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Student´s Entrepreneurial Intention in Higher Education at ISLA – Instituto Politécnico de Gestão e Tecnologia

Natália Costa[a], José Silva Neto[b], Carlos Oliveira[c], and Elisete Martins[d]*

[a] *ISLA – Instituto Politécnico de Gestão e Tecnologia, natalia.costa@islagaia.pt, Vila Nova de Gaia, Portugal*
[b] *ISLA – Instituto Politécnico de Gestão e Tecnologia, jose.neto@islagaia.pt, Vila Nova de Gaia, Portugal*
[c] *ISLA – Instituto Politécnico de Gestão e Tecnologia, miguel.oliveira@islagaia.pt, Vila Nova de Gaia, Portugal*
[d] *ISLA – Instituto Politécnico de Gestão e Tecnologia, elisete.martins@islagaia.pt, Vila Nova de Gaia, Portugal*

Abstract

This research examines the impact of subjective norm, perceived behavioral control (associated with the Theory of Planned Behavior), self-efficacy, and entrepreneurship education on the entrepreneurial intention of students in a higher education institution.

To measure the different constructs, a questionnaire was applied to 300 students and a structural equation model was used to validate the relationship between entrepreneurial intention and its determinants.

The results show a positive and significant relationship between entrepreneurial intention and three of the factors considered: subjective norm, perceived behavioral control, and entrepreneurship education. The relationship between self-efficacy and entrepreneurial intention did not prove to be statistically significant.

The conclusions of the study imply that the different organizations associated with the promotion and development of entrepreneurship should adopt a joint strategy to stimulate attitudes and behaviors, implementing educational programs that enhance the entrepreneurial spirit.

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Keywords: Entrepreneurship, Entrepreneurial Intention, Entrepreneurship Education, Theory of Planned Behaviour

* Corresponding author. Tel.: +0-000-000-0000 ; fax: +0-000-000-0000 .
E-mail address: author@institute.xxx

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1. Introduction

The study uses the analysis of four constructs (subjective norm, perceived behavioral control, entrepreneurial self-efficacy, and entrepreneurship education) to measure the entrepreneurial intention of university students from ISLA - Polytechnic Institute of Management and Technology (IPGT).

Understanding entrepreneurial intention is fundamental since it is considered a key factor for individuals to become entrepreneurs (Mensah, Zeng, Luo, Xiao, & Lu, 2021). Thus, countries that want their young people to be highly entrepreneurial should seek to know and explore the predictor dimensions of entrepreneurial intention, so that they can invest in developing them and thus maximize the predisposition of their young people towards entrepreneurship. In this sense, the study presents a model that seeks to explain the dimensions that are associated with entrepreneurial intention and the explanatory capacity of each one.

The theory of planned behavior (TPB) has been one of the most widely used theories to explain entrepreneurial intention and this theory is composed of three dimensions (Fayolle & Gailly, 2015; Mensah et al., 2021; Urban & Kujinga, 2017; Zaremohzzabieh et al., 2019). Of these, only two will be considered in the study, which are subjective norms and perceived behavioral control. Subjective norms are associated with the importance that each individual gives to societal opinions, in the sense that these condition their behavior or even their entrepreneurial intention. Perceived behavioral control is related to personal beliefs regarding the difficulty inherent in the process of becoming an entrepreneur, as well as the perception of the probability of success in the execution of the process.

Entrepreneurial self-efficacy, like perceived behavioral control, is associated with personal beliefs, but in this case, is related to abilities and capabilities in successfully pursuing a task.

Entrepreneurship education is a topic of growing concern, in the sense that it aims at learning in the business and community context and has, as its main objective, to incite students in a mindset change (Mensah et al., 2021).

The study followed the model used by Mensah et al. (2021) to validate the explanatory variance of the entrepreneurial intentions of ISLA - IPGT university students. The paper is structured as follows: literature review, methodology and model specifications, results, and discussion, and finally, conclusions of the study.

