

## UNPACKING ENTREPRENEURIAL EDUCATION: LEARNING ACTIVITIES, STUDENTS' GENDER, AND ATTITUDE TOWARD ENTREPRENEURSHIP

LAURA PADILLA-ANGULO  
Universidad Loyola Andalucía

ANTONIA M. GARCÍA-CABRERA  
Universidad de Las Palmas de Gran Canaria

ANA M. LUCIA-CASADEMUNT  
Universidad de Málaga

To promote entrepreneurship among students, academic institutions should focus on developing a positive entrepreneurial personal attitude (EPA), since it is a strong antecedent of entrepreneurial intentions, which in turn predict actual entrepreneurship. Previous research has found that EPA is lower for women than for men, which is related to the acknowledged gap between women and men in entrepreneurial activity. The present work builds on the elaboration likelihood model (ELM) to examine how nine different entrepreneurship-focused academic activities in school impact on students' EPA, paying special attention to gender differences. We use a sample of 918 students from a French business school to analyze gender differences in the mechanisms based on ELM central and peripheral routes to promote EPA through academic activities. *Post hoc* tests are also performed to explore differences by gender at various academic levels. The results have important implications for academic institutions wishing to promote entrepreneurship, since we unpack entrepreneurial education into individual academic activities. In particular, results suggest that students' gender and academic level should be considered when designing activities to promote entrepreneurship.

Entrepreneurship is central to economic development and the generation of employment (OECD, 2019), so the need to stimulate entrepreneurial attitudes has been widely recognized. In this respect, women are a target of special interest, given the acknowledged gender gap in entrepreneurship

(Greene, 2005; OECD, 2019; Storey & Greene, 2010). In effect, many regions encourage the promotion of entrepreneurship among women, with initiatives such as the Entrepreneurship 2020 Action Plan in the European Union (EU) (EC, 2013), in line with the EU's current priority of "making Europe more entrepreneur-friendly" (Eurofound, 2015: 1).

Indeed, self-employment statistics suggest that women are not pursuing entrepreneurship as a path to employment: although over the past decade the number of self-employed women increased by 4.3% and the number of self-employed men declined by 4.9% (OECD, 2019), there is still a gender gap in entrepreneurship. Moreover, despite the positive trend, while in 2018 a total of 9.6% of working women and 16.9% of working men were self-employed (OECD, 2019) in the EU, in 2019 this gender gap increased (10.03% of working women vs. 17.69% of working men) (Eurostat, 2020).

In light of this persistent gender gap, entrepreneurship education (EE) could play a vital role in the promotion of female entrepreneurship (Kickul, Wilson,

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Marlino, & Barbosa, 2008; Wilson et al., 2007). To be effective, the beliefs of women about entrepreneurship acquired from childhood through socialization, learning experience, and the educational system (Strobl et al., 2012) should be considered (Bird & Brush, 2002; Byrne & Fayolle, 2010; Liñán, Rodríguez-Cohard, & Rueda-Cantuche, 2011; Santos, Roomi, & Liñán, 2016). Entrepreneurship is still a stereotypically masculine career path (Ahl, 2006; Lewis, 2006; Shinnar, Hsu, & Powell, 2014; Verheul, Uhlaner, & Thurik, 2005), and gender stereotypes adversely affect female entrepreneurship (Gupta, Turban, & Bhawe, 2008; Marlow & Patton, 2005). Even with the same education and backgrounds, females often feel less confident and equipped for entrepreneurship compared to males (Petridou, Sarri, & Kyrgidou, 2009), one possible explanation being that *perceived* levels of competencies and qualifications are more important than *actual* levels (Bandura 2001; Wilson et al., 2007), particularly when gender stereotypes influence such self-perceptions (Petridou et al., 2009). This could make entrepreneurship less attractive for females, resulting in their entrepreneurial personal attitude (EPA) being lower.

Actions to strengthen women's EPA are expected to influence their entrepreneurial intention (EI), which in turn will eventually increase the number of female start-ups (Santos et al., 2016) since EI is the single best predictor of actual entrepreneurship (Bird, 1988). Accordingly, in EE it is important to have a better understanding of *how* and *why* some academic activities may strengthen students' attitudes toward entrepreneurship and whether the effect of these activities differs between women and men. To this end, a highly appropriate theoretical framework for studying changes in individuals' attitudes is the elaboration likelihood model (ELM) (Petty & Cacioppo, 1986), which posits that such changes depend on arguments received through persuasive communication that will be elaborated upon ("i.e., thought about" [Jones, Sinclair, Rhodes, & Courneyea, 2004: 506]). Based on the ELM, academic activities represent ways to change students' EPA through persuasive communication. However, as far as we know, the ELM has not been used to study the impact of EE on students' attitudes.

Previous literature on EE has studied inspirational triggers as events or inputs from academic activities that can "change students' hearts and minds" in regard to becoming entrepreneurs (Souitaris, Zerbinati, & Al-Laham, 2007: 567). Although Souitaris et al. (2007) did not find a positive association between a set of jointly considered inspirational triggers—the

views of a professor, of an external speaker, of a visiting entrepreneur, of classmate(s), the preparation for a business plan competition (BPC), and the views of judges of that competition (Souitaris et al., 2007: 578)—and students' EI, these authors did not consider students' gender or academic level, even though gender is highly relevant to understanding individuals' attitudes toward entrepreneurship (Joshi, Neely, Emrich, Griffiths, & George, 2015; Kickul et al., 2008; Rocha & Praag, 2020; Santos et al., 2016).

To better understand EE, it is important to address issues such as "when" and "for whom" (Frazier et al., 2004: 116) participation in different academic activities strengthens students' EPA. Accordingly, this study builds on the ELM and uses a sample of 918 students from a French business school to examine gender (referring to biological sex) differences in the impact of diverse academic activities on students' EPA. Moreover, we explore differences in this impact depending on academic year.

