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Education first? Triggering vs. jeopardizing entrepreneurial intentions

Abstract

Purpose – Drawing on the Theory of Planned Behaviour (TPB) and Social Cognitive Theory (SCT), this study deepens into how, in entrepreneurship-unfriendly environments, university students' entrepreneurial intention (EI) is shaped, particularly focusing on the role of entrepreneurship education (EE) and an entrepreneurial family context (EFC).

Design/methodology/approach - Upon a sample of 688 students at a Spanish university, our hypotheses were tested using GUESSS project data, through PLS-SEM regression and multigroup analysis (entrepreneurship course vs. non-course students).

Findings – Positive and significant impacts of entrepreneurial attitude (EA) and entrepreneurial self-efficacy (ESE) on EI, and of subjective norms (SN) on EA and ESE, were found in both groups. Conversely, the impacts of an EFC on EA, SN and EI were significant only for course students, and the impact of SN on EI was significant only for non-course students. The impact of EFC on ESE was not significant for either group.

Originality – This investigation deepens into how the TPB components shape university students' EI in entrepreneurship-unfriendly contexts, and offers an original multigroup analysis to explore the role of EE in such dynamics. A novel contribution of this study is the finding that EE is a relevant catalyzer for making entrepreneurial parents become an effective trigger for entrepreneurship. Conversely, EE was, unexpectedly, deemed irrelevant or counter-productive for some aspects of entrepreneurial dynamics. Further research is encouraged, deepening into the role of social and cultural contexts.

Keywords – entrepreneurial family context, entrepreneurial intention, entrepreneurship education, entrepreneurship-unfriendly environments, GUESSS, higher education, Theory of Planned Behaviour.

Paper type – Research paper.

1. Introduction

Promoting entrepreneurship among university students is crucial, due to their rising interest in pursuing entrepreneurial careers (Bergmann *et al.*, 2016). This interest has resulted in a surge of entrepreneurship courses (Chhabra *et al.*, 2021), drawing significant research attention to the role of entrepreneurship education in fostering students' entrepreneurial behaviour (Laguía González *et al.*, 2019; Lima *et al.*, 2015; Mohamad *et al.*, 2015; Rauch and Hulsink, 2015; Rodrigues *et al.*, 2021).

A substantial number of recent literature reviews (Hägg and Gabrielsson, 2020; Maheshwari *et al.*, 2022; Pérez-Macías *et al.*, 2022; Shabbir *et al.*, 2022), meta-analyses (see e.g., Martínez-Gregorio *et al.*, 2021), and bibliometric analyses (see e.g., Loi *et al.*, 2023), agree on the fact that there has been a surge in studies that, through the last decades, have inquired into the factors that shape entrepreneurial intention, including the role of entrepreneurship education programmes as a particularly relevant aspect (Gabrielsson *et al.*, 2020; Nájera-Sánchez *et al.*, 2023). The most popular theoretical framework used for such research has been the Theory of Planned Behaviour (TPB), which conceptualizes the strength of intention as an immediate antecedent of behaviour (Ajzen, 1991). In entrepreneurship research, this means that entrepreneurial intention is a strong predictor of entrepreneurial behaviour, as widely acknowledged in the literature (Nájera-Sánchez *et al.*, 2023). In turn, according to the TPB, antecedents of intention are attitude towards certain behaviour,

subjective norms, and Perceived Behavioural Control (PBC) – the latter composed of locus of control and self-efficacy (Ajzen, 1991). In mainstream entrepreneurship research, this has implied that entrepreneurial attitude, subjective norms towards entrepreneurship (expectations from people in the close social environment), and perceived behavioural control towards entrepreneurship (with a special emphasis on entrepreneurial self-efficacy, i.e., self-perceptions of entrepreneurship-friendly personal competences), have been the key variables that, from different angles and with specific adaptations, have been generally considered as antecedents of entrepreneurial intention in a high diversity of (theoretical and empirical) studies (Lortie and Castogiovanni, 2015). Specifically, research has confirmed that TPB components explain 30-50 per cent of entrepreneurial intention (Liñán and Chen, 2009).

Besides, SCT emphasizes the vital role of cognitive components in the process of social learning (Bandura, 1986). SCT posits that human behaviour dynamics are shaped by mutual interactions among environmental, behavioural, and cognitive or personal attributes (Bandura, 1986). In this sense, families, and particularly parental behaviours, play a crucial role in children's lives, as they form a significant part of the socio-cultural environment influencing a child's cognitive development (Bandura, 1986). In a higher education context, it has been argued that exposure to role models triggers entrepreneurial learning, providing motivation and inspiration, support, and guidance, to students to become entrepreneurs, with a positive effect on entrepreneurial intention (Karimi *et al.*, 2014). Consistent with this, prior research has found that the integration of role models into educational programmes has a positive effect on entrepreneurial career intentions, and that this effect is even stronger in unfavourable environments (Block and Walter, 2017). Hence, including entrepreneurial parents' role models (based on SCT) as an additional variable in the TPB seems valuable, so as to examine whether and how this additional variable may influence students' entrepreneurial intention.

However, since over half of the studies exploring students' entrepreneurial intentions have been conducted in Asia, it is important to explore other regions – including Europe – (Maheshwari *et al.*, 2022). Besides, within the European context, Southern European regions can be regarded as entrepreneurship-unfriendly contexts (Eurovoc 2017, Hofstede 1980, 2001; Seguí-Mas *et al.*, 2018). Spain, in particular, can be considered as a relatively entrepreneurship-unfriendly context vs. the UK (Liñán *et al.*, 2013) and, generally, vs. Anglo, Germanic and Northern European counterparts, given their cultural orientations in dimensions such as individualism (higher), uncertainty avoidance (lower), or power distance (lower), all of which stand out among the cultural features that, in the literature, have been identified as entrepreneurship-friendly (Pérez-Macías *et al.*, 2022). For these reasons, we deem Spain a particularly promising target for deeper exploration of the dynamics shaping entrepreneurial intentions in the context of entrepreneurship education.