2. Literature Review and Research Hypothesis

Entrepreneurial Intention

Entrepreneurial intention (EI) is the perception and determination each individual has to devote to creating their entrepreneurial business (Ahmed, Klobas, & Ramayah, 2019; Farrukh, Alzubi, Shahzad, Waheed, & Kanwal, 2018). According to Carvalho (2004) stresses that motivations occur in environments that are more engaging and more conducive to business creation. Entrepreneurial attitude has a direct and significant impact on entrepreneurial intention since it consists of studying human behavior, grounded through the Theory of Planned Behavior (TPB) of Ajzen (1991), this theory is recognized and considered to be the dominant theory, according to (Schaegel & Koeing, 2014; Lortie & Castiogiovani, 2015; Liñán & Fayolle, 2015; Nguyen, Nguyen, Phan, & Vu, 2021). Thompson (2009) maintains that entrepreneurial intention can be seen as a conscious and planned decision that drives the actions necessary to launch a business. This trend translates directly into students embracing the entrepreneurial area, designing their own businesses, highlighting the creation of star-ups that have proliferated quite successfully. Cortez and Veiga (2019) identified that this entrepreneurial intention can be considered by various authors in disparate ways. However, the higher education audience has embraced the paradigm shift in a positive way, including the entrepreneurial attitude as a positive trend in their development and moving towards entrepreneurial activities in the strategies they adopt.

Theory of Planned Behaviour

Ajzen (1991) was the author who developed the TPB (Arranz, Arroyabe, & Arroyabe, 2018; Farrukh et al., 2018; Mensah et al., 2021; Opesade & Alade, 2021; Santos et al., 2021) which has become one of the most frequently used theories by researchers who want to study entrepreneurial intentions (Fayolle & Gailly, 2015; Mensah et al., 2021; Urban & Kujinga, 2017; Zaremohzzabieh et al., 2019). TPB consists of three dimensions: attitude toward behavior,

subjective norm (SN), and perceived behavioral control (PBC) (Ajzen, 2020; Arranz, Arroyabe, & Arroyabe, 2018; Boonroungrut & Huang, 2021; Farrukh et al., 2018; Mensah et al., 2021). In the study, we only considered the dimensions of subjective norm and perceived behavioral control which will be explored next.

The subjective norm is the social pressure (friends, family, peers, and society in general) to act or perform a certain behavior (Byabashaija & Katono, 2011; Mensah et al., 2021; Opesade & Alade, 2021; Santos et al., 2021; Sousa, Cruz, & Wilks, 2018), that is the influence of the opinion of others for the individual to make a commitment to become an entrepreneur or manifest entrepreneurial intention, in the sense that they believe this is the behavior expected by these people. The literature shows evidence that individuals with high values on this dimension have a higher propensity for entrepreneurial intention (Mensah et al., 2021).

Hypothesis 1 – Subjective norm has a positive and significant impact on college students' entrepreneurial intention.

Perceived behavioral control is a dimension considered by some authors similar to self-efficacy (Liñán & Chen, 2009; Nosheena, An, & Nasir, 2019), in the sense that both depend on personal beliefs to determine the performance of each individual's behavior (Ajzen, 2020). This is the associated perception of how easy or difficult it is for an individual to become an entrepreneur (Liñán & Chen, 2009) and how successful they might be in that entrepreneurial activity or project (Arranz et al., 2018; Mensah et al., 2021; Opesade & Alade, 2021).

Hypothesis 2 – Perceived behavioral control has a positive and significant impact on college students' entrepreneurial intention.

Both dimensions (subjective norm and perceived behavioral control) are associated with the ability to fulfill behaviors towards the management of entrepreneurial businesses/projects, but also the perceived ability to control such behaviors (Liñán & Chen, 2009).

Entrepreneurial Self-Efficacy

Entrepreneurial self-efficacy (SE) is a construct that is succinctly associated with personal beliefs. These personal beliefs are the abilities and capabilities that each individual possesses to successfully perform a given task (Hakyemez & Mardikyan, 2021; Mensah et al., 2021; Pihie, 2009). This construct is considered an antecedent of entrepreneurial intention and an essential tool in supporting the process of new business creation, as well as a key factor for learning effectiveness (Nguyen et al., 2021).

Applied to students, self-efficacy can be promoted by education in the sense that it is a determinant in the process of building students' academic success (Hakyemez & Mardikyan, 2021; Mensah et al., 2021). Self-efficacy involves variables such as motivation and engagement in task pursuit, which are predictor dimensions for entrepreneurial intention (Nguyen et al., 2021). Education can provide college students with valences that allow them to respond more effectively and efficiently to the adversities of the entrepreneurial process, making them able to "endure longer, persist in the face of challenges, and map up plans and strategies to obtain greater entrepreneurial objectives" (Mensah et al., 2021, p.4).

