurial intent (Küttim, Kallaste, Venesaar, & Kiis, 2014). Also, by learning about entrepreneurship, students tend to develop their own strategies to maintain motivation and deal with future chances of success (Newman et al., 2019).

In this respect, universities can foster ESE out of the formal education programs context. Saeed et al. (2015) found that students' perception of educational support for entrepreneurship, support for business development, support for concept development, and institutional support for entrepreneurship were all positively related to their ESE.

Finally, the relationship between entrepreneurial self-efficacy, entrepreneurial intention and entrepreneurial education has found theoretical support in prior studies, but the specifics of how ESE affects individual's intention to pursue entrepreneurial projects is yet to be largely explored (Newman et al., 2019).

2.2.2 Entrepreneurial Characteristics

Prior studies regarding entrepreneurial characteristics are diverse and rich, however little has been made to consolidate the nomenclature (Moraes et al., 2018; Ozaralli & Rivenburgh, 2016; Zhao et al., 2005). Since the focus will not be on psychological level, but on the different aspects of how entrepreneurs conduct themselves (Filion, 1994), this study adopts the term entrepreneurial characteristics (ECs).

EC refers to a set of attitudinal characteristics an individual has that drives one to entrepreneurship more likely than others (Moraes et al., 2018). In this fashion, ECs represent the abilities and traits an entrepreneur needs to manage a project successfully (Atiya et al., 2019). However, scholars have established different and differentiated characteristics of entrepreneurs, thus the comprehensive review of characteristics and behavior of entrepreneurs is still under development and out of this study's scope (Atiya et al., 2019; Bignotti & Le Roux, 2016; Krakauer et al., 2018). Thereafter the following seven attitudinal characteristics (Table 1) represent some of the most commonly reported ECs.

Table 1. Entrepreneurial Characteristics

Attitudinal characteristics	Description	Conceptual basis
Risk-taking	People who, in the face of a personal project, list and analyze the variables that can influence its result, and from this decide the project continuity.	Caliendo and Kritikos (2011); Schmidt and Bohnenberger (2009).
Planning	People who organize the activities required to achieve a desired goal.	Schmidt and Bohnenberger (2009).
Opportunity recognition	People who identify, explore and act on business opportunities.	Markman and Baron (2003); Krakauer et al. (2018).
Persistency	People who work constantly, regardless of negative outcomes, to achieve own goals.	Markman and Baron (2003); Krakauer et al. (2018).
Sociability	Degree of social network use for professional activity support.	Markman and Baron (2003).
Innovation	People who apply new ideas, devices or methods.	Filion (1994); Schmidt and Bohnenberger (2009).
Leadership	People who, from their own goals, influence others to voluntarily adopt this goal.	Filion (1994)

Source: Adapted from Moraes et al. (2018); Schmidt and Bohnenberger (2009).

Risk-taking represents the inclination one has to perform certain activities, considering all relevant variables in order to stop, change courses or continue an entrepreneurial project (Caliendo & Kritikos, 2011; Schmidt & Bohnenberger, 2009). Schmidt and Bohnenberger (2009) defines planning as one's preparation for the future, which represents one's ability to organize oneself in order to achieve a desired goal. Studies have shown that opportunity recognition promotes entrepreneurial intention since it's connected to the stimulus configuration of opportunities (Krakauer et al., 2018; Markman & Baron, 2003).

Persistency is an important characteristic in the entrepreneurial context, since it is the ability to overcome several obstacles, make mistakes and persist until success is achieved, despite the numerous disincentives individuals face. (Krakauer et al., 2018; Markman & Baron, 2003). As established by Markman and Baron (2003), sociability represents social capital,

which refers to the talent an individual carry within oneself to reinforce institutional ties, social networks and contacts, as well as relationship with others.

Innovation corresponds to the ability to gather ideas, necessities and other demands in a creative manner (Filion, 1994; Schmidt & Bohnenberger, 2009) and; leadership, in an entrepreneurial context, relates to engaging others into pursuing one's vision and objectives, thus influencing others to adopt one's goal voluntarily (Filion, 1994; Krakauer et al., 2018).

These ECs are seen as an important predictor of entrepreneurial behavior, especially when considering the university context, as somewhat presented in Moraes et al. (2018). Given that ECs are amongst entrepreneurship's promising topics (Lopes & Lima, 2019) and its lack of consensus, further investigation on ECs is performed in this article.