Regarding extant research outcomes, although entrepreneurship education has been generally found to be an important predictor of students' entrepreneurial intention (Lima *et al.*, 2015), the diversity of methodological approaches and unequal research quality levels, and the differences regarding duration and contents of intervention programmes, contribute to a possible over-estimation of this relationship (Martínez-Gregorio *et al.*, 2021). Some studies even showed a non-significant or even negative relationship between entrepreneurship education and entrepreneurial intention (Fayolle *et al.*, 2006). Consequently, notwithstanding the generally supported connection between entrepreneurship education and entrepreneurial intention, results are still mixed and non-conclusive.

In this context, a specific aspect of entrepreneurship dynamics that has emerged as particularly relevant in shaping entrepreneurial intention is, enlarging the TPB approach to entrepreneurship research (Lortie and Castogiovanni, 2015), the fact of having influential role models (Abbasianchavari and Moritz, 2021) and, particularly, family members (especially the

parents) who have been entrepreneurs (Amofah and Saladrighes, 2022). Research to date has shown that, although such role models generally exert a positive influence on entrepreneurial intention (Amofah and Saladrighes, 2022), empirical evidence is limited (Abbasianchavari and Moritz, 2021), and the impact of family business processes in entrepreneurial intention is still unclear (Loi *et al.*, 2023), so we identify a stimulating research gap which grants further inquiry. Moreover, in relatively entrepreneurship-unfriendly contexts (such as Spain), the influence of family role models may be particularly important, as a significant counterbalance to the overall environmental unfriendliness. As a result, the underexplored influence that the interplay between family role models and higher education entrepreneurship courses exerts on entrepreneurial intention, in a context of TPB dynamics, with a focus on entrepreneurship-unfriendly environments, can be targeted as a specific, highly inspiring research gap that deserves deeper exploration. This investigation aims at tackling such a research gap.

Therefore, we formulate the following research questions:

- How do entrepreneurial attitude, subjective norms and entrepreneurial self-efficacy influence the entrepreneurial intention of university students in entrepreneurship-unfriendly environments?
- How does an entrepreneurial family context influence entrepreneurial attitude, subjective norms, entrepreneurial self-efficacy and entrepreneurial intention of university students in entrepreneurship-unfriendly environments?
- Are there any differences in the above relations between the students who took an entrepreneurship course and those who did not?

This study addresses a timely research gap through a novel approach. Applying a multigroup analysis, we test our hypotheses with data from the latest Global University Entrepreneurial Spirit Students' Survey (GUESSS) at the Universitat Politècnica de València in Spain.

This paper is structured as follows. After this introduction, we conduct a literature review and introduce our hypotheses. In the third section, around methodological issues, we explain the study setting, data collection, and measures. Our empirical results are described in the fourth section. The last (fifth) section presents a final discussion and conclusion.

2. Literature Review and Hypotheses

The TPB conceptualizes the strength of intention as an immediate antecedent of behaviour (Ajzen, 1991). Attitude towards certain behaviours refers to an individuals' favourable or unfavourable assessment of such behaviours (Ajzen, 1991), originating from previous experiences and perceptions shaped over lifetime (Kuehn, 2008). Applied to entrepreneurship research, the TPB posits that antecedents of entrepreneurial intention are attitude towards an entrepreneurial behaviour, subjective norms towards entrepreneurship, and Perceived Behavioural Control (PBC) towards entrepreneurship, in turn composed of locus of control and self-efficacy (Ajzen, 1991; Lortie and Castogiovanni, 2015).

Consistent with the idea that showing a favourable attitude towards a behavioural outcome (such as becoming an entrepreneur) is a key antecedent for the subsequent intention to engage in that behaviour, several empirical studies worldwide confirm a positive and significant relationship between students' entrepreneurial attitude and intention. For instance, Laguía González *et al.* (2019) and Amofah and Saladrighes (2022) in Spain, Rodrigues *et al.* (2021) in Portugal, and Azim and Islam (2002) in Saudi Arabia, can be highlighted. Besides, relevant literature reviews have found mostly supporting evidence for such a relationship across diverse contexts (see e.g., Lortie and Castogiovanni, 2015).

Furthermore, entrepreneurship education has a high potential to shape a young person's entrepreneurial intentions (Rauch and Hulsink, 2015), and it has been generally found to be an important predictor of students' entrepreneurial intention, as recent literature

reviews have concluded (see e.g., Gabrielsson *et al.*, 2020; Nájera-Sánchez *et al.*, 2023). For instance, Zhang *et al.* (2014) found a positive and significant relation between entrepreneurship education and entrepreneurial intention among Chinese students; Mohamad *et al.*, (2015) found a consistent connection between entrepreneurship education and entrepreneurial intention in Malaysian graduates; and Karimi *et al.* (2016) evidenced a causal relationship between entrepreneurship education and entrepreneurial intention among entrepreneurship education students in Iran. Recent research has also evidenced that entrepreneurship education among high school students can positively impact entrepreneurial intention (Porfírio *et al.*, 2023), reinforcing the idea that the earlier the better in starting entrepreneurial education.

Therefore, we propose the following hypothesis:

H1. University students' entrepreneurial attitude will be positively related to their entrepreneurial intention, and this relationship will be stronger for those students who take a course on entrepreneurship.

According to the TPB, subjective norms are perceived normative beliefs and expectations of significant people on target behaviour (Ajzen, 2011; Wang *et al.*, 2021), setting the standards for assessing the degree to which an individual's behaviour fulfils the desires of other influential individuals, such as relatives, work colleagues, or friends (Ajzen, 1991). In the context of the TPB, when the target behaviour of an individual is to establish an entrepreneurial venture, the influence of the surrounding social context implies that opinions and expectations from people in the in the social circle of that individual are considered relevant and, as such, these opinions and expectations can influence the individual's intentions towards entrepreneurship. Accordingly, the entrepreneurship literature includes investigations that have reported a positive and significant relationship between subjective norms and entrepreneurial intention (e.g., Karimi *et al.*, 2016; Wang *et al.*, 2021), findings

which are also supported by relevant literature reviews (see e.g., Lortie and Castogiovani, 2015). Given the preceding arguments, and the positive influence of entrepreneurship education on entrepreneurial intention (Gabrielsson *et al.*, 2020; Karimi *et al.*, 2016; Mohamad *et al.*, 2015; Nájera-Sánchez *et al.*, 2023; Zhang *et al.*, 2014), which will be henceforth considered for all subsequent hypotheses, we hypothesize:

H2. University students' subjective norms will be positively related to their entrepreneurial intention, and this relationship will be stronger for those students who take a course on entrepreneurship.