Hypothesis 3 – Entrepreneurial self-efficacy has a positive impact on college students' entrepreneurial intentions.

Entrepreneurship Education

It is commonly accepted that entrepreneurship education (EE) presupposes experience-based learning and aims at connecting to the business and community world (Boon, Van der Klink, & Janssen, 2013). According Jardim, Bártolo, & Pinho (2021), education towards entrepreneurship is, par excellence, a field for the advancement and development of societies, a trigger for economic growth, social cohesion, organizational success, and personal fulfilment. Therefore, the number of entrepreneurship education programs has increased exponentially over the past two decades (Jardim, 2021). "In a context in which it is recognized that knowledge surpasses material resources as a factor in the generation of value and social welfare, higher education and its institutions acquire a role of growing relevance" (Esteves, 2013.

pp. 1). According to the same author, their structuring and qualification must be capable of actively contributing to the process of social, technical, and economic development of the societies they serve. By the nature of its activities, the availability and generation of highly trained human resources, and the ability to articulate partners, the university must place itself as the center of a regional innovation system, creating and integrating actions and local agents for the promotion, production, and dissemination of knowledge, technology, and innovation (Esteves, 2013).

Hypothesis 4 – Entrepreneurship education has a positive impact on college students' entrepreneurial intentions.

3. Methodology and Model Specification

As discussed in section 2, four research hypotheses have been defined in this work that allow us to specify the model used in the study of the determinants of entrepreneurial intent. Figure 1 shows the analysis model used in the study.

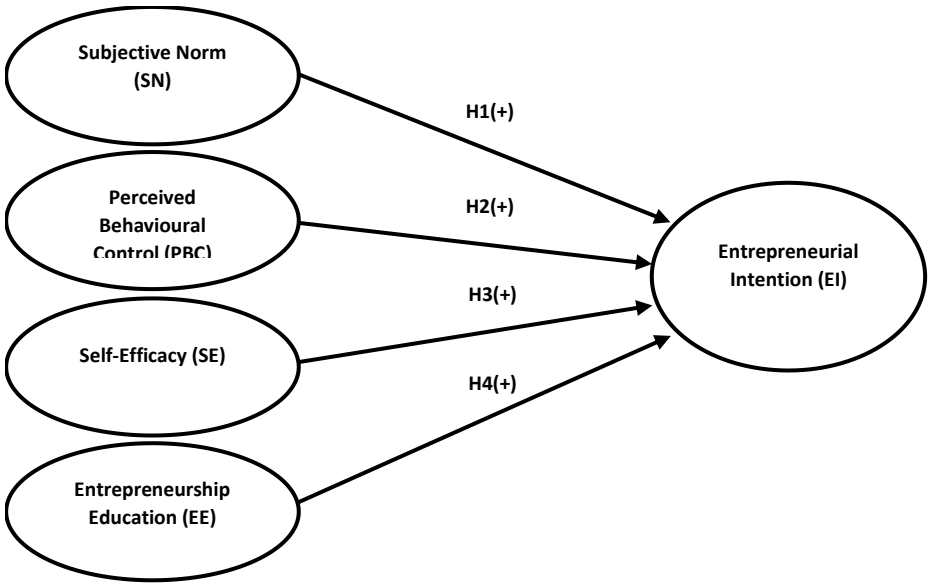

Fig. 1. Study model

The study follows a quantitative nature. The most important methodological aspects are defined in Table 1.

Table 1. Methodological synthesis

Analysis unit	Individual
Study population	Students of CTeSP, bachelor's degree and Master courses of ISLA-IPGT
Information sources	Main: questionnaire
Sample dimension	300 validated surveys (33,33% of the population)
Work camp	Conducted between October and December 2021
Data collection instrument	Survey
Data analysis techniques employed	Analysis of structural equations
Software used	SmartPLS (v.3.3.5)

To validate the hypothesis defined in the study was developed a survey that includes the scales of subjective norm, perceived behavioral control, self-efficacy and entrepreneurship education adapted from Mensah et al. (2021). The entrepreneurial intention scale was adapted from Keong (2008).