2.3 Entrepreneurial education

There is a positive connection between entrepreneurial education (EE) and EI (Lüthje & Franke, 2003; Wibowo, Purwana, Wibowo, & Saptono, 2019), hence the education, amongst other factors, influences people's attitude toward entrepreneurship. Rönkkö and Lepistö (2015) defines entrepreneurial education as a learning by doing process, where the participation, interaction, decision-making and problem-solving skills of the students are developed. In addition, Peterman and Kennedy (2003) states that entrepreneurial education provides social experiences, such as opportunities to exercise significant responsibilities and to observe role models.

Entrepreneurship education is delineated in three objectives (i) learn about entrepreneurship to develop a broad understanding of it, (ii) learn for entrepreneurship to become entrepreneurial and (iii) comprehend how to be an entrepreneur through learning entrepreneurship (Pittaway & Edwards, 2012; Rönkkö & Lepistö, 2015). Broadly, Pittaway and Edwards (2012) explains that learning "about" entrepreneurship refers to more traditional educational practices, oriented to raise understanding or share knowledge. While "for" emphasizes tasks, projects and activities enabling students to acquire competences and key skills. Finally, "through" approach allows entrepreneurship practices in prudent conditions. In other words, entrepreneurial education reflects educator's efforts to intervene in students' lives in order to influence their entrepreneurial skills and qualities (Vodă & Florea, 2019).

Asimakopulos et al. (2019) state that EE favors entrepreneurship, in the sense that when taking an entrepreneurship course, the individual has a greater entrepreneurial intention. Moreover, according to the authors, if an individual feel remarkably capable of creating a company due to his/her trust in his/her skills for it, the knowledge gathered brings greater relevance to EI.

Notwithstanding, the impact of entrepreneurial education on the relationship between behavioral aspects and entrepreneurial intention still needs further investigation.

3 Conceptual Model and Study Hypotheses

From the literature review and formulation of the hypotheses, a model was elaborated to meet the research purpose (Figure 1), which aims to understand what's the behavioral aspect

that fits better in entrepreneurship intention models? Visual representation facilitates understanding of the theoretical model proposed (Whetten, 1989).

Figure 1. Conceptual Model of Research

Thus, the hypothesis proposed by the study is as follows:

H1. There are significant differences in key behavioral predictors of entrepreneurial intention.

H1a. Self-efficacy better explains entrepreneurial intention.

H1b. Entrepreneurial characteristics best explain entrepreneurial intention.

Entrepreneurial characteristics indicators (risk-taking, planning, opportunity recognition, persistency, sociability, innovation and leadership) used in the questionnaire were based on previous researches (Krakauer et al., 2018; Markman & Baron, 2003; Moraes et al., 2018; Rocha & Freitas, 2014; Schmidt & Bohnenberger, 2009). The questions regarding entrepreneurial intention were based and adapted from Liñán and Chen (2009), Moraes et al. (2018) and Saeed et al. (2015). Lastly, self-efficacy indicators had as its main references the study by De Noble, Jung and Ehrlich (1999).

4 Methodological Aspects

The empirical research was developed through quantitative methodology, with the use of multivariate data analysis. It was used Partial Least Squares-Structural Equation Modeling (PLS-SEM) in order to identify degrees of prediction and explanation of presented constructs. Also, one of the models present one hierarchical latent variable, where entrepreneurial

characteristics is a second order construct constituted by first order constructs (Hair et al., 2018). In this case, relations between the second orders constructs and the first order ones do not portray dependence, but hierarchy (Becker et al., 2012; Sarstedt et al., 2019), since the second order does not exist without the first order. Due to the conceptualization and operationalization of the hierarchical model, our research model is classified as a model of hierarchical latent variables of a reflexive-formative type (Chin, 1998; Becker et al., 2012; Sarstedt et al., 2019). First order constructs are reflexive, while second order is formative.

The Software SmartPLS 3.0 M3 (Ringle, Wende, & Becker, 2015) was used to calculate and validate the statistical tests, developed using the technique of structural equation by multivariate analysis.

5 *Results Description and Analysis*

The analysis of results is divided into five sections: sample aspect; self-efficacy measurement model evaluation; entrepreneurial characteristics measurement model evaluation; structural model evaluation; and evaluation of fit measures.