The TPB also posits PBC as antecedent of entrepreneurial intention. PBC, comprising self-efficacy and locus of control, reflects how individuals perceive the ease or difficulty in performing target behaviour (Ajzen, 1991; Wang *et al.*, 2021). In a TPB context, several aspects that define personal beliefs and self-confidence around several skills and capabilities useful for engaging into entrepreneurial behaviour are also important requirements for, previously, acquiring the motivation and being engaged enough towards developing entrepreneurial intention. Recently, Wang *et al.* (2021) found a significant influence of PBC on academic entrepreneurial intention, and relevant literature reviews have also supported these findings (see e.g., Lortie and Castogiovani, 2015).

Deepening into the PBC components, one of them, self-efficacy, encompasses an individual's belief in their ability to perform a task in a specific situation successfully. Four primary antecedents contribute to developing personal efficacy expectations: performance achievements, vicarious experience, social persuasion, and physiological conditions, such as anxiety and arousal (Bandura, 1986). Building on these ideas, SCT pinpoints that self-efficacy is an important element for shaping individual behaviour. Accordingly, a meta-analysis review of the TPB conducted by Armitage and Conner (2001) showed that self-efficacy explains an additional 7% of variance in intention, while PBC explains an extra 5%.

Also, Amofah's and Saladríguez's (2022) recent study, using self-efficacy as a proxy for PBC, found a positive connection between PBC and entrepreneurial intention. For these reasons, we herein focus on self-efficacy rather than on PBC, following previous studies like those of Moriano *et al.* (2011), who analysed students from five countries, and the previously mentioned study by Laguía González *et al.* (2019). Consistent with this perspective, another recent study (Azim and Islam, 2022) also evidenced a positive and significant relation between entrepreneurial self-efficacy and entrepreneurial intention. Moreover, self-efficacy has been recently highlighted as a key aspect in triggering entrepreneurial intention in the context of entrepreneurship education (Shabbir *et al.*, 2022). Hence, we hypothesize:

H3. University students' entrepreneurial self-efficacy will be positively related to their entrepreneurial intention, and this relationship will be stronger for those students who take a course on entrepreneurship.

Although the TPB has been widely used to predict entrepreneurial intention, the expectations from close people in one's social circle can also influence personal perceptions, preferences, expectations, and mental frameworks, in such a way that one's entrepreneurial attitude and self-efficacy can be also shaped by subjective norms. Consistent with this, and although these are not the most popularly investigated relations, there is some evidence suggesting that subjective norms influence not only entrepreneurial intention, but also entrepreneurial attitude and self-efficacy. A study conducted by Wang *et al.* (2021) among scientists at Chinese universities tested a complex model involving multiple mediation relationships. This model examined various paths explaining the factors influencing entrepreneurial intention, and found a significant and positive relationship between subjective norms and entrepreneurial attitude. Besides, using samples of Spanish students, Fernández-Pérez and Montes-Merino (2019) and, more recently, Amofah and Saladríguez (2022), found a positive relation between subjective norms and entrepreneurial attitude, and between

subjective norms and entrepreneurial self-efficacy. Connected to these issues, may we note that exposure to entrepreneurial role models in the general population (Farashah, 2015) and within family business settings (Carr and Sequeira, 2007; Pfeifer *et al.*, 2016), have all been positively associated to individuals' entrepreneurial self-efficacy. The underlying rationale implies that these role models' expectations (subjective norms) on the entrepreneurial potential of the target individual positively influence that individual's self-perception about his/her own entrepreneurial skills and potential (entrepreneurial self-efficacy).

Moreover, the above-explained importance given by the literature to entrepreneurship education's role in shaping entrepreneurial intention, can be also extended to the fact that taking entrepreneurship courses can reinforce the impact of expectations from close people in one's social circle (subjective norms) on personal perceptions, preferences, expectations, and mental frameworks (entrepreneurial attitude and self-efficacy). Consistent with this, and also from a TPB approach, Walter and Dohse (2012), using a sample of German students, found a positive and significant relation between entrepreneurship education and entrepreneurial attitude, as more lately Valencia-Arias *et al.* (2022) did with their sample of Colombian students. In general, consistent with our previous H1, H2 and H3, whereby the effect of, respectively, entrepreneurial attitude, subjective norms, and entrepreneurial self-efficacy on entrepreneurial intention is reinforced by entrepreneurship education, we extend the boosting effect of the latter variable on the impact from subjective norms on entrepreneurial intention and entrepreneurial self-efficacy. Hence, we propose the following hypotheses:

H4. University students' subjective norms will be positively related to their entrepreneurial attitude, and this relationship will be stronger for those students who take a course on entrepreneurship.

H5. University students' subjective norms will be positively related to their entrepreneurial self-efficacy, and this relationship will be stronger for those students who take a course on entrepreneurship.

Another important factor in developing entrepreneurial attitude and intention, additional to the factors that comprise the TPB, is the family context, considering that an entrepreneurial family background forms part of an individual's personal history about entrepreneurship (Krueger, 1993). In fact, a promising research gap has been recently identified regarding the role that a family business history may play in younger family members' willingness to develop entrepreneurial attitudes (Loi *et al.*, 2023).

Families, and particularly parents, acting as social influencers, convey information and evoke emotional reactions through modelling, instruction, and persuasion (Garcia *et al.*, 2019). Furthermore, entrepreneurial parents' behaviours may well influence the way their children perceive expectations from their closest social circle, in such a way that parents' behaviour and social circle's expectations can become intertwined, implying that an entrepreneurial family context can influence social norms. Consistent with these reflections, and following the SCT (Bandura, 2001), parents are role models for their children, and children with an entrepreneurial family background tend to have more socialization experiences involving risk-taking, innovation, and proactivity (Marques *et al.*, 2012). Linking this point to SCT, accumulated evidence substantiates a positive correlation between the presence of role models and entrepreneurial self-efficacy. Role models offer opportunities for vicarious learning, where individuals learn from others, and serve as a potent source of social persuasion, instilling confidence in individuals to pursue an entrepreneurial career (BarNir *et al.*, 2011). Parents are early role models for children in acquiring social values, habits and attitudes (Scherer *et al.*, 1991), and can act as negative or positive models for entrepreneurship (Morales-Alonso *et al.* 2016). Prior research suggests that having

entrepreneurial parents increases the likelihood of entrepreneurial intentions (Zapkau *et al.*, 2015). Moreover, Mungai and Velamuri (2011) highlighted that parental impact is more prominent when the child has already become a young adult (18–21 years). Also, Walter and Dohse (2009, 2012) stated that role models affect all three of entrepreneurial intention antecedents, as suggested by the TPB. Consistently, the results of a study by Carr and Sequeira (2007) showed significant direct effects of prior exposure to a family business on entrepreneurial intention, and significant indirect effects via the mediating variables of entrepreneurial attitude, subjective norms, and PBC.