To validate the formulated hypotheses, we used a structural equations model that was estimated by partial least squares (PLS-SEM). The PLS path modelling method was developed by Wold (1982, cited by Ringle, Wende, & Becker, 2015). The PLS algorithm is a regressions sequence in terms of weighting vectors. PLS is a structural equation modelling method widely used in social sciences and behavior areas, enabling the evaluation of the relationships between constructs. It is a robust method to solve problems related the lack of multivariate normality, also reliable for small samples (Bido & Da Silva, 2019).

We choose to use the structural model with a first-order latent variable. In this case, the relationship between the latent variable and their dimensions (first-order latent variables) should be interpreted and used as factorial loadings. The model defined in figure 1 search validate four hypotheses (structural relationships) between IE and NS, PBC SE and EE.

The sample consists of 300 observations of higher education students. Of these 63.3% are female. 52.7% are bachelor's degree students, 33% are CTeSP's students and 14.3% are master's students. 50% of the students are workers attending classes on an after-work basis. In the academic year 2021-2022, ISLA - IPGT had 856 students, of which 247 attend CTeSP, 472 bachelor's degrees and 137 master's degrees. The sample is representative.

4. Results and Discussion

4.1. Measurement validity and reliability of used scales

The reliability of the indicators and the convergent validity are confirmed. All indicators have a factor load higher than 0,7 (see table 2). These values indicate a high convergent validity, as well as the unidimensionality of the constructs. To complement the convergent validity analysis was calculated using bootstrap test-t, revealing that all indicators are significant at 1% (see table 2).

All latent variables have an average variance extracted (AVE) greater than 0,5 (see table 3). All Cronbach's Alfa is above the acceptable internal consistency level of 0,7 (Hair, Ringle, & Sarstedt, 2011). Our analysis allows us to validate the existence of Cronbach Alfa higher than 0,777 for first-order latent variables. The composite reliability expressed in the same table presents values higher than 0,853, well above the 0,7 that define the reliability of the indicator (Marôco, 2010).

The discriminant validity was made based on the AVE results computed for each latent variable and its comparison with the correlations between the variables. We confirm that the square root of the AVE is higher than the correlations between the latent variables indicating that they share more variance between their measurement than with the other constructs.

Table 2. Mean, standard deviation, and factor loads of indicators

Latent Variable Construct	Indicators	Mean	STD	Loading	Bootstrap t-test	p-value
PBC	CCP1: If I start my own business, the chances of success will be very high.	3,133	0,834	0,789	27,733	0,000
	CCP2: I have enough knowledge and skills to start a business.	3,117	1,060	0,803	22,905	0,000
	CCP3: I am capable of developing or managing an entrepreneurial project / business.	3,387	0,933	0,801	22,056	0,000
	CCP5: I am aware of the supports for starting my own business.	3,003	0,988	0,780	14,313	0,000
EE	EE1: The topics associated with entrepreneurship and taught on my course increase my understanding of entrepreneurial attitudes.	3,903	0,800	0,831	23,774	0,000
	EE2: The curricular content taught in my course increases my understanding about entrepreneurship both at the societal and individual level.	3,900	0,802	0,881	48,445	0,000
	EE3: The subjects taught in my course increase my capacity at the level of idea generation.	3,917	0,755	0,792	17,529	0,000
	EE4: The themes taught in my course increase my understanding about the financial dimension of entrepreneurial projects.	3,767	0,867	0,742	34,442	0,000
	EE5: The themes associated and taught in my course improve my skills to deal with risks and uncertainties.	3,930	0,743	0,801	20,677	0,000
IE	IE1: The idea of starting a new business is appealing to me.	3,860	0,906	0,837	39,871	0,000
	IE2: I consider choosing a career as an entrepreneur/entrepreneur.	3,540	1,021	0,706	33,462	0,000
	IE3: I would rather be an entrepreneur than an employee of a company or organisation.	3,307	1,070	0,729	16,647	0,000
	IE4: I want to have the freedom to develop my own business.	3,750	0,924	0,851	41,840	0,000
	IE5: I would like to have a great impact on society through my entrepreneurial skills.	3,983	0,826	0,744	21,539	0,000
	IE6: I would rather start a company than be the manager of an existing one.	3,200	1,020	0,791	16,224	0,000
SN	NS1: I believe my closest family thinks I should pursue a career as an entrepreneur.	2,980	1,042	0,927	60,037	0,000
	NS2: I believe that my closest friends think that I should pursue a career as an entrepreneur.	3,080	1,000	0,935	74,091	0,000
	NS3: I believe that people, who are important to me, think that I should pursue a career as an entrepreneur.	3,123	1,024	0,956	137,593	0,000
SE	SE1: I can always manage to solve difficult problems if I try hard enough.	4,073	0,754	0,747	7,792	0,000
	SE2: I am confident that I could deal effectively with unexpected events.	3,847	0,695	0,795	8,580	0,000
	SE3: I can solve most problems if I invest the necessary effort.	4,117	0,685	0,823	9,013	0,000
	SE4: If I am in trouble, I can usually think of a solution.	3,907	0,724	0,765	4,979	0,000
	SE5: I can handle whatever gets in my way.	3,783	0,781	0,741	6,329	0,000