5.1 *Sample aspect*

The research was conducted in a non-probabilistic way and with a convenience sample, through personal interview with 1,004 university students. To evaluate the sample size and statistical power of the analysis, an evaluation with the G*Power 3.1 software (Faul et al., 2009) was conducted and based on the recommendations by Chin and Newsted (1999), Cohen (1988), and Hair et al. (2017). Considering seven predictors, a significance level of 5%, a statistical power of 0.8, and an average effect size ($f^2 = 0.15$, which is equivalent to $r^2 = 13\%$), the minimum size of the sample required is 103. As the final sample used comprised 1,004 people, it is suitable for estimation by Partial Least Squares Path Modeling (PLS-PM). The analyses a posteriori (post hoc) for the sample obtained indicate that: (a) any r^2 higher than 1.42% would be detected as significant, keeping the power of 0.8 and the significance level of 5%; and (b) to the average effect size the power is of 0.999, which is well above the value 0.8, recommended by Chin and Newsted (1999).

The sample comprised 58% of respondents from a private university, including 15 different courses. 53% were women, the average age was 22 years old and 92% were single.

5.2 *Self-Efficacy Measurement Model Evaluation*

Self-efficacy model presents two reflective constructs and the evaluated criteria were: internal consistency, composite reliability, convergent validity and discriminant validity (Ringle et al., 2015). Internal consistency was assessed by composite reliability that assesses whether the indicators associated with each construct actually represent them (Bagozzi & Yi, 1988). The composite reliability values should be at least 0.70 to indicate that the items are sufficient to represent their respective constructs (Hair et al., 2017). The average variance extracted (AVE) is one of the criteria for testing the convergent validity of a construct (Fornell & Larcker, 1981). AVE values higher than 0.50 are acceptable to indicate that a large amount

of the mean variance of the indicators is captured by each factor and not by the measurement error (Hair et al., 2011). All the mentioned values are within the ones established by the authors (Table 1).

Table 2 also presents the correlation between the latent variables and the square root of the average variance extracted, which is presented in bold on the diagonal. This value must be greater than the correlation between latent variables (Fornell & Larcker, 1981). According to the results, no correlation value between the latent variables is higher than the values of the square root of the extracted mean variance (diagonal), thus indicating that the values are adjusted.

Table 2. Summary of the Evaluation of Measurement – Self-Efficacy Model

Construct	Entrepreneurial Intention	Self-Efficacy	Composite Reliability	Average Variance Extracted (AVE)
Entrepreneurial Intention	0.840		0.923	0.705
Self-Efficacy	0.400	0.715	0.838	0.512

5.3 Entrepreneurial Characteristics Measurement Model Evaluation

Figure 2 presents the entrepreneurial characteristics research model, showing the two stages. Visual representation facilitates understanding of the theoretical model proposed (Whetten, 1989).

Figure 2. Entrepreneurial Characteristics Conceptual Model

Entrepreneurial characteristics model's parameters were estimated by the two stages approach (Becker et al., 2012; Hair et al., 2018; Sarstedt et al., 2019). In the first stage (Figure 2-A), the latent variable scores of first order constructs were obtained in a model that did not consider the second order construct. In the second stage (Figure 2-B), the latent variable scores obtained in the first stage were used as indicators for the second order construct. The two stages approach has the advantage of estimating a more parsimonious model, since there is no need to represent first order constructs (Hair et al., 2018; Sarstedt et al., 2019), besides being more adequate when the researcher's interest lies only on the relationships stating in the second order (Becker, et al., 2012; Sarstedt et al., 2019), which is the case of our model.

Table 3 presents the same indicators than Table 1, but for the first order analysis of the entrepreneurial characteristics model. All the mentioned values are within the ones established by the authors.

