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Entrepreneurial intention among women: A case study in the Portuguese academy

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Abstract

A growing interest in academic entrepreneurship has characterized the past few years. Young university students are increasingly encouraged to create their companies to boost their region's social and economic development. In this regard, women entrepreneurs have been playing a decisive role. They have been increasing in number, becoming of key importance due to their status and significance for the gender impact on entrepreneurship. This research evaluates women's entrepreneurial intention in the Portuguese academy, denoting which entrepreneurial intent is influenced by environmental factors such as closer valuation and social valuation and motivational factors such as attitude toward the behavior, subjective norms, and perceived behavioral control. For this purpose, a quantitative methodology was used. A questionnaire was applied to 731 female students of higher education in Portugal. The analysis of the results allowed us to perceive which variables under study influenced the entrepreneurial intention. The findings will reinforce the literature, thus, contributing to strengthening the theoretical framework on entrepreneurial intentions in women and launching clues for action within public decision-makers, universities, and civil society, allowing to adopt practices that will increase entrepreneurship in women. To our knowledge, this research is one of the few studies on female entrepreneurial intention in academia in a peripheral region of Europe such as Portugal.

JEL CLASSIFICATION
L31, M14

1 | INTRODUCTION

In recent years, we have seen a growing interest in academic entrepreneurship. Young university students are increasingly encouraged to start their businesses, fostering social and economic development in the regions (Lopes, Ferreira, et al., 2020; Seguí-Mas et al., 2018). It is an accepted fact that academic entrepreneurship positively impacts the development of policies formulated by policymakers, consequently resulting in the increment of employment (Etzkowitz, 2013; Etzkowitz et al., 2000; Friedman & Silberman, 2003).

In this context, women have increased their labor participation in the most developed and industrialized economies (Eib & Siegert, 2019). Subsequently, the number of women who became entrepreneurs has also been growing. It is pertinent and important to analyze the impact of gender on entrepreneurship (Braches & Elliott, 2017; Drew & Humbert, 2012; Henry & Marlow, 2014; Huarng et al., 2012).

Nevertheless, there are factors related to female entrepreneurs that are substantially different from male entrepreneurs (Akter et al., 2019; Bates, 2002; Pearson, 2007; Weiler & Bernasek, 2001). The international labor organization reported that more than 42% of all companies working in the formal economy worldwide are run by women. However, only 15% of companies that export their products/services are run by women entrepreneurs (Akter et al., 2019).

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The World Trade Organization defends that investing in women and supporting them in themselves is not free of risks since they give approximately 10 times more than what they receive from society (Akter et al., 2019). Furthermore, the participation of women in leadership positions is one of the objectives of sustainable economic development (Griffiths, 2018).

Entrepreneurship is seen as an alternative career for women to enter the business world. Autonomy to become an entrepreneur is justified because women can control their time more effectively, allowing them to reconcile their work with "family obligations" (which may negatively affect women in their standard jobs).

Financial autonomy is also seen as a barrier for women to become entrepreneurs (Eib & Siegert, 2019). Nowadays, inequalities and prejudices still prevail on women to become entrepreneurs, although, in theory, there are no formal requirements regarding gender (Hagqvist et al., 2018; Henry et al., 2016).

Nonetheless, there are many companies managed by women, in which some of the situations previously mentioned are reflected. Generally, in these companies, women work from home or part-time, which places pressure on the priorities of women, initially focused on the family as caregivers or mothers, and then on the work. This condition affects the credibility of female entrepreneurship (Braches & Elliott, 2017; Eib & Siegert, 2019).

Academics have carried out studies on female entrepreneurship. However, the female entrepreneurial intention is less explored. The study by Joshi et al. (2015) makes a historical review of women's entrepreneurship. The study's first phase was performed to understand why people face inequalities in the business context. In a second phase, the researchers focused their attention on identifying women's barriers in business. In a third phase, the study focused on stakeholders' effect on companies managed by women and the differences with the ones managed by men (Akter et al., 2019; Alves et al., 2017).

Generically, academia has been studied entrepreneurial intention. Some studies identified potential factors, such as attitudes, education, previous experiences, motivations, and other contexts that may or may not influence entrepreneurial initiatives (Abu-Saifan, 2012; Frese & Gielnik, 2014; Hatten & Ruhland, 1995; Hunter & Lean, 2018; Jones et al., 2008; Langowitz & Minniti, 2007; Lopes, Ferreira, et al., 2020; Oganisjana, 2015; Robinson et al., 1991). These studies indicate that young university students and entrepreneurs have adequate skills to be innovative. They are also more receptive to using new technologies, positively impacting their perception of behavioral control and intention to become entrepreneurs. Other studies point out that young university students cannot become entrepreneurs because they lack market experience (Ferri et al., 2018; Kautonen et al., 2011; Kolvereid, 1996; Krueger et al., 2000; Rubio-Banon & Esteban-Lloret, 2016; Zhao et al., 2005). Young university students do not intend to become entrepreneurs (Lopes, Teixeira, et al., 2020).