Table 3. Matrix of correlations between first-order latent variables, validity, and reliability of the constructs

First-order Latent Variables	1	2	3	4	5
1. EE - Entrepreneurial Education	0,831				
2. EI - Entrepreneurial Intention	0,305	0,779			
3. PBC - Perceived Behavioral Control	0,338	0,548	0,770		
4. SE - Self Efficacy	0,205	0,180	0,400	0,756	
5. SN - Subjective Norm	0,226	0,543	0,482	0,147	0,939
Cronbach Alfa	0,888	0,869	0,777	0,820	0,933
Composite reliability	0,918	0,902	0,853	0,869	0,958
Average Variance Extracted (AVE)	0,691	0,606	0,593	0,571	0,883

Note: the diagonal values represent the square root of the AVE. All correlations are significant at 1%.

4.2. Model estimation results

Using bootstrap, pseudo t-tests were performed to analyse the significance of structural coefficients (see table 4). Entrepreneurial Education, Perceived Behavioral Control and Subjective Norm all presents positive structural coefficients, t-ratios higher than 1,96 and a p-value lower than 0,05. Hypotheses H1, H2 and H4 were validated. The relationship between entrepreneurial intention and self-efficacy was negative and not significant, invalidating the H3.

Table 4. Structural relations of constructs

Structural Relations	Hyp.	VIF	f^2	Structural coefficient	Standard error	Value-t	p-value	R^2 Adjusted
EE - Entrepreneurial Education → EI	H1+)	1,144	0,019	0,113	0,056	2,024	0,043	0,406
PBC - Perceived Behavioral Control → EI	H2(+)	1,600	0,135	0,356	0,053	6,694	0,000	
SE - Self Efficacy → EI	H3(+)	1,204	0,002	-0,037	0,051	0,723	0,470	
SN - Subjective Norm → EI	H4(+)	1,132	0,161	0,352	0,050	6,974	0,000	

Note: P-values estimated by bootstrapping with 5000 repetitions. f^2 represents the size of the Cohen effect and VIF = Variance inflation factor

The highest VIF (variance inflation factor) value was equal to 1,444, indicating that the model is not biased by problems associated with collinearity (Bido & Da Silva, 2019). The model has no multicollinearity problems. All VIFs are below 5 (Hair Jr., Black, Babin, & Anderson, 2016; Costa & Oliveira, 2021).

Regarding the effect of the predictors, the PBC and SN stands out with a medium/large effect. Entrepreneurial Education has a small effect (Cohen, 1988).

The variance explained by the model is large and equal to 0,406, which means that determinants explained 40,6% of the variance of entrepreneurship intention of our students.

To validate the predictive relevance of the model, we calculated Stone-Geisser's Q^2 value. The measure represents a criterion for cross-evaluation of the predictive relevance of the PLS pathway model. According to Hair et al. (2011), when the values of Q^2 are higher than zero, we can consider that the model has predictive relevance. In our study, the value of Q^2 for the variable Entrepreneurial Intention is equal to 0,240.

We present the final structural model in figure 2.