Table 3. Summary of the Evaluation of Measurement – Entrepreneurial Characteristics First Order Model

Constructs	RT	OR	EI	IN	L	PE	PL	SO	Composite Reliability	Average Variance Extracted
Risk-taking	0.731								0.774	0.534
Opportunity Recognition	0.262	0.766							0.849	0.586
Entrepreneurial Intention	0.435	0.372	0.84						0.923	0.706
Inovation	0.366	0.277	0.339	0.74					0.784	0.547
Leadership	0.312	0.287	0.279	0.372	0.712				0.802	0.507
Persistency	0.389	0.36	0.455	0.444	0.548	0.713			0.751	0.508
Planning	0.306	0.24	0.195	0.289	0.466	0.491	0.729		0.772	0.532
Sociability	0.282	0.33	0.219	0.321	0.528	0.481	0.394	0.721	0.765	0.520

The convergent validity, collinearity, statistical significance and relevance of the formative construct (entrepreneurial characteristics) were evaluated with SmartPLS 3 software (Ringle et al., 2015). This analysis is already part of the second stage. The convergent validity was estimated from the value of the formative construct's path coefficient. Path coefficient values greater than 0.8 provide support for the convergent validity of the formative construct (Hair et al., 2017). The value of the second-order level construct path coefficient, entrepreneurial characteristics, was 0.802, supporting the convergent validity of the construct. The value of the variance inflated factor (VIF) was used to assess the colinearity of the construct. If $0.2 < VIF < 5$ the collinearity of the construct is adequate (Hair et al., 2017). The VIF values for the constructs were within the acceptable range.

To evaluate the statistical significance of the entrepreneurial characteristics construct, the bootstrapping technique was used. Initially, the relative importance (outer weight coefficient) of each item was analyzed. When the relative importance is significant, there is empirical support for keeping the indicator in the model (Hair et al., 2017). Following the recommendations of Hair et al. (2017), all items were retained in the model.

5.4 Structural Model Evaluation

The structural models (Figure 1 and 2) were evaluated to provide consistent evidence that the self-efficacy and entrepreneurial characteristics positively influence entrepreneurial intention. The criteria used to evaluate the structural model were: collinearity, significant factor loadings, structural coefficients and coefficient of determination of the model (r^2).

To evaluate collinearity, the values of the variance inflated factor (VIF) for each subpart of the structural model were analyzed. All values are within the range established by Hair et al. (2017), being below 5.

The values of the significant factor loadings and the structural coefficients were obtained by the bootstrapping technique. For this, Student's t-statistical analyzes the hypothesis that the significance of path coefficients is equal to zero. Values of T-value higher than 1.96, at a significance level equal to 5%, reject the hypothesis and indicate that the path coefficients is significant (Efron & Tibshirani, 1998; Hair et al., 2017). Table 4 presents the T-values for the relationship in the models.

Table 4. Coefficients of the structural models – between constructs

Path	Sample Mean	Standard Deviation	T-Statistics	P-Values
Self-Efficacy -> Entrepreneurial Intention	0.401	0.028	14.228	0.000
Entrepreneurial Characteristics -> Entrepreneurial Intention	0.582	0.023	25.273	0.000

Results indicate that the relationship between self-efficacy and entrepreneurial intention and between entrepreneurial characteristics and entrepreneurial intention are significant. These results are in line with the entrepreneurial intention literature.

In order to test if the models are able to identify differences in groups of students who studied entrepreneurship subjects or not, a multigroup analysis was performed with both models.

Table 5 presents the analysis' results of the constructs' significant relationships among groups of respondents.

Table 5. Relationship analysis according to whether or not a student has taken entrepreneurship disciplines

Path	Self-Efficacy Model		Entrepreneurial Characteristics Model	
	Path Coefficients - difference (discipline - NO versus YES)	P-Values	Path Coefficients - difference (discipline - NO versus YES)	P-Values
Self-Efficacy -> Entrepreneurial Intention	0.043	0.210	-	-
Entrepreneurial Characteristics -> Entrepreneurial Intention	-	-	0.071	0.048

According to the results (Table 6) it is possible to affirm that there are significant differences in the relationships between the constructs just in the entrepreneurial characteristics

model. The effect is more strongly positively in the group that had not taken entrepreneurship disciplines.

To evaluate the coefficient of determination (r^2) we based our analysis on the studies of Cohen (1988) and Faul et al. (2007), which determine that f^2 values equal to 0.02, 0.15 and 0.35 are considered, respectively, as small, medium and large effects. These values of f^2 represent values of r^2 equal to 2%, 13% and 25%, respectively. According to the analyses, the entrepreneurial intention presented an r^2 of 0.160 in the self-efficacy model, considered medium, and an r^2 of 0.336 in the entrepreneurial characteristics model, considered large.