Studies on female entrepreneurial intention are not frequent in the academy. Nonetheless, they are becoming increasingly important in the socioeconomic development of the regions (Rodríguez-Gulías et al., 2018; Sarfaraz et al., 2014). Female entrepreneurship reduces poverty, achieves gender equality, and improves production at work (Ferri et al., 2018). In this perspective, studying female entrepreneurial intention in the academy can be relevant concerning policy development, growth potential, and the growth of regions (De Vita et al., 2014; Ferri et al., 2018; Furst & Reeves, 2008). It is important to know the factors that influence university students to become entrepreneurs in different contexts (Ferri et al., 2018; Iffländer et al., 2018; Lindholm Dahlstrand & Politis, 2013; Vega Gómez et al., 2019). This research aims to evaluate the intention of women in Portuguese academia to become an entrepreneur.

This research is pertinent and actual since it is one of the few that studies female entrepreneurial intention in academia in a peripheral region of Europe such as Portugal. The obtained results lead us to the following assumptions: (1) the attitude toward behavior has a positive impact on the entrepreneurial intentions of women in higher education; (2) a perceived behavioral control has a positive impact on entrepreneurial intentions of women in higher education; (3) subjective norm has a positive impact on the attitude toward the behavior of women in higher education; (4) subjective norm has a positive impact on the perceived behavioral control of women in higher education; (5) closer valuation has a positive impact on the attitude toward the behavior of women in higher education; (6) closer valuation of women in higher education has a positive impact on subjective norms; (7) social valuation of women in higher education has a positive impact on subjective norms; and (8) social valuation of women in higher education has a positive impact on perceived behavioral control.

This research starts with the introduction, where the theme under analysis is enlightened. The literature on female entrepreneurial intention in the academy is reviewed in Section 2. The methodology and data are explained in Section 3. The results are presented and discussed in Section 4. Section 5 concludes with clues for future investigations.

2 | LITERATURE REVIEW

Entrepreneurial intention can be considered a state of mind that leads an individual to create his job instead of working for other people (Karimi et al., 2016). It can be translated into a "self-recognized conviction" by any individual willing to start a new business venture, being a key element to understanding the process of creating new companies (Farrukh et al., 2018; Liñán et al., 2011; Ridha et al., 2017). Some cognitive-based entrepreneurship models have emerged to understand this phenomenon: the entrepreneurial event (Shapero & Sokol, 1982) and the theory of planned behavior (Ajzen, 1991).

According to Shapero's model, the entrepreneurial intention is conditioned by the perceptions of desirability (the individual system and values and social system of which the individual is a part) and viability (financial support and possible partner). These perceptions depend on the cultural and social environment and determine personal choice (Shapero & Sokol, 1982).

On the other hand, for Ajzen's model, the cultural and social environment affects human behavior. The individual's intentions result from three determinants: attitude, perceived behavior control, and

subjective norms (Ajzen, 1991). For Liñán et al. (2011), many studies reveal that the models have common points: the perceptions of desirability of the Shapero model are close to the attitude toward the behavior and subjective norms of the Ajzen model. These authors argue that, in general, the perceptions of the values of society and the closest environment influence motivational factors that determine entrepreneurial intention (Liñán et al., 2011).

Regarding motivational factors, and according to the theory of planned behavior (Ajzen, 1991), we can deduce that the attitude toward the behavior refers to the individual's assessment of a certain action, which is qualified as beneficial and useful, and representing the personal assessment of the intention to become an entrepreneur (Enkel & Bader, 2016; Krueger & Carsrud, 1993).

Subjective norms refer to the social pressure exerted by people's opinions on the proposed behavior, depending on the expectation of support from other important people (Lortie & Castogiovanni, 2015). Finally, the perceived behavioral control represents the propensity to act and the perceived feasibility of exhibiting a particular behavior, translating into self-efficacy (Krueger & Carsrud, 1993).

Regarding the surrounding environment, and according to the social learning theory, environmental factors greatly influence learning and higher cognitive processes (Bandura et al., 1999). This way, environmental factors can play a role in shaping entrepreneurial intentions. These environmental factors can be divided into closer valuations (the expectations of family, friends, and important people will influence individuals' responses to their entrepreneurial intent) and social valuation (the values of specific groups or societies shape the development of certain skills and personality traits, which will influence how individuals view entrepreneurship) (Liñán et al., 2011).

2.1 | Women entrepreneurial intention

When focusing attention on female entrepreneurship, we can assume that it occurs due to different reasons (Santos et al., 2018), shaping women's entrepreneurial attitudes. The stereotypes of gender traits and intergender relationships persist, along with existing discrimination practices. The unequal access between genders to institutional and financial resources is an example that can be pointed out as persisting discrimination. Despite the prevailing society discourse on the necessity to implement measures to combat gender discrimination, there is still a long way to go when the theme is centered on entrepreneurial intentions (Marques et al., 2018).

Some studies (Al-Jubari et al., 2019; Davidsson & Honig, 2003; Ferri et al., 2018; Iffländer et al., 2018; Karimi et al., 2013; Krueger et al., 2000; Lortie et al., 2017; Miranda et al., 2017; Veciana et al., 2005; Wang & Wong, 2004) analyze entrepreneurial intentions according to gender. The study of Veciana et al. (2005) concluded that, although the interviewed students had a favorable perception of the attitude toward the behavior, their subjective norms were not positive, and the intentions were relatively low.

