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Will Entrepreneurial Creativity and Passion be Direct Predictors of Students' Entrepreneurial Intention in HEIs? An Empirical Case

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RESEARCH PAPER

Will Entrepreneurial Creativity and Passion be Direct Predictors of Students' Entrepreneurial Intention in HEIs? An Empirical Case

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ABSTRACT

PURPOSE: This study aims to analyse the influence of the dimensions of Creativity, Entrepreneurial Passion and Perceived Behaviour on the Entrepreneurial Intention of students in higher education institutions (HEIs).

DESIGN/METHODOLOGY/APPROACH: A total of 528 questionnaires were collected from higher education students, 32% being male and 68% female. A structural equation model (SEM) was used to test six research hypotheses.

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FINDINGS: The results obtained both corroborate and contradict previous studies on the topic, especially concerning validation of the influence of Entrepreneurial Passion and Perceived Behaviour on Entrepreneurial Intention. Surprisingly, we discover here that the Creativity dimension had no influence on Entrepreneurial Intention, contributing to the scarce literature referring to the non-existence of cause and effect between these two dimensions.

PRACTICAL IMPLICATIONS: It is essential and urgent for HEIs to promote training that changes students' behaviour in relation to the entrepreneurial intention, not only for those who want to be entrepreneurs but also for those embarking on a different career path, as it is possible to be a successful entrepreneur in any professional occupation, as long as there is creativity and passion.

ORIGINALITY/VALUE: In this study, two new and innovative constructs are inserted in the model of entrepreneurial intention: Creativity and Passion. A study of HEI students' entrepreneurial intention is still a dynamic topic, according to the constructs used in the theoretical model designed. These dynamics allow the contributions of this article to be differentiated from other research on the same subject.

KEY WORDS: *Creativity; Entrepreneurial Passion; Perceived Behaviour Entrepreneurial Intention; Higher Education; Students*

INTRODUCTION

Entrepreneurship is a very complex process (Neck and Greene, 2011) with a variety of alternatives motivating people to go down this path (Paiva *et al.*, 2018; Smith *et al.*, 2019). Highlighted among these is education for entrepreneurship to instil in students the entrepreneurial values that will mould their character and behaviour with respect to entrepreneurship (Imania and Suwatno, 2019). The way entrepreneurship is taught is perceived to be crucial, with lecturers having the main role in the task of teaching pro-actively, so that students acquire the necessary competencies to survive in an environment of exponential and rapid change (Linton and Klinton, 2019).

In these circumstances, it is possible to change students' behaviour in relation to entrepreneurship, when the message conveyed is one of an entrepreneurial mentality and spirit (Pizarro Milian and Gurrisi, 2017), and so the Theory of Planned Behaviour (TPB) (Ajzen, 1991) can contextualise peoples' perceived behaviours. This theory shows that normative beliefs specify how individuals should behave: motivation reflects the person's willingness to follow those norms; perceived behavioural control refers to people's perception of their capacity to adopt and perform a certain behaviour (Moriano *et al.*, 2012). Finally, these three constructs influence entrepreneurial intention (Krueger and Carsrud, 1993). However, the contextualisation of entrepreneurship is not limited to these constructs as others could predict students' entrepreneurial intention, such as creativity and entrepreneurial passion (Biraglia and Kadile, 2017) associated with perceived behaviour (Liñán and Chen, 2009). In this context, Newman *et al.* (2021) suggests that research on entrepreneurial passion might not only provide a deeper and more holistic understanding as to how entrepreneurs find and live their passion, but may also contribute to our knowledge as to how passion develops and influences outcomes outside of the context of entrepreneurship. In adding to entrepreneurial passion, creativity has also shown a positive association with entrepreneurial intention, say Anjum *et al.* (2020).

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In the extensive literature on this topic, the constructs of creativity and entrepreneurial passion are little explored, with Biraglia and Kadile (2017), Miao *et al.* (2017), and Stenholm and Nielsen (2019) believing more research is needed on the effect of entrepreneurial passion and the predictive effect of creativity on entrepreneurial intention (Biraglia and Kadile, 2017; Zampetakis *et al.*, 2011). In addition, Shahab *et al*. (2019) explained that many researchers are still seeking to understand the domain of entrepreneurial intention, linked to different alternatives of constructs (Aragon-Sanchez *et al.,* 2017; Urban and Kujinga, 2017).