This study contributes to the EE literature by responding to the recommendations of previous research to consider potential moderators (including gender and academic level) when studying the outcomes of EE (Martin, McNally, & Kay, 2013). We also contribute to the EE literature by answering the call of previous research to better explain *how* EE achieves its aims—that is, to *unpack* the "package" of EE. We show how the *individual components* of an EE program (rather than EE as a monolithic unit) impact students, which has been neglected by previous literature (Bergmann, Hundt, & Sternberg, 2016; Fayolle & Gailly, 2008; Liñán, Urbano, & Guerrero, 2011; Martin et al., 2013; Wilson et al., 2007). In addition, our study contributes to the processual aspects of management learning and education (Petriglieri & Petriglieri, 2010), as well as the "production and dissemination of managerial knowledge" (Petriglieri & Petriglieri, 2010: 45). This literature has conceptualized business schools as identity workspaces providing a holding environment (Petriglieri & Petriglieri, 2010; Winnicott, 1975) for identity work—in our case, being an entrepreneur. Our analysis helps identify the academic activities that enable business schools to function as identity workspaces and facilitate identity work, and the students' characteristics that contribute to the use of the business school as an identity workspace.

The structure of the paper is as follows: first, we present the theoretical framework and develop hypotheses; we then explain the data collection procedure and present participants, variables, and data analysis. Next, we present results for the regressions

to test hypotheses and also for the mean-difference tests by educational level, and discuss results providing practical implications, limitations, and insights for future research.

## THEORETICAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

### Entrepreneurial Personal Attitude

EPA, a term derived from the theory of planned behavior (TPB) (Ajzen, 1991, 2001), refers to the desirability of becoming an entrepreneur (Ajzen, 2001) and is a strong and consistent predictor of EI (Kautonen, van Gelderen, & Fink, 2015; Liñán, Moriano, & Jaén, 2016; Rauch & Hulsink, 2015). EPA is the joint assessment of salient beliefs about the expected consequences of becoming an entrepreneur and the desirability of these consequences (Ajzen, 2001). A salient belief for entrepreneurship could be, for instance, that it provides independence. If the individual considers independence as a desirable outcome the EPA will be higher, and vice versa.

While the entrepreneurship literature has extensively used the TPB to predict entrepreneurial activities, this article attempts to predict attitudes. An appropriate theory to explain attitudes is the ELM (Petty & Cacioppo, 1986), a dual-process theory focusing on the influence of external variables in changing attitudes through persuasion. The basic principle of the ELM is that changes in individuals' attitudes depend on "the likelihood that an issue or argument will be elaborated upon" (Jones, Sinclair, Rhodes, & Courneya, 2004: 506). The ELM identifies two routes that differ in the mental effort a person applies to thinking about a message: the central route and the peripheral route. The central route involves scrutiny and thoughtful consideration of arguments, a high level of message elaboration and durable attitude change, which is highly predictive of behavior. The peripheral route involves association with positive or negative cues in the stimulus, such as the credibility of the sources of the message or making a simpler inference, and changes in attitudes are likely to be less enduring. According to Morris, Woo, and Singh (2005), within both the central and the peripheral route to persuasion, a change in attitude is due to affective and cognitive drives, since the individual processes messages based on both affective and cognitive cues.

The ELM is relevant in this research because one of the objectives of EE is precisely to change attitudes toward entrepreneurship in a durable way (Nabi, Walmsley, Liñán, Akhtar, & Walmsley, 2017).

According to the ELM, this would involve a central-route change in attitude (Petty & Cacioppo, 1986).

### ELM and Gender Differences in the Impact of Academic Activities on EPA

Previous research has found that women have lower EPA compared to men (Kickul et al., 2008; Santos et al., 2016), implying that women are less likely to become entrepreneurs (Bird, 1988; Santos et al., 2016). As mentioned above, the ELM states that individuals' attitudes can change because of the effect of external variables through persuasion (Petty & Cacioppo, 1986). According to this, EE—specifically, academic activities at school—is an external variable that is able to affect individuals' EPA (Souitaris et al., 2007), and it is conceivable that students will pay different levels of attention to such activities and will catch the messages and cues offered by these activities to different degrees (Souitaris et al., 2007). Thus, we expect that academic activities will have different effects on each student's EPA, and that gender will condition this effect (Martin et al., 2013). Along this line, previous research has found differences in the way women and men develop attitudes (e.g., Venkatesh & Morris, 2000).

We focus on nine academic activities to study gender differences in the effect of EE on students' EPA. According to Souitaris et al. (2007), academic activities provide students with—besides knowledge and resources to evaluate and develop business ideas—inspiration linked to a trigger and a target (Souitaris et al., 2007). The entrepreneurial inspiration derived from education programs is "a change of hearts (emotion) and minds (motivation) evoked by events or inputs from the programmes and directed towards considering becoming an entrepreneur" (Souitaris et al., 2007: 573). From this perspective, inspirational triggers are the events or inputs from academic activities that can change students' EPA (Souitaris et al., 2007). Souitaris et al.'s (2007) work is consistent with ELM premises, since the ELM helps us understand how people can be persuaded by communication (Petty & Cacioppo, 1986). Based on the ELM, we classify inspirational triggers as derived from two types of academic activities.

First, considering the peripheral route to persuasion, activities with influential people that allow students to access these people's entrepreneurial experience (e.g., views and testimonials from external speakers, visiting entrepreneurs, etc.). Activities with influential people are of relevance because they have credibility and trustworthiness in students'

eyes, which is crucial in the persuasion process (Jones et al., 2004). Students can listen to and observe them and think about the consequences of their own behavior (Bandura, 2001), making entrepreneurship a desirable behavior (Bergmann et al., 2016) and strengthening EPA. These influential people are respected others who can act as symbolic role models that help develop students' entrepreneurial identity (Byrne, Fattoum, & Diaz Garcia, 2019; Radu & Loué, 2008). Previous research has highlighted the importance of "credible and attractive role models in order to encourage people [...] to engage with entrepreneurship" (Byrne et al., 2019: 4).