Moreover, by observing how role models navigate challenges and stress, individuals can better develop strategies to address difficulties and maintain a positive physiological state. Numerous studies have consistently affirmed a positive association between students' exposure to entrepreneurial role models and their entrepreneurial self-efficacy (BarNir *et al.* 2011). These arguments, applied to situations whereby the role models are the parents of the individual exposed to the entrepreneurial family context, support the notion that entrepreneurial parents can impact positively on their sons and daughters' self-perception of entrepreneurial capabilities.

Furthermore, an entrepreneurial family context, in addition to above-discussed connections to entrepreneurial attitude, subjective norms, and entrepreneurial self-efficacy, can be also directly related to entrepreneurial intention. However, despite the pivotal role of parental behaviours in shaping career choices, there is a lack of understanding regarding how the emotional support provided by parents influences the succession intentions of the next generation (*cf.*, Garcia *et al.* 2019) – thus reinforcing a promising research gap also tackled by our investigation. Related to this discussion, it must be acknowledged that the choice intentions of individuals born into a family-owned business often reflect their experiences while growing up in that context (Zellweger *et al.*, 2011).

Consistently, relevant studies have evidenced a positive relation between an entrepreneurial family context and entrepreneurial intention (Amofah and Saladrighes, 2022; García-Rodríguez *et al.*, 2017; Laguía González *et al.*, 2019). In turn, Feder and Nitu-Antonie (2017) supported a positive relationship between an entrepreneurial family context and entrepreneurial intention and TPB components. Other research suggests that a family entrepreneurial background has a direct effect on entrepreneurial intention, and an indirect effect through antecedents of entrepreneurial intention because it provides individuals with insights into entrepreneurial activity and the required skills to be an entrepreneur (Palmer *et al.*, 2021). Moreover, Looi and Khoo-Lattimore (2015), with Malaysian students, confirmed the direct-effect hypothesis of the relation between an entrepreneurial family context and entrepreneurial intention; and Rauch and Hulsink (2015) found a positive and significant effect of entrepreneurship education on entrepreneurial attitude and PBC (self-efficacy in our model). Again, consistent with our previous hypotheses, whereby all relations are reinforced by entrepreneurship education, we extend the boosting effect of the latter variable on the impact from an entrepreneurial family context on entrepreneurial attitude, subjective norms, entrepreneurial self-efficacy, and entrepreneurial intention. Therefore, we propose the following hypotheses:

H6. University students' entrepreneurial family context will be positively related to their entrepreneurial attitude, and this relationship will be stronger for those students who take a course on entrepreneurship.

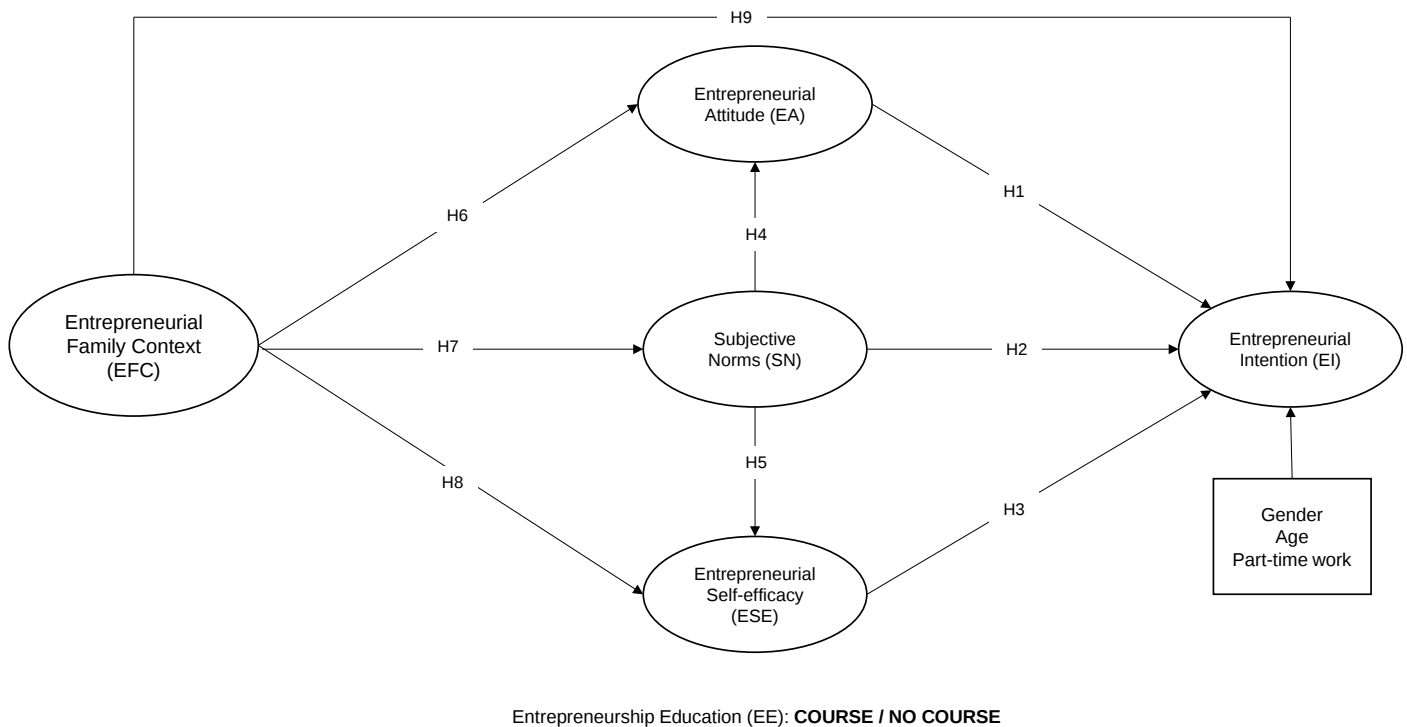
H7. University students' entrepreneurial family context will be positively related to their subjective norms, and this relationship will be stronger for those students who take a course on entrepreneurship.