Therefore, aiming to fill these gaps in the scientific literature, this study explores the effects of creativity and entrepreneurial passion on entrepreneurial intention. The main contribution of this article lies in the sample size and other contributions arising from the empirical case studied here also allow drawing implications for theory and practice.

Creativity, Entrepreneurial Passion and Perceived Behaviour

Defining creativity is a complex process as this construct has been widely used in research in various fields of social and human sciences. Amabile (1997:79) considered that "creative thinking, as noted above, refers to how people approach problems and solutions – their capacity to put existing ideas together in new combinations. The skill itself depends quite a bit on personality as well as on how a person thinks and works", which means entrepreneurial creativity (Shahab *et al*., 2019).

This definition allows the establishment of a bridge between creativity and entrepreneurship, as creative people tend to identify new opportunities (Fillis and Rentschler, 2010), one of the characteristics of entrepreneurs and interlinked with their personal creativity (Hills *et al.*, 1999). In these circumstances, the existence of creativity in education for entrepreneurship triggers students' interest in embarking on the process to become entrepreneurs (Imania and Suwatno, 2019). The literature referred to above reveals relevant leverage between creative thought, creativity and entrepreneurial activity (Moriano *et al*., 2012), and so it is important to validate the association between these constructs scientifically. Therefore, the following research hypothesis is formulated:

H1: Creativity has a positive influence on Entrepreneurial Intention.

Some studies have also shown the importance of entrepreneurial passion in the entrepreneurial intention (e.g., Biraglia and Kadile, 2017; Cardon *et al.*, 2009; Miao *et al.*, 2017). The mentors of this construct were Cardon *et al.* (2009), who developed a theoretical framework on this and its link with entrepreneurship and subsequent entrepreneurial intention. From that moment, entrepreneurial passion began to be seen as a construct with relevant effects on entrepreneurial activity (Thorgren and Wincent, 2015).

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In this scenario, entrepreneurial passion has been increasingly recognised as a predictor of how entrepreneurial intention is constructed (Biraglia and Kadile, 2017). If this passion is associated with creativity, the discovery of new opportunities and their transformation in entrepreneurial business, a crucial nucleus of entrepreneurship is detected (Ruvio *et al.*, 2010), and so, of entrepreneurial intention. Therefore, people with entrepreneurial behaviour are more motivated to follow an entrepreneurial intention (Krueger, 2007) when that intention is raised by previous creative thought and an entrepreneurial passion (Ruvio *et al*., 2010). Another recent study revealed that this construct can add value to Ajzen's (1991) theory of planned behaviour in the field of entrepreneurship, since the passion for entrepreneurial activities can stimulate business planning, i.e., entrepreneurial intention (Karimi, 2020). Also the education for entrepreneurship in HEIs is a crucial pillar for students to develop their entrepreneurial intention (Neck and Greene, 2011). Finally Shahab *et al.* (2019) argued that entrepreneurial passion, must be preceded by creativity and that people with this competency demonstrate greater self-confidence and great entrepreneurial spirit (Imania and Suwatno, 2019). Therefore, the hypotheses are:

H2: Entrepreneurial Passion has a positive influence on Entrepreneurial Intention;
H3: Creativity has a positive direct effect on Perceived Behaviour;
H4: Entrepreneurial Passion has a positive direct effect on Perceived Behaviour;
H5: Perceived Behaviour has a positive influence on Entrepreneurial Intention;
H6: Entrepreneurial Passion has a positive direct effect on Creativity.