Krueger et al. (2000) state that the role of gender increases our understanding of entrepreneurial intentions, leading to differences between men and women in such context. Also, the study of Wang and Wong (2004) concluded that gender, experience, and level of education are significant factors to explain the entrepreneurial intentions of individuals.

Ferri et al. (2018) mentioned that, in general, women encounter gender-related obstacles to gain credibility and resources in the business world (this does not occur due to lack of skills, but it translated in difficulty to obtain loans and in lower lent capital than that to men). According to this study, subjective norms strongly influence the entrepreneurial intentions of female students, suggesting that social recognition is very important for them. Perceived behavioral control also positively affects female students' entrepreneurial intentions, as it explains that students will translate their intentions into actions. Finally, the authors report that the perception of attitude toward the behavior affects students' intention to become entrepreneurs.

Bagheri and Lope Pihie (2014) examined the relationships between entrepreneurship, entrepreneurial self-efficacy, subjective norms, social valuation of entrepreneurship, and entrepreneurial intentions and how gender affected Malaysian students in five universities. These authors concluded that gender completely moderates the relationship between students' entrepreneurial intention and background. While entrepreneurial attitude and self-efficacy had greater effects on men's intentions to become entrepreneurs, entrepreneurship and subjective norms had a stronger impact on women's entrepreneurial intentions. Furthermore, the social valuation of entrepreneurship had an indirect relationship with entrepreneurial intention through self-efficacy and subjective norms.

The study of Miranda et al. (2017) showed that, in academia, entrepreneurial intentions are greater in men than in women. The study also suggests that this lower rate of entrepreneurship among women is due to unobservable influences directly related to genders, such as discrimination between clients and investors, cultural aspects, social differences, or differences in family roles or preferences.

Karimi et al. (2013) refer that subjective norms are essential for females but are not significant for males. On the other hand, the attitude toward behavior is very important for men. It means that male students are driven by instrumental factors, while female students are more motivated by social factors. The perceived behavioral control was the factor that most contributed to the forecast of entrepreneurial intentions on both genders. Karimi et al. (2013) consider that with the increasing presence of women in entrepreneurship and universities, it is necessary to adapt the process of career choice and education for entrepreneurship between women and men and take into account the different perceptions and motivations between genders. Entrepreneurship education programs can be customized to meet the needs of both genders and emphasize the factors that are important to each group.

Lortie et al. (2017) investigated how female entrepreneurs create social value in communities and society, concluding that these are generally motivated by social considerations, such as the desire to resolve social issues. In the study of Iffländer et al. (2018), it was

concluded that entrepreneurial students are motivated by social considerations, seeking to satisfy personal and practical goals, such as success and financial recognition. These authors consider it essential for scientific organizations to institutionalize academic entrepreneurship and carefully look to the motivations behind the entrepreneur students, always considering the differences between gender.

2.2 | Structural model

A model based on the entrepreneurial intention model formulated by Liñán et al. (2011) was used, whereby the entrepreneurial intention is influenced by environmental factors such as closer valuation and social valuation and by motivational factors such as attitude toward the behavior, subjective norms and perceived behavioral control. The following hypotheses were formulated:

H1a. *Attitude toward behavior has a positive impact on the entrepreneurial intentions of women in higher education.*

H1b. *Perceived behavioral control has a positive impact on the entrepreneurial intentions of women in higher education.*

H2a. *Subjective norm has a positive impact on the attitude toward the behavior of women in higher education.*

H2b. *Subjective norm has a positive impact on the perceived behavioral control of women in higher education.*

H2c. *Subjective norm has a positive impact on the entrepreneurial intentions of women in higher education.*

H3a. *Closer valuation has a positive impact on the attitude toward the behavior of women in higher education.*

H3b. *Closer valuation of women in higher education positively impacts subjective norms.*

H3c. *Closer valuation of women in higher education has a positive impact on the entrepreneurial intentions of women in higher education.*

H3d. *Social valuation of women in higher education positively impacts subjective norms.*

H3e. *Social valuation of women in higher education positively impacts perceived behavioral control.*

Considering the entrepreneurial intention model presented by Liñán et al. (2011) and the hypotheses to be tested, a structural model was developed (Figure 1). This structural model contains six latent variables. Four of them are endogenous (entrepreneurial intention, perceived behavior control, attitude to behavior and subjective norms), and two latent variables are exogenous (social valuation and closer valuation).

In this structural model, entrepreneurial intention depends directly on perceived behavioral control; subjective norms; closer valuation and attitude to behavior, and, indirectly, social valuation (Amofah & Saladrigues, 2020; Lopes, Teixeira, et al., 2020). Perceived behavioral control is directly influenced by subjective norms and social valuation and, indirectly, by closer valuation (Liñán et al., 2013; Vukovic et al., 2017). Finally, subjective norms are directly influenced by closer valuation and social valuation (Bagheri & Pihie, 2014; Lopes, Teixeira, et al., 2020), and attitude to behavior is directly influenced by subjective norms and closer valuation and, indirectly, by social valuation (Drnovsek & Erikson, 2005; Liñán et al., 2011).