H8. University students' entrepreneurial family context will be positively related to their entrepreneurial self-efficacy, and this relationship will be stronger for those students who take a course on entrepreneurship.

H9. University students' entrepreneurial family context will be positively related to their entrepreneurial intention, and this relationship will be stronger for those students who take a course on entrepreneurship.

The proposed model and hypotheses are shown in Figure 1.

Figure 1. Proposed model and hypotheses.



Source: Authors' own work.

3. Method

3.1. Study setting and data collection.

The GUESSS (Global University Entrepreneurial Spirit Students' Survey) 2018 report extensively explores student entrepreneurship across 54 countries, utilizing data from over 208,000 responses from more than 3,900 universities. This 2018 edition aimed to delineate

students' entrepreneurial intentions and activities. GUESSS used snowball sampling, sending the survey to the individual country teams, which forwarded the invitation to the university partners they had contacted. These partners then distributed the survey to their respective students. This recruitment method was intended to ensure a broad and diverse sample of student respondents from various universities and countries. Business and management students were the predominant group among the respondents, with other majors also well represented, indicating the study's broad academic scope (Sieger et al., 2018).

This research uses the Spanish version of the 2018 GUESSS dataset. The GUESSS questionnaire has several sections depending on the different entrepreneurial process stages of the respondents. The UPV dataset comprises 688 students, and the sample composition is described in Table I.

Table I. Sample profile.

Characteristic	Percentage (N= 688)
Gender	
Male	52.6%
Female	47.4%
Study level	
Undergraduate (bachelor's degree)	69.8%
Graduate (master's degree)	22.7%
Ph.D.	7.6%
Study field	
Arts and Humanities	4.7%
Business/Management	4.8%
Computer Sciences/IT	9.6%
Engineering	62.9%
Natural Science	7.6%
Others	10.5%
Fulltime student	
Yes	75.6%
No	24.4%
Entrepreneurship Course	
Yes	39,39%
No	60,61%

Source: Authors' own work.

On average, the respondents are 25 years old, with almost equal distribution of males and females. Most of the respondents are pursuing an engineering degree (62.9%), are fulltime students (75.6%), and just 1% would like to be self-employed. Finally, 271 students in our sample took an entrepreneurship course, and 417 did not.

3.2. Measures

Our dependent variable, Entrepreneurial Intention (EI), as the first step in the business creation process, shows the individual effort made to develop entrepreneurial behaviour. It is measured through a 7-point Likert scale (three of the independent variables in our model are also measured through a 7-point Likert scale, see below and Appendix); specifically, a 6-item scale, adapted from the scale proposed by Liñán and Chen (2009).

Our model includes six independent variables (the first three measured through a 7-point Likert scale):

- Entrepreneurial Attitude (EA), referring to the positive or negative beliefs in, and perceptions of, being an entrepreneur. This variable is measured through 6 items, adapted from the scale proposed by Liñán and Chen (2009).
- Subjective Norms (SN), capturing the perceived social pressure from relevant others to perform entrepreneurial behaviour. This variable is measured through 6 items, adapted from the scale proposed by Liñán and Chen (2009).
- Entrepreneurial Self-Efficacy (ESE), encompassing an individual's confidence in playing roles and performing entrepreneurship-related task. It is measured through 7 items adapted from the scales proposed by Chen *et al.* (1998), George and Zhou (2001), and Zhao *et al.* (2005).
- Entrepreneurial Family Context (EFC), referring to the relation between an individual and his/her immediate relatives who are self-employed, or support entrepreneurship in some other way (Lin *et al.*, 2015). This variable, not based on a Likert scale, considered

the notion of parental role models, referring to whether one parent is or both parents are entrepreneur(s), and asking: ‘Are your parents self-employed?’ (No; Yes, father; Yes, mother; Yes, both).

In addition, we included several control variables: gender (1=female, 0=male), age, and part-time worker (1=full-time student, 0=otherwise). We selected them based on earlier studies proving their value for entrepreneurship (Bergmann *et al.*, 2016; Dimov, 2017; Iversen *et al.*, 2016; Shirokova *et al.*, 2022).

4. Results

SmartPLS (version 4) was used to perform Partial Least Squares Structural Equation Modelling (PLS-SEM) and multigroup analysis (MGA). We selected this technique as it is nonparametric. As a preliminary check of the measurement model, a confirmatory factor analysis (CFA) was run with all measured constructs being modelled as correlated first-order factors. Table II presents the findings of the model’s reliability and convergent validity tests. The global fit statistics indicate acceptable fit. Specifically, SRMR=0.053 for both groups.

Table II. Measurement model reliability and convergent validity.

		MODEL 1: Group 0 → no entrepreneurship course					MODEL 2: Group 1 → entrepreneurship course				
Factor	Item	Standardized loadings	t-value (bootstrapped)	CA	CR	AVE	Standardized loadings	t-value (bootstrapped)	CA	CR	AVE
Dependent variable:											
EI	EI1	.773***	29.297	.942	.954	.778	.783***	24.201	.945	.957	.788
	EI2	.910***	99.886				.891***	62.719			
	EI3	.923***	113.908				.914***	61.380			
	EI4	.924***	109.191				.930***	89.005			
	EI5	.856***	60.034				.881***	61.315			
	EI6	.896***	78.480				.918***	84.631			
Predictor variables											
EA	EA1	.812***	40.446	.931	.948	.785	.801***	30.409	.929	.947	.781
	EA2	.916***	104.446				.902***	50.976			
	EA3	.874***	60.946				.870***	51.868			
	EA4	.910***	78.388				.919***	76.650			
	EA5	.915***	114.467				.920***	90.600			
SN	SN1	.847***	39.779	.800	.881	.710	.786***	14.092	.710	.837	.633
	SN2	.889***	52.279				.885***	37.120			
	SN3	.791***	22.306				.705***	9.641			
ESE	ESE1	.827***	44.621	.914	.931	.659	.789***	29.350	.890	.914	.603
	ESE2	.810***	41.183				.706***	15.871			
	ESE3	.821***	38.005				.771***	21.184			
	ESE4	.734***	29.166				.745***	20.604			
	ESE5	.824***	45.039				.806***	33.804			
	ESE6	.852***	58.209				.810***	36.515			
	ESE7	.811***	30.230				.802***	29.301			

Note: CA= Cronbach's alpha; CR= Composite Reliability; AVE= Average Variance Extracted.