Finally, using the research stream articulated with the theory of planned behaviour and based on the literature review, the gaps identified and the framework, six research hypotheses will be tested statistically (Figure 1):

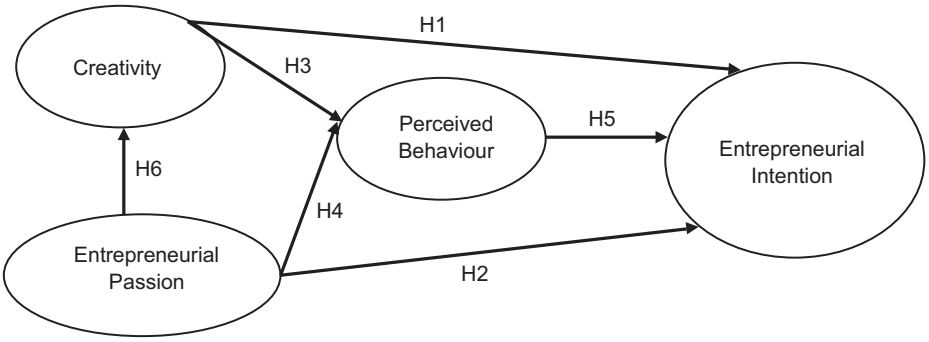

Figure 1: Conceptual Framework for Entrepreneurial Intention
Source: Constructed by authors

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METHODOLOGY

Sample and Data Collection

To obtain data, a paper questionnaire survey was used, after receiving permission from two centres of the IPCB (Castelo Branco Polytechnic Institute), 1) the School of Education (ESE) and (2) the School of Management (ESGIN), in Portugal, and from the students involved in this research. The questionnaire was administered at the start of classes using a sample of convenience, and was completely anonymous. A total of 528 questionnaires were collected; after eliminating those that were incomplete, a final sample of 508 students remained, a response rate of 39%. The socio-demographic data of the sample students are presented in Table 1.

Table 1: Sample

Measure	Item	Frequency	Percentage (%)
Gender	Male	163	32%
	Female	345	68%
Age	17-21	372	73%
	22-26	109	21%
	27-31	9	2%
	>31	18	4%
Year of Study	1st	218	43%
	2nd	120	24%
	3rd	170	33%
Professional Experience	Yes	287	56%
	No	221	44%
Student Worker	Yes	60	12%
	No	448	88%
Entrepreneurship Curricular Unit	Yes	171	34%
	No	337	66%
Family Own Business	Yes	324	64%
	No	184	36%
Student and Entrepreneur	Yes	16	3%
	No	492	97%

Source: Constructed by authors

Measurement Development Instruments

The measuring instrument used was a questionnaire adapted from previous scientific studies by other authors. The Creativity dimension was adapted from the studies by Zampetakis *et al.* (2011) and Zampetakis and Moustakis (2006), containing seven items. That of Entrepreneurial Passion,

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formed of four items, was adapted from the measures defined by Donaldson (2019) and Stenholm and Nielsen (2019). Perceived Behaviour, formed of six items, was adapted from the studies by Liñán and Chen (2009), and finally, Entrepreneurship Intention, formed of five items, was adapted from the studies by Liñán and Chen (2009) and Moriano *et al.* (2012).

ANALYSIS AND RESULTS

PLS-SEM methodology is increasingly used in a great variety of areas to test, explain and predict measurement models (Ghasemy *et al*., 2020). Structural equation modelling continues to be one of the most robust and commonly used techniques in social sciences (Hair *et al*., 2017) and this multivariate statistical technique was chosen to validate the data collected.

In the analysis of the data collected, the measurement model was examined and convergent and discriminant validity was assessed (Fornell and Larcker, 1981; Hair *et al*., 2012). The structural model was then assessed to obtain the significance, strength and direction of the relationship between the dimensions studied (Anderson and Gerbing, 1988).

Analysis and Quantification of the Measurement Model

Table 2 shows that the measurement model presents good internal reliability, with a very significant Cronbach alpha. Using the criteria suggested by Byrne (2013), all the dimensions were found to present values above 0.8, general reliability was above 0.8, and Average Variance Extracted (AVE) for each dimension was above 0.5. Confirmatory factor analysis (CFA) presented values above 0.6 with $p<0.001$ (c.f. Table 2) obtaining the final measurement model without the need to exclude any variable. Finally, concerning the constructs' composite reliabilities, these were all above 0.8.