Second, based on the central route, we consider academic activities that allow students to personally experience entrepreneurial projects (e.g., participation in a BPC). Based on Petty and Cacioppo (1986), through students' own contact with a reality, it is easier to evaluate the merits of such a reality and change attitudes about it (Table A1 in Appendix A offers an overview of each educational activity analyzed).

**Gender differences in the impact on EPA of inspirational triggers aligned with the ELM peripheral route: The views of influential people.** Mostly following Souitaris et al. (2007), we consider influential people as professors, external speakers, visiting entrepreneurs, and judges of business competitions. The professor is a leader within the student group and may influence students' outcomes (Koh, Steers, & Terborg, 1995). For example, through communicating the desirability of entrepreneurial activity, professors can deliver messages such as how an entrepreneurial activity can improve the environment and give other social benefits, provoking changes in students' evaluation about how positive entrepreneurship can be. In addition, professors can convey their enthusiasm for entrepreneurship (Souitaris et al., 2007), and generate "emotional contagion" (Cherulnik, Donley, Wiewel, & Miller, 2001) and a more positive student evaluation of entrepreneurship.

Furthermore, students' exposure to views and testimonials of other influential people—such as external speakers, visiting entrepreneurs, and judges of business competitions—that show positive outcomes of entrepreneurial activity can change their "hearts and minds." According to the ELM, changes in students' attitudes may happen because such guests are competent and reliable sources of information. Furthermore, like Souitaris et al. (2007), we also study classmates since they can act as students'

"reference people." According to Bergmann et al. (2016), the effect of academic activities at schools may go beyond their impact on the students attending them and also reach their classmates, because: (a) high numbers of students participating in entrepreneurial academic activities convey the message that the school encourages entrepreneurship and that becoming entrepreneurial is a desired behavior; (b) if comparable peers engage in entrepreneurial academic activities and increase their favorability toward entrepreneurship, students might also consider this option for themselves.

Finally, we also analyze another group of influential people not included in Souitaris et al.'s (2007): would-be entrepreneurs, or recent or young entrepreneurs. We propose that meeting them can be inspirational, with the added benefit that these entrepreneurs are likely to be of a similar age to the students themselves and will therefore likely be more relatable. They are probably better able than other reference people to transmit their enthusiasm to students and allow them to recognize and imagine themselves as potential entrepreneurs. All these individuals (except, in principle, classmates) have entrepreneurial expertise or experience and, according to the ELM model, serve as peripheral cues and influence EPA. According to the ELM, greater levels of trustworthiness in the source of messages tend to be associated with greater ability to influence individuals' attitudes, and persuasive messages from sources of different degrees of credibility may generate changes in attitudes. Thus, we posit:

*Hypothesis 1. Inspirational triggers derived from participation in academic activities with influential people, aligning with ELM peripheral routes—that is, (a) professors, (b) external speakers, (c) visiting entrepreneurs, (d) judges of competitions, (e) classmates, and (f) would-be entrepreneurs or recent or young entrepreneurs—will have a positive influence on EPA.*

Yet, previous research has suggested that women and men differ in the extent to which they can be influenced by others (Venkatesh & Morris, 2000). For example, women are socialized to be more people-oriented, and men to be more independent (Carrier, 2009; Zelezny, Chua, & Aldrich, 2000); along these lines, previous research has suggested that women rate the opinions of others' when determining their attitudes to a given behavior more highly than do men (Venkatesh & Morris, 2000). According to the ELM, this gender difference in influenceability is more likely to arise in contexts where people have low ability or motivation to

evaluate the messages received, so that they use their learned gender roles as simple rules to accept persuasion (Petty & Cacioppo, 1986). In the case of women's EE, the context can be affected by the fact that women tend to have low self-confidence about entrepreneurship (perception of lack of abilities) and disregard such male-oriented careers (lack of motivation).

Previous studies (e.g., Dabic, Daim, Bayraktaroglu, Novak, & Basic, 2012; Klyver & Grant, 2010; Petridou et al., 2009; Tynan et al., 2009) have found that female students tend to feel less self-confident about entrepreneurship than do men, and have a greater need for entrepreneurial networking, mentoring, and tutoring structures (Dabic et al., 2012). Even with the same weaknesses in entrepreneurial knowledge, women have been found to be more likely to recognize those weaknesses and position themselves as being more in need of training (BarNir, Watson, & Hutchins, 2011; Jones & Tullous, 2002; Kourilsky & Walstad, 1998). This might be because entrepreneurship is still believed to be male-gendered (Ahl, 2006; Hamilton, 2013; Verheul et al., 2005).

In addition, because of the dominant discourse perpetuated in the media describing entrepreneurship with masculine connotations (Hamilton, 2013), women tend to disregard entrepreneurship as a professional career. Previous research has suggested that career choices are affected by gender stereotypes, and that women are particularly exposed to the negative effects of perceptions of career barriers, so that "females often hold more negative attitudes toward male-oriented professions" (BarNir et al., 2011: 274). As has been argued, this could be elucidated by "sociological explanations of the effects of sex-role socialisation" (BarNir et al., 2011: 274), and with feminist theories (e.g., Fischer, Reuber, & Dyke, 1993; Hurley, 1999). Those theories argue that "the social context associated with gender-based socialisation creates a variety of norms and expectations that reinforce gender-based stereotypes" (BarNir et al., 2011: 274). Relatedly, previous research has found that cultural norms reinforce entrepreneurial perceived behavioral control in men more than in women (BarNir et al., 2011; Birley, 1989; Scherer et al., 1990). Accordingly, it is argued that men are likely to be less influenced by role models (i.e., specific entrepreneurial triggers) because they tend toward male-typical careers anyway, while women have less of a tendency toward male-typical careers in the absence of these specific entrepreneurial triggers (BarNir et al., 2011).