3 | METHODOLOGY AND DATA COLLECTION

This research's main objective is to evaluate female entrepreneurial intention in the Portuguese academy. The quantitative methodology has the advantages of validating theories, establishing relationships between variables, replicating models, methods, and techniques in other samples (Hlady-Rispal & Jouison-Laffitte, 2014; Queirós et al., 2017). The quantitative methodology has been widely used in social situations as it (1) allows the direct analysis of the data, (2) has demonstrative strength, (3) allows generalization of the results due to its representativeness, and (4) allows inference to other contexts (Porta & Keating, 2008).

The questionnaire used in this research was already applied in Lopes, Teixeira, et al. (2020) and Liñán et al. (2011). This particular case has a sample of 731 observations collected through an online questionnaire on the social networks Facebook and Twitter. The questionnaire was applied to the higher education population in Portugal, and responses were collected between April 2017 and December 2020, and 731 received responses from female students were validated.

The applied questionnaire consists of seven groups of items: (1) entrepreneurial intention (four questions), (2) perceived behavioral control (four questions), (3) attitude to behavior (three questions), (4) subjective norms (three questions), (5) social valuation (two questions), (6) closer valuation (three questions), and (7) sociodemographic characteristics with four questions related to age, residence, educational qualifications, and employment experience. Except for sociodemographic characteristics, all the items mentioned above use a seven-point Likert-type scale, with 1—disagree to 7—totally agree.

Regarding sociodemographic characteristics, the women surveyed have an average age of 25.7 years, with 34.9% between 17 and 20 years old, 46.7% between 21 and 30 years old, and 18.4% older 31 years old. In terms of residence, 84.9% live in mainland Portugal, 7.8% in the Azores, and 7.3% in Madeira. Regarding the academic qualifications, 69.2% are undergraduate and 22.2% have a master's

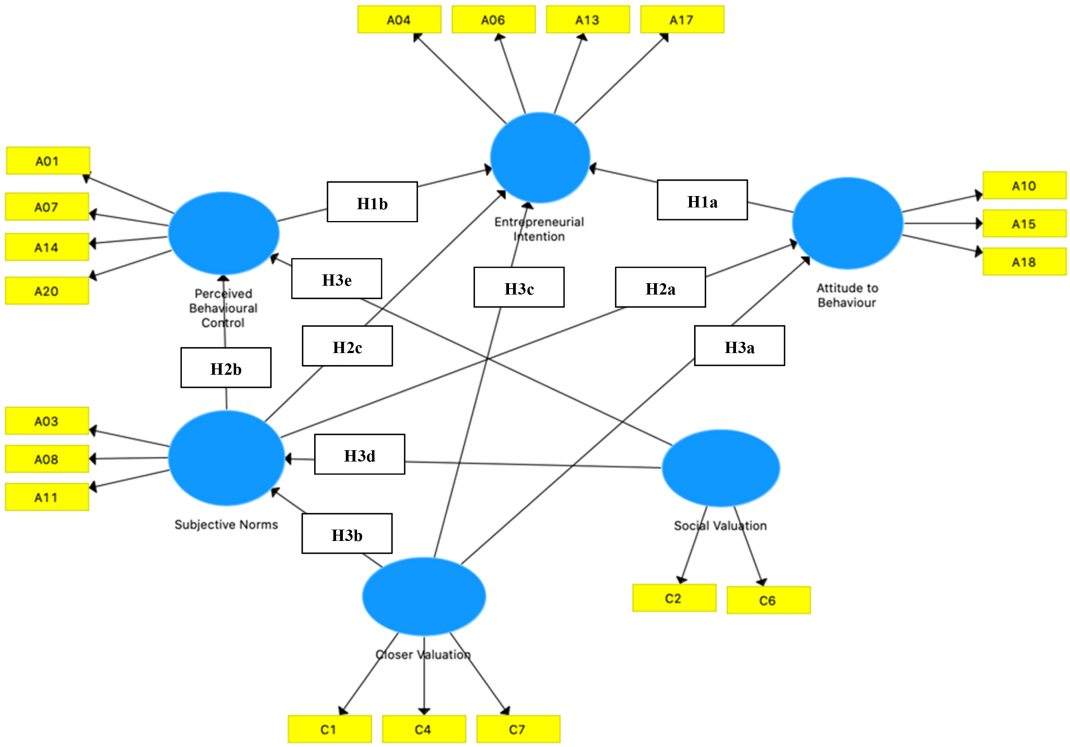


FIGURE 1 Structural model of entrepreneurial intention [Color figure can be viewed at wileyonlinelibrary.com]

degree. About 65.7% of women surveyed have already had employment experience.

As for the entrepreneurial intention, perceived behavioral control, attitude to behavior, subjective norms, social valuation, and closer valuation items of each construct, the mean and standard deviation of the replies are described in Table 1.

On average, in the entrepreneurial intention group, the items with the greatest agreement among respondents were those related to the commitment of all efforts to start and manage a new business (A06—4.75) and the determination to create an enterprise in the future (A13—4.25). Within the group of attitude to behavior, the item that generated the highest agreement, in average terms, was A10 (5.63). The interviewed women strongly agreed that they would start a business if they had the opportunity and resources. In the group of perceived behavioral control, the items related to a high possibility of success when trying to start a business (A14—4.51) and the ability to control the process of creating a new business (A07—4.43) were the items that deserved, on average, greater agreement among the women surveyed.