Table 2: Construct Reliability and Convergent Validity

Constructs	Variable	Loading	Composite Reliability (CR)	Average Variance Extracted (AVE)	Cronbach's Alpha (α)
Creativity	CREA1	0.976	**0.924**	0.609	**0.957**
	CREA2	0.846			
	CREA3	0.861			
	CREA4	0.885			
	CREA5	0.899			
	CREA6	0.809			
	CREA7	0.912			
Entrepreneurial Passion	EPAS1	0.862	**0.878**	**0.535**	**0.929**
	EPAS2	0.902			
	EPAS3	0.938			
	EPAS4	0.820			

(continued)

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Table 2: Construct Reliability and Convergent Validity *(continued)*

Constructs	Variable	Loading	Composite Reliability (CR)	Average Variance Extracted (AVE)	Cronbach's Alpha (α)
Perceived Behaviour	PBEH1	0.705	**0.888**	**0.545**	**0.890**
	PBEH2	0.793			
	PBEH3	0.603			
	PBEH4	0.824			
	PBEH5	0.884			
	PBEH6	0.860			
Entrepreneurial Intention	EINT1	0.748	**0.946**	**0.778**	**0.946**
	EINT2	0.881			
	EINT3	0.938			
	EINT4	0.917			
	EINT5	0.913			

Source: Constructed by authors

The discriminant validity criteria are satisfied, as shown in Table 3.

Table 3: Discriminant Validity

	CR	AVE	EINT	CREA	EPAS	PBEH
EINT	0.946	0.778	**0.882**			
CREA	0.924	0.609	0.034	**0.781**		
EPAS	0.878	0.535	0.653	0.495	**0.732**	
PBEH	0.888	0.545	0.445	0.462	0.244	**0.738**

Note: All correlations significant at $p<0.001$. Diagonal elements are square roots of average variance extracted
Source: Constructed by authors

STRUCTURAL MODEL: CONFIRMATORY FACTORIAL ANALYSIS (CFA)

The results indicate that the initial model proposed did not require the removal of any variable, as all presented a factor loading above 0.5, showing acceptable adjustment. Figure 2 presents the results of the structural equation modelling for the conceptual model proposed; this gave a chi-squared ratio for the degree of freedom (χ^2/df) of 4.064 ($p<0.001$), goodness of fit index (GFI) of 0.89, comparative fit index (CFI) of 0.94, normative fit index (NFI) of 0.92, relative fit index (RFI) of 0.90, and Root Mean Square Error of Approximation (RMSEA) of 0.078. Normally, the reference values in larger fit statistics between 0.8 and 0.9 for GFI, NFI, RFI and CFI indicate good adjustment of the model and RMSEA values between 0.05 and 0.08 are acceptable (Hair *et al*., 2011).

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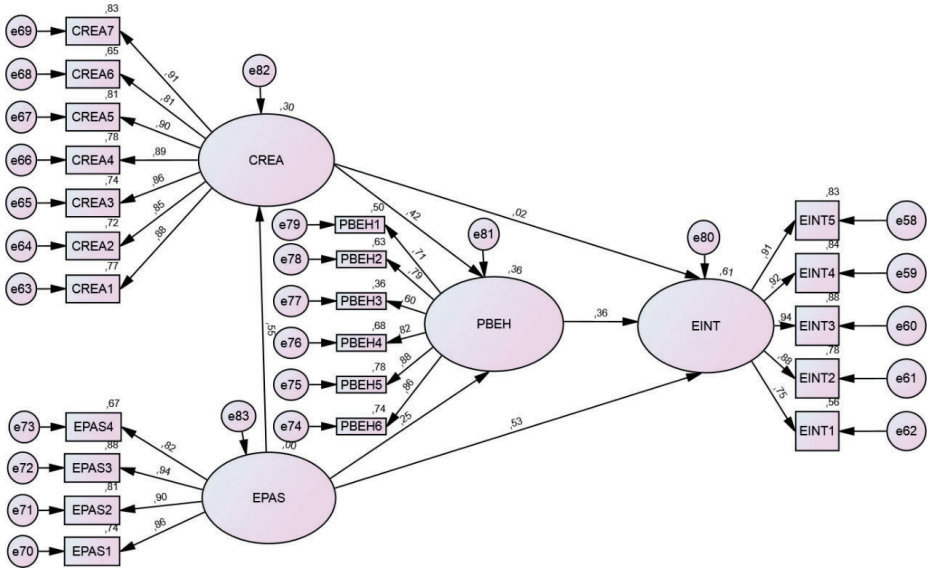