Based on the above, we expect that women's EPA will be more influenced by the views and testimonials

of influential people (symbolic role models) compared to men's EPA—that is, we expect that women will be particularly susceptible to the opinions of influential people. The status and the experience of these entrepreneurship specialists legitimizes their views and increases the likelihood that women will take full account of them. These views and testimonials from influential people are expected to highlight the positive aspects associated with entrepreneurial activity, and hence enhance EPA. Accordingly, we hypothesize:

*Hypothesis 2. Inspirational triggers derived from participation in academic activities with influential people, aligning with ELM peripheral routes, will have a stronger positive influence on female students' than on male students' EPA.*

**Gender differences in the impact on EPA of inspirational triggers aligned with the ELM central route: Entrepreneurial experiential learning activities.** Bem's (1981: 5) psychological theory of self-perception argues that individuals infer their own attitudes partially "from observations of their own overt behaviour or circumstances in which this behaviour occurs." Based on the ELM approach, Petty and Cacioppo (1986) also suggested that personal experience of a reality facilitates individuals' evaluations of the merits of such a reality and the resulting change in related attitudes, and that new or strengthened attitudes based on direct experience are better predictors of behavior than are new or strengthened attitudes based on indirect experiences.

During entrepreneurial activities at school, entrepreneurial behavior occurs through using managerial competencies and skills. We consider BPCs, participation in students' associations, and interdisciplinary group projects. Previous literature has found a positive impact of involvement in students' associations on EI (Padilla-Angulo, 2019) and learning, since associations simulate aspects of entrepreneurial learning such as social learning and "learning by doing" (Pittaway, Gazzard, Shore, & Williamson, 2015; Pittaway, Rodriguez-Falcon, Aiyegebayo, & King, 2010). When students create associations at school and design and develop collective activities to reach a goal, they are behaving as entrepreneurs. Besides, associations, just like BPCs, are a form of experiential learning that require continuous changes to earlier elements as they progress, led by reflective practices (Pittaway & Cope, 2007), and can be conceived of as (relatively) long-lasting sentient communities "that demand and receive loyalty from their members" (Miller & Rice, 1967: xiii). These may

help student members experience belonging to the community of “entrepreneurs” and project themselves as actual entrepreneurs, facilitating identity work—that is, “the activities that individuals undertake to create, maintain, and display personal and social identities that sustain a coherent and desirable self-concept” (Petriglieri & Petriglieri, 2010: 45).

As Petriglieri and Petriglieri (2010: 48) put it (albeit referring to medical students), “this fantasised belonging reassures such students that they have a future identity and motivates them to work toward achieving it.” Furthermore, students with diverse academic profiles are mixed on some courses and activities to jointly develop interdisciplinary projects within the school. Group diversity fosters creativity and innovation, and entrepreneurship involves both elements (Alves et al., 2007; King & Anderson, 1990; Payne, 1990; Thornburg, 1991). Accordingly, previous literature has found that interdisciplinary diversity at business schools is also essential for students’ EI (Padilla-Angulo, Díaz-Pichardo, Sánchez-Medina, & Ramboarison-Lalao, 2019).

In addition, activities targeted at changing attitudes sometimes offer incentives (rewards), along with persuasive communication messages, to stimulate involvement (Brown et al., 2010). For example, winning a BPC might be associated with an economic prize, and participation in academic associations or interdisciplinary group projects with obtaining academic credits. In these cases, incentives can urge students to commit more heavily to these experiential entrepreneurial activities and make significant mental efforts with respect to the messages involved to complete them successfully and obtain the prize.

Accordingly, because “attitude formation based on direct experience may typically require more effortful elaboration of the merits of the object” (Petty & Cacioppo, 1986: 179), the above experiential learning entrepreneurial activities can be considered central routes of persuasion influencing EPA. Accordingly, we posit:

*Hypothesis 3. Inspirational triggers derived from participation in academic activities that allow students to personally experience entrepreneurial projects, aligning with ELM central routes of persuasion—that is, (a) BPCs, (b) student associations, and (c) interdisciplinary projects—will have a positive influence on EPA.*

However, entrepreneurship is believed to be predominantly masculine, despite recent changes regarding the role of female stereotypes (Shinnar et al., 2014; Verheul et al., 2005). This male view is

likely to negatively affect the entrepreneurial self-image of women (Verheul et al., 2005), who tend to undervalue their entrepreneurial skills and performance (Verheul et al., 2005; Wilson et al., 2007) more often than men do, such that their attitude toward entrepreneurship suffers. Therefore, it is expected that this undervaluation will negatively affect women’s attraction to entrepreneurship and provoke a lesser effect of personal entrepreneurial experience on EPA. In this respect, attitude might mediate knowledge acquisition and behavioral change (Petty, Priester, & Wegener, 1994). As already argued, evaluating the merits of a reality becomes easier through personal contact with it (Petty & Cacioppo, 1986). However, this can be more difficult for women than for men because such realities challenge some of the beliefs about entrepreneurship that women have acquired from childhood through socialization, learning experience, and the educational system (Strobl, Kronenberg, & Peters, 2012). Indeed, according to the ELM, when a message contains information that is inconsistent with the individual’s previous opinion, the individual could generate counterarguments. Consequently, although the thoughtful elaboration of arguments in the central route sometimes occurs under objective reflections, other times the process “is more biased and may be guided mostly by the person’s initial attitude” (Petty & Cacioppo, 1986: 128). Hence, the central route could exacerbate gender differences in EPA.