In the subjective norms, item A08 (5.69) regarding approval by the family closest to the decision to start a new business was the one that generated the greatest agreement. On average, closer control's items had a low agreement among the women surveyed, with the maximum average of 3.53 in item C4 regarding the valuation by friends of business activity above other activities and careers. In matters of social valuation, the item that deserved the greatest agreement was question C6 (4.72), which is related to the fact that the entrepreneurial activity is considered valuable, despite the risks in the country.

4 | PRESENTATION AND DISCUSSION OF RESULTS

The structural model of female entrepreneurial intention shown in Figure 1 was estimated using the partial least squares (PLS) method in the Smart PLS 3.0 software (Ringle & Sarstedt, 2016). As PLS is one of the approaches of structural equation models (SEMs), it allows estimating causal relationships between variables, not directly observable and defined from the theoretical model. It focuses on a set of latent variables created by the aggregation of various indicators that measure these variables (Henseler et al., 2016). Since the PLS method is a structural variance-based model, it aims to maximize the explained variance between the dependent variables of the model, that is, the R^2 value. Therefore, the advantages are the possibility of testing complex theoretical relationships defined by the literature and enhance the probability of identifying the significant relationships between the variables when these relationships exist in the sample (Hair et al., 2019; Ringle et al., 2020).

In the estimated model, six latent variables were created, of which four are endogenous (entrepreneurial intention, perceived behavioral control, attitude to behavior, and subjective norms) and two exogenous (social valuation and closer valuation), with a total of

TABLE 1 Mean and standard deviation of the items of each construct

	Mean	Standard deviation
Entrepreneurial intention		
A04—I am ready to do anything to be an entrepreneur	4.07	1.672
A06—I will make every effort to start and run my own business	4.75	1.834
A13—I am determined to create an enterprise in the future	4.25	1.67
A17—My professional goal is to be an entrepreneur	3.51	1.787
Attitude to behavior		
A10—If I had the opportunity and the resources, I would love to start a business	5.63	1.629
A15—Being an entrepreneur would give me great satisfaction	4.89	1.723
A18—Being an entrepreneur implies more advantages than disadvantages for me	4.16	1.54
Perceived behavioral control		
A01—Starting a company and keeping it viable would be easy for me	3.6	1.442
A07—I am able to control the process of creating a new business	4.43	1.509
A14—If I try to start a business, I would have a high chance of being successful	4.51	1.351
A20—I know all about the practical details needed to start a business	2.71	1.581
Subjective norms		
A03—My friends would approve of my decision to start a business	5.56	1.445
A08—My closest family would approve my decision to start a business	5.69	1.486
A11—My colleagues would approve my decision to start a business	5.56	1.389
Closer control		
C1—My closest family values entrepreneurial activity above other activities and careers	3.48	1.66
C4—My friends value business activity above other activities and careers	3.53	1.511
C7—My colleagues value business activity above other activities and careers	3.45	1.497
Social valuation		
C2—Culture in my country is highly favorable to entrepreneurial activity	3.79	1.55
C6—In my country, entrepreneurial activity is considered valuable, despite the risks	4.72	1.358

19 indicators. The sample size must be validated and fulfill one of the following conditions (Hair et al., 2012): (1) ten times the number of indicators or (2) ten times the number of structural paths directed to a latent variable in the structural model. The sample has 731 observations. It is 10 times greater than the number of indicators and 10 times greater than the established structural paths (10 structural paths were established between the latent variables), simultaneously fulfilling both conditions. The sample used is adequate for estimations using the PLS method. In addition, the application of this method does not require normal data, and the measurement scale used is generally metric as in the sample used. However, the ordinal scale is also accepted (Hair et al., 2012).

The overall quality of the model obtained by estimation using the PLS method is given by its predictive capacity. Nonetheless, the measurement and structural models that compose it should be validated. The most used measure is reliability and validity, these are instruments to mediate the relationship between latent and observed variables in the model, which implies an analysis of the reliability of each latent variable at the indicator level and convergent and discriminant validity. This measure is based on the analysis of the indicator factor loadings, the reliability, and the average variance extracted (AVE) of each indicator used, as presented in Table 2.

The reference values for the reliability coefficients of the latent variables are .70 (Hair et al., 2019). All reliability coefficients given by the composite reliability estimated in the model are higher than the reference value, as presented in Table 2 (attitude to behavior > .882, closer valuation > .889, entrepreneurial intention > .907, perceived behavior control > .848, social valuation > .797, and subjective norms > .887). In this way, all latent variables are "satisfactory to good"; they are above the acceptable values for the estimated model's outer loadings, reliability, and validity.

Indicators loads allow to analyze the reliability of the indicator and are obtained by making the square of the outer loadings of reflective constructs. Once used together, they provide a necessary and sufficient measure of the measurement model, clearly describing the relationship between the latent variables and their indicators. Latent variables in the model have high indicator loads (greater than .721). The reliability between the observed indicators and the corresponding latent variable is measured by Cronbach's alpha, whose reference value is .700 (Hair et al., 2012). All latent variables have a Cronbach's alpha greater than .700, except for the social valuation latent variable, whose Cronbach's alpha is only .03 lower than the reference value (social valuation > .697).