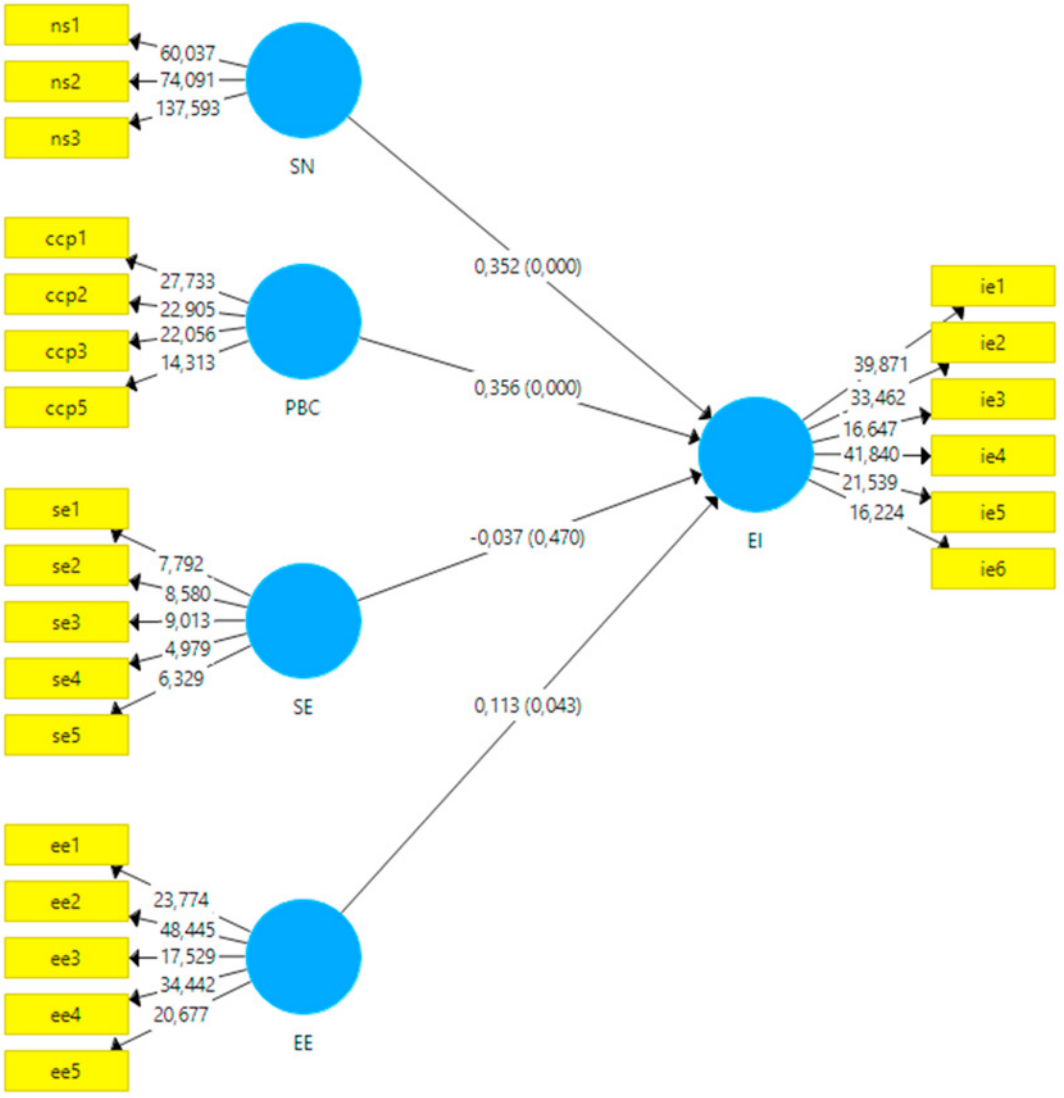

Fig. 2. Final Structural Model

4.3. Results Discussion

This research work analyses the impact that different factors can have on the entrepreneurial intention of students at a private higher education institution in Portugal. It is now commonly accepted the idea that it is fundamental for the development of a country and its society to have qualified human resources with skills in terms of entrepreneurship. For this reason, governments, business associations, companies and higher education institutions have created programs to develop an entrepreneurial attitude, in a consolidated effort to increase the number of entrepreneurs and thus encourage the emergence of new companies that stimulate employment and the creation of new jobs on a sustainable basis. Most of these programs target young students attending secondary and higher education. It is therefore important to know which factors increase entrepreneurial intention to include this information in the design of those programs.

What factors influence ISLA-IPGT students to become more involved in entrepreneurial activities? The sample used and the statistical analysis carried out led us to obtain results that statistically support three of the four research hypotheses formulated.