In addition to evaluate the magnitude of r^2 values as a criterion of predictive accuracy, the Q^2 value was also evaluated, which is an important indicator of the model's predictive relevance. When a PLS-SEM model has predictive relevance, it predicts accurately the data points of the indicators in reflective measuring models. Table 5 presents the values of r^2 , adjusted r^2 , and Q^2 .

Table 6. Results of the values of r^2 and Q^2

Construct	Self-Efficacy Model			Entrepreneurial Characteristics Model		
	R Square	R Square Adjusted	Q^2	R Square	R Square Adjusted	Q^2
Entrepreneurial Intention	0.160	0.159	0.104	0.336	0.335	0.221

The complete model resulting from both models are presented in Figure 3.

Figure 3. Complete empirical models

Note 1: * = significant at 5%; ** = significant at 1%; *** = significant at 0.1%; NS = not significant

5.5 Evaluation of fit measures

As a complement to the results, fit measures were also evaluated. Fit measures were used to analyze which the model fits better: the self-efficacy model with first order constructs or entrepreneurial characteristics model with first and second order constructs.

The tests were performed using the fit measures presented by SmartPLS 3 software (Ringle et al., 2015), namely: Standardized root mean square (SRMR); normal fit index (NFI) or Bentler-Bonett index; root mean square residual covariance (RMS_{θ}); exact model fit test (e.g., the squared Euclidean distance - d_{ULS} , the geodesic distance - d_G).

The SRMR is the squared discrepancy between the observed correlations and the model-implied correlations and it should be below 0.08 (Henseler et al., 2014). The NFI is the measures of the χ^2 value of the proposed model relative to the χ^2 value of the null model (Lohmöller, 1989) and it should be above 0.95 (Hu & Bentler, 1998; Byrne, 2016). The RMS_{θ} is measures of the degree to which the outer model residual correlate (Lohmöller, 1989) and it should be below 0.14 (Henseler et al., 2014). The exact fit test is the bootstrapping-based test for significant discrepancies between the observed and model-implied covariance matrices and the test should not be significant (Dijkstra & Henseler, 2015).

According to the results (see Table 7), the indicators are adequate from those established by the authors, except for the NFI for the self-efficacy model. Thus, it is possible to prove that the entrepreneurial characteristics model fits the data properly, and that its fit is slightly better than a model using only the first order level constructs.

Table 7. Evaluation of fit measures

Fit measures	Self efficacy model	Entrepreneurial characteristics model
SRMR	0.074	0.031
NFI	0.894	0.965
RMS_{θ}	0.146	0.140
d_{ULS}	0.303	0.076
d_G	0.076	0.051

According to the results presented, it is possible to state that the entrepreneurial characteristics construct fits better than the self-efficacy construct in entrepreneurial intention models. Thus, the main research hypothesis (H1) was confirmed, as well as H1b.

6. Final Remarks

This research focused on identifying what is the behavioral aspect (self-efficacy or entrepreneurial characteristics) that fits better in entrepreneurship intention model. Even though ESE has been traditionally established as a factor that best measures EI (Newman et al., 2019; Vodă & Florea, 2019), results demonstrated that ECs presented a higher influence on EI, when compared to ESE, which can be explained by the different attributes considered in ECs construct that, accurately, measures individual's entrepreneurial intention. This has been somewhat referred by Atiya et al. (2019).

Additionally, entrepreneurial education was used as a control variable in a multigroup analysis. Individuals that encountered entrepreneurial education and ones that didn't were assessed. When using the ECs models, the difference amongst these groups were demonstrated; which didn't happen in ESE model. Thus, ECs model is more sensitive to examine other factors that influence entrepreneurial intention.

This study contributes to the understanding of entrepreneurial intention's influencers and brings complementary reflections on entrepreneurship behavioral aspects and their relationship with EI. Regarding limitations of this study: a non-probabilistic sample was used; ECs literature is still evolving, thus there might be characteristics not considered in this research; only a post-test-study was conducted and testing students before and after the encounter with EE could bring more robust results; student's perception was assessed, so there is a subjectivity that needs to be considered; and, also, despite literature establishment of a connection between behavioral aspects and entrepreneurial intention, intentionality doesn't, necessarily, lead to actual behavior.

Besides the limitations, some possibilities for future research are: expand this line of research and consider other contextual factors to provide a more complete theoretical model to explain entrepreneurial behavior; validate the theoretical model presented with more focus groups; and, test the difference between groups (example: programs and genders).

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