***p<0.01; **p<0.05; *p<0.1

Source: Authors' own work.

As seen in Table II, all the presented Cronbach's Alphas (CA) were well above the recommended value of 0.70 (Cronbach, 1951). The composite reliability indicators show the mutual variance of a group of observed variables by testing a particular construct (Fornell and Larcker, 1981). It is suggested that a minimum 0.60 of composite reliability (CR) is acceptable (Bagozzi and Yi, 1988). Once again, we obtained excellent CR values as the minimum coefficient was observed in SN in the entrepreneurship education group, which was 0.837. Moreover, the AVE was estimated for each construct to ensure values above 0.50 (Fornell and Larcker, 1981) (see Table II). As evidence for convergent validity, our findings revealed that all the items were significantly linked ($p < 0.01$) with their hypothesized variables, and the size of each standardised load was above 0.60 (Bagozzi and Yi, 1988).

Discriminant validity is analysed in Table III. The shared variance between pairs of constructs was lower than the corresponding AVE (Fornell and Larcker, 1981). The HTMT ratio method developed by Henseler *et al.* (2009) was followed to determine the discriminant validity. Each ratio was below 0.85, which, according to Clark and Watson (1995), is a good result. Consequently, we concluded that the proposed model provided good reliability, and also good convergent and discriminant validity.

Table III. Measurement model discriminant validity.

Factor	F1	F2	F3	F4
(Group 0) No entrepreneurship course				
F1. EI	.882	.839	.388	.606
F2. EA	.809	.886	.368	.582
F3. SN	.345	.327	.843	.289
F4. ESE	.565	.540	.256	.812
(Group 1) Entrepreneurship course				
F1. EI	.887	.843	.343	.571
F2. EA	.838	.884	.450	.562
F3. SN	.289	.374	.796	.282
F4. ESE	.526	.513	.225	.777

Note: Diagonal values are AVE square roots. The values below the diagonal are latent variable correlations. The values above the diagonal are HTMT ratios.

Source: Authors' own work.

4.1. Structural model and Multigroup analysis

First of all, in order to evaluate the model's explanatory power, R² was assessed (Hair *et al.*, 2014). Following the minimum recommended value proposed by Falk and Miller (1992) of 0.10, we obtained values higher than 0.10 in the dependent constructs of both samples, except for SN and ESE (see Table IV). Additionally, the Q² blindfolding statistical tests (Geissler, 2013) were also above zero, which thus confirmed the model's predictive value, as recommended by Henseler *et al.* (2009) (see Table IV).

Table IV. Evaluation of the estimated models.

Construct	(Group 0)		(Group 1)	
	No entrepreneurship course		Entrepreneurship course	
	R ²	Q ²	R ²	Q ²
EI	.687	.529	.726	.562
EA	.118	.083	.159	.113
SN	.003	.001	.021	.001
ESE	.067	.042	.052	.029

Source: Authors' own work.

Moreover, the structural model demonstrates an acceptable fit to the data for Model 1 (no entrepreneurship course group, SRMR=0.048) and for Model 2 (entrepreneurship course group SRMR=0.05). The most used criterion for a good fit is that SRMR should be less than 0.08 (Hu and Bentler, 1998).

Before performing the MGA, the first step was measuring invariance, as Henseler *et al.* (2016) proposed. According to them, composite measurement invariance (MICOM) assesses measurement invariance to compare and determine the MGA group-specific differences of PLS-SEM results, which entails the following steps (Rasoolimanesh *et al.*, 2017): 1) a configural assessment of invariance; 2) setting up a compositional invariance assessment; 3) assessing equal means and variances.

Table V shows the results of Henseler's MGA (Henseler *et al.*, 2009) and the permutation (Chin and Dibbern, 2010). Henseler's MGA compares group bootstrap estimates from each bootstrap sample, where p values lower than 0.05 or higher than 0.95 show significant differences between specific path coefficients across the two groups at the 5 per cent level (Henseler *et al.*, 2009).

Table V. Results of invariance measurement testing using permutation.

Construct	Configural invariance (same algorithms for both groups)	Compositional invariance (correlation=1)			Equal mean assessment			Equal variance assessment			Full measurement invariance established		
		C= 1	5% quantile	Partial measurement invariance established	Differences	Confidence interval		Equal	Differences	Confidence interval			
						2.5%	97.5%			2.5%	97.5%		
EI	Yes	1.000	1.000	Yes	-.272	-.174	.169	No	.0045	-.141	.166	Yes	No
EA	Yes	1.000	1.000	Yes	-.293	-.158	.153	No	.027	-.175	.180	Yes	No
SN	Yes	.998	.990	Yes	-.160	-.158	.157	No	.235	-.247	.249	Yes	No
ESE	Yes	.999	.999	Yes	-.504	-.151	.163	No	.208	-.212	.207	Yes	No

Source: Authors' own work.

Table VI shows the results of the structural model and hypotheses' analyses (5,000 bootstrap resamples and 5,000 permutations. As shown in Table VI, among those hypothesized relations between TPB components confirmed for both groups (H1, H3, H4 and H5, as it will be explained later), for none of them taking an entrepreneurship course makes the relation significantly stronger. In other words, the MGA shows no statistically significant differences in the results depending on the student group (no course vs. course). Hence, no hypothesis can a priori be considered as fully accepted.

Table VI. Hypotheses testing.