TABLE 2 Results of the model's reliability and validity measures

	Attitude to behavior	Closer valuation	Entrepreneurial intention	Perceived behavioral control	Social valuation	Subjective norms
A10	.834					
A15	.900					
A18	.798					
C1		.842				
C4		.863				
C7		.854				
A04			.823			
A06			.789			
A13			.881			
A17			.872			
A01				.721		
A07				.826		
A14				.813		
A20				.687		
C2					.855	
C6					.772	
A03						.852
A08						.822
A11						.877
Cronbach's alpha	.799	.817	.863	.762	.697	.810
Composite reliability	.882	.889	.907	.848	.797	.887
Average variance extracted	.714	.728	.709	.583	.663	.724

The AVE of the latent variables specifies the estimate of how much the variation of the indicators is due to the inherent latent variable, having as reference value .500 (Hair et al., 2019). In the estimated model, for all latent variables, an AVE greater than .50 was obtained (attitude to behavior > .714, closer valuation > .728, entrepreneurial intention > .709, perceived behavior control > .583, social valuation > .663, and subjective norms > .724).

Finally, as a measure of discriminant validity, we use the Fornell–Larcker and heterotrait-monotrait (HTMT) criteria. According to Hair et al. (2013), the Fornell–Larcker criterion "compares the AVE of each construct with the squared correlations between constructs." The HTMT is a measure of similarity between latent variables. It should be accepted if the HTMT value is below .90, whereas the discriminant validity has been established between two latent variables (Henseler et al., 2015). Table 3 presents the results of applying the Fornell–Larcker and HTMT criteria.

Each AVE of the latent variables (elements in the main diagonal in bold) is superior to all the square correlations of the latent variables (elements outside the diagonal), thus establishing the discriminating validity by the Fornell–Larcker criterion of each of the six latent variables. The values of the HTMT ratio are less than .90; therefore, there is discriminant validity between the two latent variables under analysis.

Since the structural model shown in Figure 2 has been validated by measurement and structural models, the PLS algorithm was applied to this model (the algorithm converged the parameter of the PLS-SEM algorithm after the seventh iteration) in Smart PLS 3.0, which resulted in the PLS path model.

In this PLS path model, the 19 indicators are represented in the rectangles and the six latent variables in the circles. Since PLS is a variance-based method, it aims to maximize the explained variance between the dependent variables of the model, that is, the value of R^2. Thus, to assess the predictive precision of this model, it is necessary to analyze the R^2 of the endogenous latent variables: entrepreneurial intention (R^2: .707), perceived behavioral control (R^2: .188), attitude to behavior (R^2: .264), and subjective norms (R^2: .073).

There is no consensus in the literature on the reference values of R^2, as these differ according to the area of study. Cohen (1988) refers that, in the behavioral sciences area, an R^2 of .02 represents a "small" effect, .15 represents a "medium" effect, and .35 represents a "high" effect. As the object of this research is the female entrepreneurial intention through motivational factors, this research is part of the behavioral sciences in business. Following the reference values of Cohen (1988), for the R^2 on the entrepreneurial intention latent variables, it is "high" for the latent variable perceived behavior control,

TABLE 3 Results of applying the Fornell–Larcker and HTMT criterions

	Attitude to behavior	Closer valuation	Entrepreneurial intention	Perceived behavioral control	Social valuation	Subjective norms
Fornell–Larcker Criterion						
Attitude to behavior	**.845**					
Closer valuation	.404	**.853**				
Entrepreneurial intention	.761	.410	**.842**			
Perceived behavioral control	.604	.367	.701	**.764**		
Social valuation	.176	.299	.205	.195	**.815**	
Subjective norms	.389	.188	.380	.423	.242	**.851**
HTMT criterion						
Attitude to behavior						
Closer valuation	.485					
Entrepreneurial intention	.447	.467				
Perceived behavioral control	.761	.461	.856			
Social valuation	.279	.466	.315	.297		
Subjective norms	.480	.222	.458	.523	.378	

Abbreviation: HTMT, heterotrait-monotrait.