Based on this, we hypothesize:

*Hypothesis 4. Inspirational triggers derived from participation in academic activities that allow students to personally experience entrepreneurial projects, aligning with the ELM central route of persuasion, will have a weaker positive influence on female students’ than on male students’ EPA.*

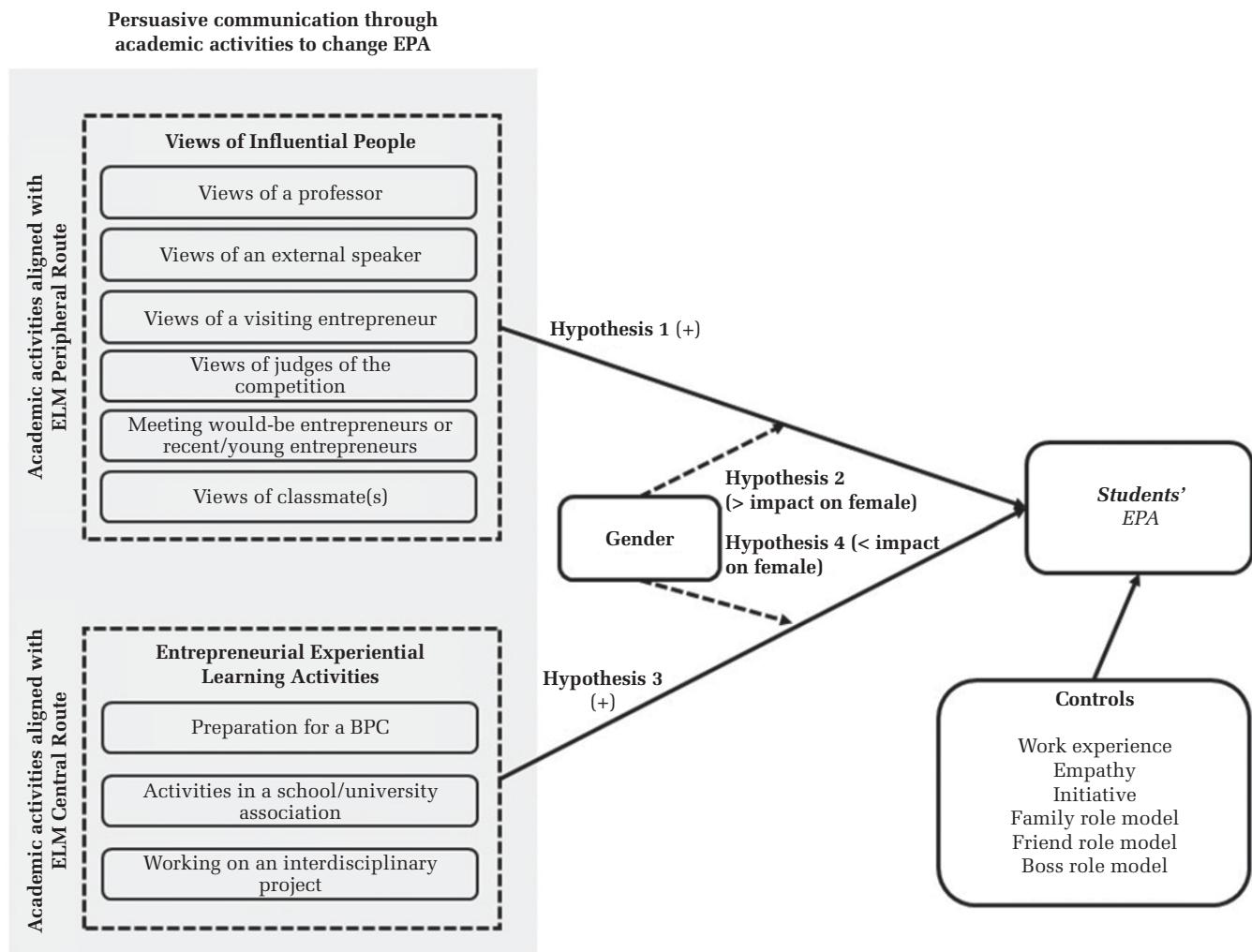
Figure 1 shows our conceptual model, which predicts that the views of influential people (peripheral route) and participation in experiential entrepreneurial academic activities (central route) will have a direct effect on students’ EPA. Gender moderates the effect of both types of inspirational trigger on EPA. The model also includes control variables (explained in the methodology section), directly affecting students’ EPA.

## METHODOLOGY

### Participants and Procedure

We conducted the study at a French business school (Ecole Supérieure de Commerce) with about

**FIGURE 1**  
**Conceptual Model**



1,700 students. The behavior of students in business schools is of inherent interest to us because one of the schools' primary objectives is to encourage entrepreneurship and innovation. The selected business school offers programs highly focused on entrepreneurship that students can take from the beginning of their journey at the school. The school has strong links with a local business incubator, with which it collaborates in activities to encourage entrepreneurship, such as a three-day seminar for entrepreneurs and a center for young entrepreneurs that supports students and recent graduates in their projects to start their own businesses.

In fact, in France, which has traditionally been considered not very entrepreneur-friendly due to cultural aspects such as uncertainty avoidance, low

acceptance of failure, and little social consideration for the entrepreneur in general (Béranger, Chabbal, & Dambrine, 1998; Carayannis, Evans, & Hanson, 2003), the government has been encouraging EE since the mid-to-late 1990s, following influential reports such as those by Béranger et al. (1998) and Fayolle (1999). These reports highlighted the need to offer teaching and training programs to promote entrepreneurship among students and to introduce BPCs as a pedagogical tool (for a complete overview, see Klapper, 2004). In line with this, in 2001 a professorial initiative supported by the French government (Klapper, 2004), called the Observatoire des Pratiques Pédagogiques en Entrepreneuriat (Observatory for Pedagogical Practices in Entrepreneurship), was created.