Hypothesis	Relation	Path coefficients			p-value difference	
		No entrepreneurship course	Entrepreneurship course	Path coefficient difference	Henseler's MGA (one-tailed)	Permutation test (two-tailed)
H1	EA → EI	.693***	.768***	-.106	.065	.065
H2	SN → EI	.073***	-.037	.142	.010***	.01***
H3	ESE → EI	.166***	.135***	.036	.571	.589
H4	SN → EA	.326***	.355***	-.059	.471	.479
H5	SN → ESE	.259***	.224***	.020	.821	.824
H6	EFC → EA	.104	.289***	-.161	.299	.301
H7	EFC → SN	.121	.302***	-.217	.210	.213
H8	EFC → ESE	-.013	.037	-.035	.833	.829
H9	EFC → EI	.042	.161**	-.108	.257	.258

***p<0.01; **p<0.05; *p<0.1

Source: Authors' own work.

Getting into the details of the first three hypotheses that have EI as the dependent variable, our findings show a positive and significant influence of EA on EI in both groups (H1; No entrepreneurship education $\beta = .693$, $p < 0.01$; Entrepreneurship education $\beta = .768$, $p < 0.01$), thus partially confirming H1 (as said above, only partially as the effect is not stronger in the course group, as happens with all relevant subsequent hypotheses). On the contrary, and surprisingly, positive and significant effect between SN and EI appeared only for those students without entrepreneurial education (H2; No entrepreneurship education $\beta = .073$, $p < 0.01$; Entrepreneurship education $\beta = -0.037$, $p > 0.1$), something that can be regarded as a weak partial acceptance of H2. In turn, the relation between ESE and EI was positive and

significant in both student groups (H3; No entrepreneurship education $\beta=0.166$ $p<0.001$; Entrepreneurship education $\beta=0.135$ $p<0.01$), partially supporting H3.

When we tested the effect of SN on EA and ESE, we found a positive and significant relation with EA regardless of entrepreneurship education (H4; No entrepreneurship education $\beta=0.326$ $p<0.01$; Entrepreneurship education $\beta=0.357$ $p<0.01$), which partially supports H4. We also found a positive and significant relation between SN and ESE in both groups (H5; No entrepreneurship education $\beta=0.259$ $p<0.01$; Entrepreneurship education $\beta=0.224$ $p<0.01$), partially supporting H5.

Finally, the findings showed that EFC had a positive and significant relation with EA, SN and EI for the students with entrepreneurship education (H6; $\beta=0.104$ $p<0.01$, $\beta=0.121$ $p<0.01$ and H9; $\beta=0.042$ $p<0.01$), which partially supported H6, H7 and H9. The relation between EFC and ESE was not significant in either of the groups, so H8 is rejected.

5. Discussion and Conclusion

Entrepreneurship education has garnered increased attention from scholars, but its impact on entrepreneurial intention warrants further investigation. Drawing from TPB and SCT, we examined how, in a relatively entrepreneurship-unfriendly environment, entrepreneurial attitude, subjective norms, entrepreneurial self-efficacy, and an entrepreneurial family context, influence entrepreneurial intention, and whether entrepreneurship education makes a difference in such an influence.

We have addressed a relevant research gap on the role of entrepreneurship education on entrepreneurial intention, extending prior research. We have identified our specific research gap as the underexplored influence that the interplay between family role models and higher education entrepreneurship courses exerts on entrepreneurial intention, in a context of TPB dynamics, with a focus on entrepreneurship-unfriendly environments.

Entrepreneurship education was expected to increase entrepreneurship awareness and to pursue an entrepreneurial career (Gabrielsson *et al.*, 2020; Lima *et al.*, 2015; Mohamad *et al.*, 2015; Nájera-Sánchez *et al.*, 2023). To explore this, two distinct groups were compared: one of students who attended a course on entrepreneurship education, and another group of students who did not attend such a course.

In our analysis, we observed that both entrepreneurial attitude and self-efficacy significantly and positively influence entrepreneurial intentions, as anticipated, across both student groups. Specifically, the impact of entrepreneurial attitude on entrepreneurial intentions is greater among students who have taken a course. However, the influence of entrepreneurial self-efficacy on entrepreneurial intentions is slightly less pronounced.

The positive and significant relationship between entrepreneurial family context and entrepreneurial intention was only evident among the group that had taken an entrepreneurship course. This unexpected finding could be explained by the notion that having parents who are entrepreneurs might make the lessons from an entrepreneurship course seem less relevant, as students' entrepreneurial behaviour may have already been influenced within their family environment. Future research exploring the content and methods employed in entrepreneurship training (Gabrielsson *et al.*, 2020; Hägg and Gabrielsson, 2020; Martínez-Gregorio *et al.*, 2021) could provide insights into the extent to which entrepreneurship courses do or do not affect students' entrepreneurial intention, especially considering their family background in entrepreneurship.

Overall, our results regarding the impact of entrepreneurial attitude and entrepreneurial self-efficacy on entrepreneurial intention are generally consistent with prior outcomes (e.g., Amofah and Saladrighes, 2022; Karimi *et al.*, 2016; Laguía González *et al.*, 2019; Moriano *et al.*, 2011). Subjective norms, however, have been found to relate to entrepreneurial intention only for those students who did not take the entrepreneurship

course. This means that the entrepreneurship course cancelled any potential influence from the students' closest social environment (i.e., subjective norms) on their willingness to become entrepreneurs. May we note that, although prior research has reported subjective norms as the TPB component holding the weakest relation with entrepreneurial intention (e.g., Karimi *et al.*, 2016; Laguía González *et al.*, 2019), our results imply that entrepreneurship education is counterproductive in such a link. Further research is necessary to explore explanations for this outcome.

Regarding the relations between subjective norms and entrepreneurial attitude and entrepreneurial self-efficacy, we found them, as predicted, positive and significant for both student groups. This aligns with previous research (e.g., Amofah and Saladríguez, 2022; Fayolle *et al.*, 2014, García-Rodríguez *et al.*, 2017).

Concerning the relationships between, on the one hand, an entrepreneurial family context and, on the other, entrepreneurial attitude, social norms, and entrepreneurial self-efficacy, we found the first two relationships to be positive and significant only for the group of students who took an entrepreneurship course. This may be because the entrepreneurship course design was probably in line with the entrepreneurial values transmitted from their parents, so the course helped students catalyze such values, towards further improving their perception on entrepreneurship (entrepreneurial attitude) and internalizing other entrepreneurship-friendly values and behaviours from their social environment (social norms). As for the connection between an entrepreneurial family context and entrepreneurial self-efficacy, it was not significant for any of the groups. This means that, no matter whether an entrepreneurship course is taken or not, entrepreneurial self-confidence is not affected at all by parents' being entrepreneurs – in contrast with the social environment, which does exert an influence. Further research can delve into why this unexpected result occurred.