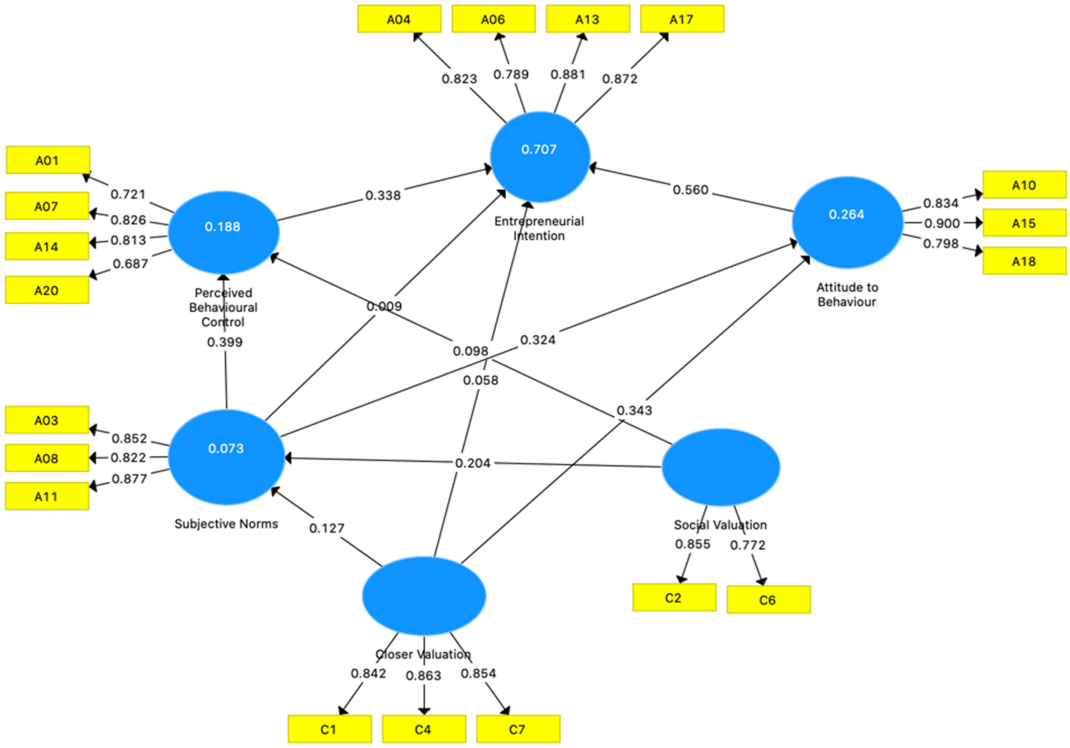


FIGURE 2 Partial least squares (PLS) path model [Color figure can be viewed at wileyonlinelibrary.com]

"medium" for the latent variable attitude to behavior, and "small" for the latent variable subjective norms.

Path coefficients measure the significant relationships between the latent variables. As presented in Table 4, the most significant relationships are established between attitude to behavior and entrepreneurial intention (.560, that is, a variation of 1% in the attitude to behavior variable has a positive impact of 56% on the entrepreneurial intention variable) and between subjective norms and perceived behavioral control (.399, that is, a variation of 1% on the variable subjective norms has a positive impact of 39.9% on the variable perceived behavioral control).

TABLE 4 Significance testing results of the structural model path coefficients

	Original sample (*O*)	Sample mean (*M*)	Standard deviation (*SD*)	*p*-Values
H1a: Attitude to behavior > Entrepreneurial intention	.560	.559	.026	.000*
H1b: Perceived behavioral control > Entrepreneurial intention	.338	.340	.032	.000*
H2a: Subjective norms > Attitude to behavior	.324	.328	.035	.000*
H2b: Subjective norms > Perceived behavioral control	.399	.400	.035	.000*
H2c: Subjective norms > Entrepreneurial intention	.009	.009	.021	.674
H2c: Subjective norms > Perceived behavioral control > Entrepreneurial intention	.135	.136	.018	.000*
H2c: Subjective norms > Attitude to behavior > Entrepreneurial intention	.182	.183	.020	.000*
H3a: Closer valuation > Attitude to behavior	.343	.343	.034	.000*
H3a: Closer valuation > Subjective norms > Attitude to behavior	.041	.041	.012	.001*
H3b: Closer valuation > Subjective norms	.127	.125	.035	.000*
H3c: Closer valuation > Entrepreneurial intention	.291	.291	.030	.000*
H3c: Closer valuation > Attitude to behavior > Entrepreneurial intention	.192	.192	.022	.000*
H3c: Closer valuation > Subjective norms > Entrepreneurial intention	.001	.001	.003	.695
H3d: Social valuation > Subjective norms	.204	.204	.037	.000*
H3e: Social valuation > Perceived behavioral control	.098	.099	.040	.015*
H3e: Social valuation > Subjective norms > Perceived behavioral control	.081	.081	.016	.000*

*$p < .05$.
Source: Authors' calculations.

The bootstrap method (the nonparametric technique allows to analyze the accuracy of the PLS parameter estimates) was applied to test the hypotheses formulated in this study at a significance level of 95%. We conclude that all latent variables are very significant at $p < .05$, with 95% confidence.

Attitude to behavior measured by the will to start a new business if there was an opportunity, by the satisfaction of being an entrepreneur, and by the recognized advantages of being an entrepreneur has a positive impact ($\beta = .560$) on the entrepreneurial intention of women in higher education, confirming Hypothesis 1a mentioned by Farrukh et al. (2018), Liñán et al. (2011), and Ridha et al. (2017).

The easiness measures perceived behavioral control to start a business, keeping it viable, the ability to control the process of creating a new business, the likelihood of being successful in creating a business, and the knowledge of all the practical details needed to start a new business have a positive impact ($\beta = .338$) on entrepreneurial intention of women in higher education, thus confirming Hypothesis 1b. These results are in line with Ajzen (1991) contributions and Liñán et al. (2011).

The subjective norms are measured by the approval by colleagues, friends, and family of the decision to start a new business, has a positive impact on the attitude toward the behavior of women in higher education ($\beta = .324$) and in perceived behavioral control of these women ($\beta = .399$), therefore, confirming Hypotheses 2a and 2b. In this sense, we can affirm that the present research uses contributions from Krueger and Carsrud (1993) and Lortie and Castogiovanni (2015). The subjective norms positively impact entrepreneurial intention ($\beta = .009$), but this relationship is not statistically significant, so Hypothesis 2c is rejected.