Figure 2: Final conceptual model

Source: Constructed by authors

Hypothesis Tested Results and Discussion

In Table 4, we can see the structural results of the CREA, EPAS, PBEH dimensions. These have direct and indirect positive statistical significance on EINT, validating the hypotheses formulated (H1, H2, H3, H4, H5 and H6).

Table 4: Research hypotheses and statistical results

Hypotheses	Effect	Regression Coefficient	Standard Error	t	p-value	Results
H1	CREA→ EINT	.034	.059	.580	p>0.05	Rejected
H2	EPAS→ EINT	.653	.054	12.024	p<0.001	Supported
H3	CREA→ PBEH	.462	.056	8.242	p<0.001	Supported
H4	EPAS→ PBEH	.244	.050	4.888	p<0.001	Supported
H5	PBEH→ EINT	.445	.054	8.251	p<0.001	Supported
H6	EPAS→ CREA	.495	.042	11.905	p<0.001	Supported

Source: Constructed by authors

Table 4 presents the results of the hypotheses tested in the structural model, which were all statistically significant except for H1. Creativity has a positive direct influence on Entrepreneurship Intention (β = 0.034, p>0.05), meaning this hypothesis is not validated due to the lack of statistical

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significance. This shows that a creative student does not always reveal a future entrepreneurial intention. Concerning the effect of Entrepreneurial Passion on Entrepreneurial Intention ($\beta = 0.653$, $p<0.001$), a passion to be an entrepreneur has effects on future entrepreneurial intention, validating H2. Creativity ($\beta = 0.462$, $p<0.001$) and Entrepreneurial Passion ($\beta = 0.244$, $p<0.001$) have a positive and statistically significant effect on Perceived Behaviour, demonstrating that students' behaviour regarding entrepreneurship is influenced by creativity and passion for what they do and intend to do as future professionals. These results validate H3 and H4. In turn, Perceived Behaviour ($\beta = 0.445$, $p<0.001$) has a direct and statistically relevant influence on students' Entrepreneurial Intention. Finally, we find that Entrepreneurial Passion ($\beta = 0.495$, $p<0.001$) influences creativity, in that the more students enjoy doing something or fulfilling a professional desire, the greater their creativity in performing that task. This result validates H6 formulated in the measurement model presented and tested through structural equation modelling.

These results validate five of the six research hypotheses formulated in the conceptual research model proposed.

Analysing these results in the light of the literature reviewed, the measurement model showed a direct and statistically significant influence of Entrepreneurial Passion ($\beta = 0.653$, $p<0.001$) on Entrepreneurial Intention ($\beta = 0.205$, $p<0.001$) among university students, meaning that this construct is fundamental as an antecedent of entrepreneurial activity (Thorgren and Wincent, 2015). This reveals that students who have a real passion for what they do and believe in will be able to carry out successful projects, and in some cases leaving a mark on society (Ma and Tan, 2006). In this study, Entrepreneurial Passion is found to be a relevant predictor of Entrepreneurial Intention, corroborating previous studies concluding that entrepreneurs with a passion for what they manage to do find it easier to overcome the barriers and challenges faced in the course of their professional activity (Biraglia and Kadile, 2017; Chen *et al.*, 2009), with greater likelihood of success (Ho and Pollack, 2014). Concerning the influence of Perceived Behaviour ($\beta = 0.445$, $p<0.001$) on Entrepreneurial Intention, individuals' behaviour is found to influence their future intention. Therefore, the entrepreneurial behaviour revealed (Stenholm and Nielsen, 2019) is a dominant factor for future entrepreneurial intention (Biraglia and Kadile, 2017; Cardon *et al.*, 2009; Thorgren and Wincent, 2015).