The Écoles Supérieures de Commerce are private French business schools at the university level that are generally created by local chambers of commerce and industry. All of them offer, among other programs, a generalist program in management called Program Grande École. To enroll in this program, students must attend post-high school preparatory courses, which are part of the French post-secondary education system and consist of two intensive years (extendable to three years). Admission to the preparatory courses is competitive and based on the students' high school grades. On these courses, undergraduate students study a variety of subjects, such as economics and mathematics (Klapper, 2004). These involve a heavy workload, with several weekly written and oral exams, in preparation for the highly competitive national entry exams for the Grandes Écoles (higher education establishments, including business schools, with significant autonomy and their own specific pedagogical curricula).

In addition, the selected French business school was suitable for our research since it organizes a wide variety of activities annually to promote entrepreneurship, including a BPC. The objective of a BPC is precisely to raise students' awareness of entrepreneurship and develop their entrepreneurial spirit by devising a viable entrepreneurial project and business plan over three months, and then defend it in front of a jury (see Table A1 in Appendix A for more details). Being evaluated by experienced executives who are willing to advise students generates a feeling of empowerment and a climate of recognition, resulting in a supportive learning environment. According to the BPC organizers, most students feel close to the everyday life of an entrepreneur in the course of the competition, discovering in the process the cycles of good and bad times. In general, students associate BPCs with a positive entrepreneurial experience.

Other academic activities organized by the school include inviting external speakers and entrepreneurs, meetings with would-be entrepreneurs and recent or young entrepreneurs, participation in students' associations, and projects with students from other programs, or engineers and professionals.

The work was developed during the academic course 2014–2015. The data were obtained through a survey, elaborated with the software Qualtrics and administered electronically at the end of the second semester, 2015. The questionnaires were anonymously answered. We selected this period to maximize the number of respondents: most of the students studying abroad that academic year, the

majority of which did so during the first semester, had returned to school at that time. The academic activities happened at different points in time during the students' academic journey through school. To maximize participation, with the approval of academic directors and over about two months, answering the questionnaire was made compulsory for students in order for them to be able to access their student account on the school's intranet. Students access their accounts to check their grades, lecture timetables, and other academic information, so using the intranet is unavoidable. When accessing their accounts, they were redirected to the link to the questionnaire. By applying this technique we avoided self-selection problems.

We obtained 918 responses. The respondents were 58.82% female and 41.18% male, ranging between 20 and 23 years on average. Table 1 provides summary statistics of the respondents' academic program and level for the full sample and by gender. Of respondents, 30.1% were first-year students, 26.9% second-year, 29.1% third-year, and 13.8% master's students or equivalent (e.g., fourth and fifth levels of some degrees). The respondents were students of the Grande École Program (a generalist program in management), which includes a bachelor's in international management; bachelor's in tourism, leisure, and travel management; bachelor's in graphic arts and design; and master's in tourism, leisure, and travel management. All students of different programs had a high course load on entrepreneurship and courses and projects in common, so that they would have been interacting with each other and also been exposed to entrepreneurship content during their time at the school.

The majority of activities analyzed—in particular, those in which students could learn the views of a professor, an external speaker, a visiting entrepreneur, classmate(s), would-be entrepreneurs, or recent or young entrepreneurs—were required for all students, since they took place during mandatory classes, lectures, or conferences and speeches throughout the academic year organized by the business school. Although all students were exposed to the same profiles of influential people, these were not necessarily the same across students since students were enrolled in various academic programs and at different levels.

BPCs were not a required activity for the full sample, and only students from the second year on could participate in this activity. The percentage of respondents having completed this activity the year of the survey is 19.17% (27.25% of sampled males, 103

**TABLE 1**  
**Participants' Academic Program and Level**

Level	Program	Full Sample n = 918 (%)	Female n = 540 (%)	Male n = 378 (%)	Full Sample by level (%)
1	Grande École	12.9	8.5	19.0	30.1
	International management	7.1	7.4	6.6	
	Tourism bachelor's	5.4	7.4	2.6	
	Design	4.7	6.1	2.6	
2	Grande École	13.7	8.5	21.2	26.9
	International management	4.6	6.1	2.4	
	Tourism bachelor's	3.8	5.6	1.3	
	Design	4.8	6.1	2.9	
3	Grande École	17.5	14.1	22.5	29.1
	International management	1.6	1.3	2.1	
	Tourism bachelor's	4.6	6.7	1.6	
	Design	5.4	5.0	6.1	
4	International management	5.2	4.8	5.8	13.8
	Design	0.2	0.2	0.3	
5	Design	2.1	2.8	1.1	
M1	Tourism master's	4.8	7.4	1.1	
M2	Tourism master's	1.5	2.0	0.8	
<b>TOTAL</b>		<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

individuals; 13.52% of sampled females, 73 individuals), whereas the percentage of respondents having completed the activity in prior years increases to 38.9% (51.05% of sampled males, 193 individuals; 30.56% of sampled females, 165 individuals). Teams were mostly mixed. The rest of the students (irrespective of their level) were involved in the vote on students' projects presented to the contest. In particular, the BPC teams were obligated to upload a two-minute presentation to the school's intranet and all students were able to vote for projects.

The school encourages students to join associations from the start of their time at the school, and associations are considered part of the pedagogical program since students obtain academic credits if they participate in associations.

As most academic activities analyzed were required for all students, selection effects based on previous EPA levels or gender are not expected. In this respect, rates of sampled males and sampled females coincided with percentages of sampled males and sampled females participating in required activities with influential people. Second, regarding the BPC, since this activity was required for 19.17% of sampled students (elective for the rest from the second level), and 19.73% of students participated voluntarily in this activity by submitting a business plan, selection effects are again unlikely. Finally, since students obtain academic credit from participating in associations, and these credits are required to complete their studies, it mitigates the potential self-

selection problem of entrepreneurially minded students, and so we expect similar proportions of male and female students in this activity, as in the whole sample.