More specifically, it was concluded that the two factors that derive from TPB, subjective norm and perceived behavioral control, positively and significantly influence the decision of higher education students to engage in entrepreneurship activities. The positive impact of the subjective norm on entrepreneurial intention indicates that higher education students who have the perception that the idea of creating a new company will be socially approved by their reference groups, such as friends, families, and other important people like teachers, will increase their intention to engage in entrepreneurial activities. These results about the positive impact that the subjective norm has on entrepreneurial intention are in line with those obtained in previous studies (Mensah et al., 2021). Additionally, it was demonstrated that perceived behavioral control also positively influences the entrepreneurial intention of higher education students. This means that if a student has the perception that he has knowledge and skills to develop entrepreneurship activities, capable of making it easier to create a new business, this will have a positive impact on entrepreneurial intention. This conclusion is supported by previous studies that demonstrated that perceived behavioral control is a factor that positively influences entrepreneurial intention (Koe, Sa'ari, Majid, & Ismail, 2012; Luc, 2018; Ahmed et al., 2020; Mensah et al., 2021).

The analysis carried out allowed us to conclude that self-efficacy was the only construct that was not statistically significant in explaining entrepreneurial intention. This unexpected result could be explained by the fact that the self-efficacy construct is similar to perceived behavioral control (Liñán & Chen, 2009; Nosheena et al., 2019). Finally, entrepreneurship education has proved to be a factor that has a significant and positive impact on entrepreneurial intention. This positive impact reveals that the design of well-structured entrepreneurship programs, which encourage thinking outside the box, can stimulate students' interest in getting involved in entrepreneurial activities. To increase students' entrepreneurial intention, entrepreneurship education should be oriented towards practical sessions, rather than expository theoretical sessions, motivating students to explore the business opportunities that may arise in the markets (Iwu et al., 2019). It should be noted that this positive relationship between entrepreneurship education and entrepreneurial intention found in the present work is in line with previous studies (Hussain & Norashidah, 2015; Ahmed et al., 2020; Jena, 2020; Mensah et al. al., 2021).

This study has some implications for the development and promotion of entrepreneurship both within the school community and the general population. First, the government, higher education institutions and policymakers must define a joint strategy to stimulate an entrepreneurial attitude in students at different levels of education and in the general population, since, as we have seen, subjective norm and perceived behavioral control have a positive impact on entrepreneurial intention. That is, teaching strategies must be adopted that instill in students an entrepreneurial mindset, capable of generating continuous innovation, a desire to seek new opportunities to do business, even in unknown territory. Adopting these types of strategies at an earlier age will boost students' self-confidence to engage in entrepreneurial activities, increasing the perception that these activities will be socially approved by their reference groups. Second, education for entrepreneurship also proved to be decisive in increasing entrepreneurial intention. This evidence has implications for the development of entrepreneurship education programs for university students. Government, higher education institutions and policymakers should change the way entrepreneurship is taught, giving it a more practical and less theoretical aspect.

From the analysis carried out, it was concluded that the subjective norm, perceived behavioral control, self-efficacy and entrepreneurship education explain 40.6% of the students' entrepreneurial intention. This means that there will be other constructs that our study did not consider and that could be investigated in future works. Among these constructs could be perceived desirability, perceived feasibility, perceived access to finance, perceived levels of economics and entrepreneurial policy development and regulations and (Mensah et al. al., 2021).

5. Conclusions, limitations and future research

The present study investigated the determinants of entrepreneurial intention in a Portuguese private higher education institution - ISLA IPGT. For this purpose, a model of structural equations was considered in which the entrepreneurial intention is explained by four constructs: the subjective norm, the perceived behavioral control, self-efficacy and, finally, education for entrepreneurship. The results obtained allowed us to conclude that the subjective norm, perceived behavioral control, self-efficacy and entrepreneurship education increase the entrepreneurial intention of students at that institution. These results demonstrate that it is crucial to develop educational programs that stimulate

the entrepreneurial spirit in younger students, developing self-confidence and skills for involvement in entrepreneurial activities, capable of generating innovation and the creation of new companies and employment in a sustainable way.

This study has some limitations. First, it would be interesting to validate these conclusions in other contexts, extending the realization of the same in other higher education institutions and even at earlier levels of education. Second, the study only looks at entrepreneurial intent, leaving out entrepreneurial ability and student outcomes. Third, it will be important to include new constructs in the explanation of entrepreneurial intention, such as, the perceived desirability, perceived feasibility, perceived access to finance, perceived levels of economics and entrepreneurial policy development and regulations. Finally, in future investigations, it will be interesting to evaluate the effect that variables such as parental occupation and the existence of family businesses have on entrepreneurial intention.

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