On the contrary, Creativity did not influence Entrepreneurial Intention ($\beta = 0.034$, $p>0.05$); this does not corroborate previous studies finding that creative people tend to identify new business opportunities more easily (Fillis and Rentschler, 2010), revealing greater entrepreneurial intention (Imania and Suwatno, 2019). The great majority of studies conclude that creativity makes future entrepreneurs more confident and effective in solving problems (Imania and Suwatno, 2019), but the evidence found here shows that creativity does not influence entrepreneurial intention. This corroborates the study by Van Gelderen *et al.* (2008), who also found an absence of a positive, direct and statistically significant effect of creativity on entrepreneurial intention.

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Other important relationships were found between the constructs of Creativity (β = 0.462, p<0.001) and Entrepreneurial Passion (β = 0.244, p<0.001) as predictors of Perceived Behaviour. This means that creativity and a passion for what is produced, carried out or embraced (e.g., a social or economic project) changes behaviour and directs individuals towards fulfilling their objectives (Shahab *et al*., 2019), raising their entrepreneurial spirit and behaviour (Imania and Suwatno, 2019).

Finally, the empirical results obtained also suggest that Entrepreneurial Passion (β = 0.495, p<0.001) has an influence on Creativity, revealing that entrepreneurs with a passion for what they do and believe in have increased creativity for entrepreneurial activities (Cardon *et al*., 2009). The most impassioned entrepreneurs become more creative and able to overcome barriers and challenges (Chen *et al*., 2009), increasing their dedication to the projects they embrace and making success more probable (Ho and Pollack, 2014). In addition, passion associated with creativity and the discovery of new opportunities is crucial for entrepreneurial success (Ruvio *et al*., 2010).

CONCLUSIONS AND CONTRIBUTIONS

This research aimed to analyse the influence of the dimensions of Entrepreneurial Passion and Perceived Behaviour on the Entrepreneurial Intention of higher education students. Using SEM, four relevant dimensions in studying this area of knowledge were presented, with the results obtained showing its good explanatory power and confirming its robustness in predicting students' entrepreneurial intention. Five of the six research hypotheses were validated, with very robust and statistically significant factor loadings. This therefore corroborates and contradicts previous literature on the subject, especially regarding the influence of Creativity on Entrepreneurial Intention.

The construct tested with the greatest positive direct factor loading on Entrepreneurial Intention was Entrepreneurial Passion, meaning that a passion for future entrepreneurship influences students in their attitude towards embracing a future career in the world of business. Perceived Behaviour also revealed a relevant positive direct influence on Entrepreneurial Intention, demonstrating that individuals' behaviour is the cause and effect of their entrepreneurial intention. An individual that reveals behaviour directed towards entrepreneurial business activities from the outset is more likely to become a true entrepreneur in the future. The major surprise of this study was finding that creativity has no statistically significant effect on entrepreneurial intention. This result contradicts the majority of studies in the literature that reveal that a creative student is usually one with greater leanings towards entrepreneurship. Perhaps the students studied here did not consider that their creativity was important enough to influence them to be entrepreneurs in the future, although this does not mean that their creativity is not important for their personal and professional success.

The remaining dimensions presented relevant positive direct effects among each other, demonstrating that Creativity and Entrepreneurial Passion have an influence on students' future Perceived Behaviour, and that Entrepreneurial Passion also influences students' improved creativity as future entrepreneurs.

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The study of HEI students' entrepreneurial intention is still a dynamic topic, according to the constructs used in the theoretical models designed. These dynamics allow the contributions of this article to be differentiated from other research on the same subject. The current pandemic means that today and in the future people's creativity must be stimulated to face up to crises and find a way out through entrepreneurship. Despite demonstrating that creativity does not influence students' entrepreneurial intention, it is important to stimulate this in HEIs, encouraging students to be creative and critical in presenting solutions to problems. Obviously, creativity may not be inherent to the individual, but it is certainly something that can be worked on; this is the job of HEIs, understood as the entities responsible for equipping future professionals with entrepreneurial competencies, encouraging them to take risks, take up challenges and make the most of opportunities. This line of thought is the main contribution of this empirical study, as an implication for theory. Another lies in the relevant influence of passion on entrepreneurial intention, revealing that loving what you do ensures success and, if allied to creativity, can create the resilient conditions required at the present time. It would therefore be important for students to be encouraged, by their lecturers, supervisors and others, to develop their future projects with passion and creativity, for them to be the future basis of the economy.