However, the subjective norms have an indirect positive impact in the entrepreneurial intention ($\beta = .135$) when mediated by perceived behavioral control (subjective norms > perceived behavioral control: $\beta = .399$; perceived behavioral control > entrepreneurial intention: $\beta = .338$) and when mediated by attitude to behavior ($\beta = .182$; subjective norms > attitude to behavior: $\beta = .324$; attitude to behavior > entrepreneurial intention: $\beta = .560$), therefore confirming Hypothesis 2c. These conclusions are in line with the contributions of Ferri et al. (2018) and Karimi et al. (2013). Therefore, Hypothesis 2c is partially confirmed.

The closer valuation is measured by the valuation from family, friends, and colleagues closest to the business activity at the expense of other activities and careers, and has a direct positive impact on the attitude toward the behavior of women in higher education ($\beta = .343$), in subjective norms ($\beta = .127$), and in the entrepreneurial intention of women in higher education ($\beta = .291$), confirming Hypotheses 3a, 3b, and 3c. These findings are, therefore, in line with the contributions of Liñán et al. (2011). The closer valuation has an indirect positive impact in the attitude to behavior ($\beta = .041$) when mediated by subjective norms (closer valuation > subjective norms:

TABLE 5 Summary of hypotheses

Hypotheses	Status
H1a: Attitude toward behavior has a positive impact on the entrepreneurial intentions of women in higher education	Confirmed
H1b: Perceived behavioral control has a positive impact on the entrepreneurial intentions of women in higher education	Confirmed
H2a: Subjective norm has a positive impact on the attitude toward the behavior of women in higher education	Confirmed
H2b: Subjective norm has a positive impact on the perceived behavioral control of women in higher education	Confirmed
H2c: Subjective norm has a positive impact on the entrepreneurial intentions of women in higher education	Partially confirmed
H3a: Closer valuation has a positive impact on the attitude toward the behavior of women in higher education	Confirmed
H3b: Closer valuation of women in higher education positively impacts subjective norms	Confirmed
H3c: Closer valuation of women in higher education has a positive impact on the entrepreneurial intentions of women in higher education	Partially confirmed
H3d: Social valuation of women in higher education positively impacts subjective norms	Confirmed
H3e: Social valuation of women in higher education positively impacts perceived behavioral control	Confirmed

β = .127; subjective norms > attitude to behavior: β = .324), confirming again Hypothesis 3a. Moreover, the closer valuation has an indirect positive impact in the entrepreneurial intention when mediated by attitude to behavior (β = .192; closer valuation > attitude to behavior: β = .343; attitude to behavior > entrepreneurial intention: β = .560), confirming again Hypothesis 3c. Finally, the closer valuation has an indirect positive impact in the entrepreneurial intention when mediated by subjective norms (β = .001; closer valuation > subjective norms: β = .127; subjective norms > entrepreneurial intention: β = .009). However, the relationship between closer valuation and entrepreneurial intention when mediated by subjective norms is not statistically significant. Therefore, Hypothesis 3c is only partially confirmed.

The social valuation of women in higher education is highly favorable to entrepreneurial activity despite the risks and the country's culture. It has a positive impact on subjective norms (β = .204) and in perceived behavioral control (β = .098), therefore confirming Hypotheses 3d and 3e. The confirmation of the last two hypotheses under study indicates that the present research confirms the contributions previously identified by Liñán et al. (2011). The social valuation has an indirect positive impact in the perceived behavioral control (β = .081) when mediated by subjective norms (social valuation > subjective norms: β = .204; subjective norms > perceived behavioral control: β = .399), confirming again the Hypothesis 3e.

Summary results on the hypotheses are presented in Table 5.

5 | CONCLUSION

The starting point for the present research is the analysis of women's entrepreneurial intention in Portuguese academia. Since studies based on gender entrepreneurial intentions in academia are still scarce, this research is based on a sample of higher education female students from a peripheral region of Europe, such as Portugal.

In general, the partial or total confirmation of all the formulated hypotheses for this research suggests that the literature on entrepreneurial intention can be used as a theoretical framework for entrepreneurial intention and can be applied when analyzing the dynamics of these intentions within the female population.

The present research contributes to strengthening the theoretical framework on gender entrepreneurial intention, thus expanding the contributions on female entrepreneurial intention in academia. Concerning practical contributions, the present research confirms the arguments of policymakers to enhance entrepreneurship based on the relationship of gender forces acting as intended by part of the female community and potential entrepreneurs.

Future investigations could explore further variables and conditions that might influence the entrepreneurial intentions of female students. Moreover, it would also be interesting to compare the results obtained in Portugal with other countries in which entrepreneurship is captivating and where company creation rates by graduated female entrepreneurs are high. From this analysis, lessons can be learned on the policies and strategies to promote female entrepreneurship in Portugal and jobs creation through emerging entrepreneurship. Another possibility for future research would be to conduct longitudinal studies, which can show the evolution of the indicators over time and make temporal comparisons. It would be pertinent, for example, to compare the behavior of female students in the environments of economic growth and recession.

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