Last, but not least, we must acknowledge the widespread irrelevance of entrepreneurship education in our model, as the confirmed hypothesized connections remained significant in both student groups. This suggests that the positive effects of entrepreneurial attitude, entrepreneurial self-efficacy, and social norms on entrepreneurial intention were not influenced by entrepreneurship education, which may be due to course design, warranting further research into course content and methods. Limited effects of entrepreneurship education on similar factors have been also found (e.g., Schwartz *et al.*, 2018), emphasizing the need for deeper investigation.

All in all, with this study, we make a valuable contribution, in the sense that, focusing on a relatively entrepreneurship-unfriendly context, we offer an original multigroup analysis to explore the role of entrepreneurship education in TPB dynamics, with the addition of an entrepreneurial family context as the primary independent variable – a modelling approach that, to the best of our knowledge, has not been attempted before. A specific novel contribution of this study is the finding that an entrepreneurial family context influences entrepreneurial attitude, social norms, and entrepreneurial intention, only if students take an entrepreneurship course, leading to the conclusion that entrepreneurship education is – in the context of our study – a relevant catalyzer for making entrepreneurial parents become an effective trigger for entrepreneurship. Otherwise, entrepreneurship education was, unexpectedly, and contrary to relevant prior research, deemed irrelevant or counter-productive for some aspects of entrepreneurial dynamics.

5.1. Practical implications and limitations

Recognizing the limited impact of entrepreneurship education in unfriendly environments, we identify some practical implications. Firstly, we suggest that academic leaders focus on enhancing the structure of entrepreneurship courses to boost students' entrepreneurial intentions. This recommendation stems from the findings of this study, indicating that

educators and curriculum developers in those environments ought to assess and refine the content and teaching methods of existing entrepreneurship courses, emphasizing active learning, practical-operational aspects, and entrepreneurial competencies in entrepreneurship teaching.

Secondly, the impact of family environments on students' entrepreneurial intentions, especially among those who have participated in an entrepreneurship course, underscores the need for academic authorities to implement tailored initiatives. These should accommodate the diverse starting points of students, potentially including varied course content, methodological strategies, specialized mentoring programmes, and networking opportunities.

Thirdly, considering subjective norms' role in shaping students' attitudes and self-efficacy, local and regional policymakers are advised to formulate public policies to alter societal perceptions regarding entrepreneurship. Such measures could involve the introduction of legislation to improve conditions for entrepreneurs, launching campaigns and recognition programmes to foster positive views towards entrepreneurship, educational interventions at the primary and secondary levels, and supporting communities and networks dedicated to entrepreneurial endeavours.

Fourthly, with this study, we provide evidence from prior research showing that implementing appropriate role models in entrepreneurship programmes can help foster entrepreneurial intentions. This knowledge is particularly relevant for policymakers and educators promoting entrepreneurial education programmes, as it provides ideas about how to structure these programmes and include entrepreneurial role models effectively. In particular, policymakers and educators should consider aspects such as prior experience or individual contexts while structuring and implementing entrepreneurship programmes and initiatives.

This study also has various limitations. Firstly, our analysis is based on students from a single Spanish university, which might introduce bias. We encourage further enquiry to

explore if these relations hold in more diverse settings, with a focus on other relatively entrepreneurship-unfriendly environments, and encompassing other geographies and social, cultural and economic contexts. It would be also interesting to explore possible result differences in engineering vs. non-engineering student samples. Secondly, most of the entrepreneurship education provided by the sample university is optional, implying a predisposition towards entrepreneurship, and helping explain why the course had limited influence on their entrepreneurial intention and attitude. Consequently, we suggest further longitudinal research to avoid this bias. Thirdly, the study's smaller sample size of entrepreneurship course participants, compared to non-participants, introduces methodological challenges that might affect the outcomes, such as potentially underestimating the influence of entrepreneurship education, and questioning the broader applicability of the results. Nonetheless, the robustness of this study is reinforced by several key aspects, such as using the GUESSS questionnaire, applying the TPB, or employing appropriate statistical analyses. Finally, most entrepreneurship education literature focuses on the effect of attending an entrepreneurial course, but does not study differences in programme characteristics. We suggest further research to explore how various entrepreneurship course approaches (Gabrielsson *et al.*, 2020; Hägg and Gabrielsson, 2020; Martínez-Gregorio *et al.*, 2021) affect the dynamics and relationships with and among family background, attitudes, norms, self-efficacy, and entrepreneurial intention.

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APPENDIX. Measurement model.

Factor	Item	Description
Dependent variable:		
EI	EI1	I am ready to do anything to be an entrepreneur.
	EI2	My professional goal is to become an entrepreneur.
	EI3	I will make every effort to start and run my own business.
	EI4	I am determined to create a business in the future.
	EI5	I have very seriously thought about starting a business.
	EI6	I have the strong intention to start a business someday.
Independent and mediating variables		
EA	EA1	Being an entrepreneur implies more advantages than disadvantages to me.
	EA2	A career as an entrepreneur is attractive for me.
	EA3	If I had the opportunity and resources, I would become an entrepreneur.
	EA4	Being an entrepreneur would entail great satisfactions for me.
	EA5	Among various options, I would rather become an entrepreneur.
SN	SN1	If you would pursue a career as an entrepreneur, how would people in your environment react - your close family.
	SN2	If you would pursue a career as an entrepreneur, how would people in your environment react - your friends.
	SN3	If you would pursue a career as an entrepreneur, how would people in your environment react - your fellow students.
ESE	ESE1	Identifying new business opportunities.
	ESE2	Creating new products and services.
	ESE3	Managing innovation in a business.
	ESE4	Being a leader and communicator.
	ESE5	Building up a professional network.
	ESE6	Commercialising a new idea or development.
	ESE7	Successfully managing a business.
EFC	EFC	Parents are self-employed.

EI, EA SN and ESE are measured through 7-point Likert scale (1=strongly disagree, 7=strongly agree).

EFC is measured through four alternative answers (No; Yes, father; Yes, mother; Yes, both)