Furthermore, and in terms of implications for practice, it is essential and urgent for HEIs to promote training that changes students' behaviour in relation to entrepreneurial intention, not only for those who want to be entrepreneurs but also for those embarking on a different career path, as it is possible to be a successful entrepreneur in any professional occupation, as long as there is creativity and passion.

Finally, the fact that a positive relationship of creativity with entrepreneurial intention was not found, it is important to point out that when an entrepreneur transforms passion and talent into a sustainable business, they are being creative. This means that creativity is defined as the ability of an individual, or a group of individuals, to imagine and create something different and original to a problem, in the face of the continuous disruption of the current business environment, because an individual using his entrepreneurial passion to embark on a path of generation and exploration of new ideas, which generate added value, is clearly using his personal creativity. Therefore, the non-corroboration of creativity as a determinant of entrepreneurial intention requires further studies, involving other constructs at the level of intrinsic characteristics of individuals. This suggests a fertile agenda for future research on this topic.

As with any study, this one is not without limitations. The first concerns the use of only two centres of one HEI, which may have influenced the results obtained. Therefore, a future suggestion would be to study all HEIs in Portugal, to give even more scientificity to the conclusions. The second limitation is related to the multivariate statistical technique used, as many others could have been chosen. Future research with another type of technique would be interesting and allow the comparison of results, certainly determining various synergies. As this is a fertile topic, with the COVID 19 pandemic triggering major creativity in small, local companies to embrace a survival strategy with creativity and passion, it would be important to survey HEI students about their

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perception of this crisis and what entrepreneurial attitudes they would have adopted to solve it, this being another suggestion for the future.

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APPENDIX 1

Indicate your level of agreement with the following statements, classifying them between 1 (total disagreement) and 7 (total agreement)			
Creativity (CREA)			
1	I frequently find creative solutions to problems.	**CREA1**	(Zampetakis *et al.*, 2011; Zampetakis and Moustakis, 2006)
2	I am good at providing a new approach to problems.	**CREA2**	
3	I immediately suggest new, practical ideas.	**CREA3**	
4	I generally have new, innovative ideas.	**CREA4**	
5	I am good at generating creative ideas.	**CREA5**	
6	I often promote and defend my ideas to others.	**CREA6**	
7	I frequently find creative solutions to problems.	**CREA7**	
Entrepreneurial Passion (EPAS)			
1	Owning your own company would be energising.	**EPAS1**	(Donaldson, 2019; Stenholm and Nielsen, 2019)
2	Developing a new business through its initial success would be pleasant.	**EPAS2**	
3	It would be exciting to establish a new business.	**EPAS3**	
4	Founding a business is an important part of who I want to be.	**EPAS4**	
Entrepreneurial Intention (EINT)			
1	I am ready to do anything to become an entrepreneur.	**EINT1**	(Liñán and Chen, 2009; Moriano *et al.*, 2012)
2	My professional objective is to become an entrepreneur.	**EINT2**	
3	I am determined to create a company in the future.	**EINT3**	
4	I have thought very seriously about starting a business.	**EINT4**	
5	I have a firm intention to create a company one day.	**EINT5**	
Perceived Behaviour (PBEH)			
1	It would be easy for me to start a company and keep it operating.	**PBEH1**	(Liñán and Chen, 2009)
2	I am prepared to start up a viable company.	**PBEH2**	
3	I am able to control the whole process of creating a new company.	**PBEH3**	
4	I know how to develop an entrepreneurial project, since I already know all the details.	**PBEH4**	
5	If I tried to start a company, I would be very likely to succeed.	**PBEH5**	
6	I know that I am effective at defining my idea for my company and an appropriate strategy for it.	**PBEH6**	

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