### Measures

**Dependent variable.** To measure EPA, we used the same items as in the Entrepreneurial Intention Questionnaire (EIQ) Scale by Liñán, Urbano, and Guerrero (2011), namely: (a) A career as an entrepreneur is not very attractive to me (reversed); (b) If I had the opportunity and resources, I would love to start a business; (c) Among various options, I would rather be anything but an entrepreneur (reversed); (d) Being an entrepreneur would give me great satisfaction; and (e) Becoming an entrepreneur would bring me more advantages than disadvantages. The questionnaire was translated into French by native speakers. We analyzed the validity and reliability of the scales to ensure the appropriateness of the survey instrument in the French version in a pretest sample of 258 students. The instrument uses a 7-point Likert scale (from 1 = *strongly disagree* to 7 = *strongly agree*)—to measure the scale items. An exploratory factor analysis was performed (principal components estimation with varimax rotation). The results show that both the Kaiser–Meyer–Olkin (KMO) test and the Bartlett's test of sphericity ( $\chi^2$ ) offer satisfactory levels (KMO = 0.774;  $\chi^2 = 1396.1$ ;  $p < 0.01$ ). The variance explained rises to 64.542%.

**Explanatory variables.** We use the same definition of “programme-derived entrepreneurial inspiration” as Souitaris et al. (2007). The students were asked the following question: “Do you remember any particular event or input at the school/faculty that drastically changed your ‘heart and mind’ and encouraged you to consider becoming an entrepreneur?” (possible responses: yes, no). Although in general terms several-point scales offer more nuanced information, we considered that scores taken from a Likert-type scale would principally provide a directional component regarding information obtained (agreement vs. nonagreement) and, to a lesser degree, the intensity of the response (Matell & Jacoby, 1971). In addition, variations in intensity can be conditioned by bias in responses, regardless of the direction (Peabody, 1962). Since we consider that differences in the intensity component may increase due to memory bias related to different intervals between the time each academic activity was performed and the time the fieldwork was conducted (June 2015), we focused on the direction of students’ judgment about academic activities being, for them, inspirational triggers and omitted the degree or intensity. Authors such as Matell and Jacoby (1971) and Willits, Theodori, and Luloff (2016) have considered the use of a 2-point Likert-type rating format (or an alternative format), in which respondents indicate whether they have an opinion (yes or no), as a valid way of determining the directional component of their responses. Proceeding in that way, we could guarantee that we would obtain definite or unequivocal student responses about the academic activities that had changed their heart and mind regarding entrepreneurship.

Concerning the trigger list, we followed Souitaris et al. (2007) by including: *views of a professor*, *views of an external speaker*, *views of a visiting entrepreneur*, *views of classmates*, *preparation for a BPC*, and *views of judges of the competition*. Additionally, to take advantage of the richness of activities organized by the school, we included meeting would-be entrepreneurs and recent or young entrepreneurs, activities in a school or university association, and working on an interdisciplinary project. Students were able to tick more than one option from the list. As explained above, we classify inspirational triggers into two categories: (a) derived from participation in academic activities with influential people (i.e., views of a professor, an external speaker, a visiting entrepreneur, classmates, or judges of the competition; meeting would-be entrepreneurs), and (b) derived from participation in academic activities

that allow students to personally experience entrepreneurial projects (preparation for a BPC, participation in an association at the school, and working on an interdisciplinary project). We used dummy variables to measure each specific inspirational trigger, which was coded 1 if the student marked this activity, and 0 otherwise.

For simplicity reasons, and given that the questionnaire was quite lengthy, we did not ask students about elements that were likely to have had an impact on the influence of the different triggers for student attitudes; for example, who the guest lecturer was (age, gender, experience), how the influential people spoke about things, how the different exercises were set up, etc. Psychology models, including the ELM, state that these elements can affect, for example, the effort individuals make in processing persuasive communication. This refined analysis, although very interesting, is beyond the scope of this paper.

**Control variables.** Following the literature, we control for *work experience* (1 = yes, 0 = no) (e.g., Cooper, 1993; Liñán & Chen, 2009; Robinson, Stimpson, Huefner, & Hunt, 1991), since it is an important source of information that may be relevant in the decision to start a firm (Dahlqvist, Davidsson, & Wiklund, 2000; Liñán et al., 2016) and *role models* (1 = knows at least one entrepreneur, 0 = does not know any) (e.g., Boyd & Vozikis, 1994; Carsrud, 1992; Scherer, Brodzinski, & Wiebe, 1991) because they facilitate vicarious learning (Bosma, Hessels, Schutjens, Van Praag, & Verheul, 2012). Both background factors provide entrepreneurial knowledge that might contribute to more realistic opinions on entrepreneurship (Ajzen, 2002) and affect EPA. We classify role models depending on the relationship with the respondent (*family, friends or boss*).

Since attitudes are affected by personality traits (Ajzen, 1991; Krueger et al., 2000), we also control for *initiative* and *empathy*. According to UNESCO, both attributes, among others, are considered “21st century” skills and capabilities (Scott, 2015), and there have been multiple calls for educators to make changes to educational programs to ensure that students develop these abilities in light of today’s economic challenges (Boyles, 2012).

Initiative is a key interpersonal skill for entrepreneurship (Rubin, Bommer, & Baldwin, 2002) and is extensively associated with entrepreneurial success (Boyd & Vozikis, 1994; Chen, Greene, & Crick, 1998; Frese, 2007; Frese & Fay, 2001; Sarasvathy, Simon, & Lave, 1998).

Empathy is a social skill that enables cooperative interaction to solve problems and create innovations through the “ability to read and manage the emotions of self and others” (Boyles, 2012: 47). Previous literature has documented a variety of benefits of empathy to entrepreneurship, including higher resilience when facing obstacles; more effective work with stakeholders and higher innovative capabilities, among other (Humphrey, 2013).

We measure *initiative* and *empathy* by constructing factors composed of items selected from the Personal Attributes Questionnaire by Spence, Helmreich, and Stapp (1974). We used 5-point Likert-type scales to measure empathy, ranging from “I am not at all ...” to “I am very ...” “... kind,” “... helpful to others,” “... aware of the feelings of others,” “... understanding of others,” etc. The factor analysis was performed (principal components estimation) with varimax rotation. The results show that the KMO test and Bartlett’s test of sphericity ( $\chi^2$ ) for empathy both offer satisfactory levels (KMO = 0.781;  $\chi^2 = 1332.1$ ,  $p < 0.01$ ). The variance explained rises to 65.760%.

The factor for *initiative* includes three 5-point Likert-type scales: “I ...” “... am not at all independent/very independent,” “... am very passive/very active,” “... give up very easily/never give up easily.” The results show that the KMO test and Bartlett’s test of sphericity ( $\chi^2$ ) both offer satisfactory levels (KMO = 0.682;  $\chi^2 = 580.49$ ,  $p < 0.01$ ). The variance explained rises to 65.179%.

## Data Analysis

Table A2 in Appendix A provides correlations between the variables. Based on the general rule of thumb that the correlation between the independent variables should not exceed 0.75 (Tsui, Ashford, St. Clair, & Xin, 1995), our results indicate that multicollinearity should not be a problem.

Since our research uses a single data source and cross-sectional data, which could result in common

method variance, we followed Podsakoff, MacKenzie, Lee, and Podsakoff’s (2003) advice and pretested the questionnaire with a sample of 258 students to assure the respondents’ understanding of the questions. Later, students were guaranteed full anonymity, and finally we ran Harman’s one-factor test to check that common method variance was unlikely to have affected the significance of the relationships we measured. To run the test, we introduced all 24 variables measuring EPA (dependent variable); inspirational triggers (independent variables); and work experience, empathy, initiative, and role models (controls). We found five factors with eigenvalues greater than 1. The results remained the same whether we used principal component factor analysis without rotation (total variance explained = 49.59%) or with varimax rotation (total variance explained = 49.59%), or principal axis factor analysis with varimax rotation (total variance explained = 37.540%). The first factor explains 17.69%, 14.20%, and 11.28% of the total variance, respectively, suggesting that common method variance is unlikely to have confounded the interpretations of our results.

We also conducted mean-difference tests. Table 2 provides the results of an analysis to explore gender differences in the levels of EPA. As a robustness check, we also asked about the level of attractiveness of “running your own business” and “being employed by someone else.” In particular, students answered the following questions: “Considering all the advantages and disadvantages (economic, personal satisfaction, social recognition, job security ...), indicate the attractiveness of the following professional options from 1 (totally unattractive) to 7 (highly attractive): running your own business; being employed by someone else.”

We found significant gender differences in the mean scores for EPA. In line with previous literature (Kickul et al., 2008; Santos et al., 2016), men obtain higher mean scores compared to women. We also found significant differences in the degree of

**TABLE 2**  
**Descriptive Statistics of Comparison of Entrepreneurial Attitudes of Female and Male Students**

Personal Attitude	Gender	n	Mean	SD	Confidence Interval 95%			<i>p</i> -value
					Lower Bound	Upper Bound		
EPA	Female	540	4.586	1.397	4.467	4.704	0.000	
	Male	378	5.054	1.191	4.934	5.174		
Attractiveness of running own business	Female	540	4.331	1.764	4.182	4.481	0.000	
	Male	378	4.937	1.679	4.767	5.106		
Attractiveness of being employed	Female	540	4.811	1.527	4.682	4.940	0.000	
	Male	378	4.362	1.620	4.199	4.526		

attractiveness of “running your own business,” which was higher for men. In contrast, the attractiveness of “being employed by someone else” was higher for women. All these measures were collected at the end of the academic year.

To test our hypotheses, we ran regressions for the full sample and for female and male students (Models 1, 2, and 3, in Table 3), where the dependent variable is EPA and the explanatory variables are the inspirational triggers. We also included personal attributes and other variables as controls to discover the additional variance of EPA explained by inspirational triggers. That is, we analyzed the moderating

effect of gender in Figure 1 by dividing our database into subsamples by gender and running the regression analysis separately. Regarding this, Ajzen (2006) warned about the unlikelihood of increasing a target variable (here, EPA) if there is little room for change in such a target. Extending Jones et al.’s (2004) ideas, strengthening male students’ EPA in a homogenous sample of male students enrolled at a business school who may already have a positive opinion about entrepreneurship may be ineffective because of a ceiling effect explaining the lack of significant effects. To test whether that ceiling effect existed and was driving our results, we considered

TABLE 3  
Linear Regression Analysis

Variables	EPA Full Sample		EPA Female Students		EPA Male Students		High EPA Female Students	
	Model 1 <i>n</i> = 918		Model 2 <i>n</i> = 540		Model 3 <i>n</i> = 378		Model 4 <i>n</i> = 206	
	Step 1 Controls	Step 2 Controls + Main Effects	Step 1 Controls	Step 2 Controls+ Main Effects	Step 1 Controls	Step 2 Controls + Main Effects	Step 1 Controls	Step 2 Controls + Main Effects
<b>Controls</b>								
Work experience	.64*	.66*	.024	.023	.124***	.120**	.039	.018
Empathy	.071	.077*	.010	.014	.230***	.229***	.069	.074
Initiative	.183***	.166***	.200***	.192***	.140**	.127*	.222***	.214***
Family role model	.152***	.160***	.131***	.136***	.160***	.165***	.140**	.172**
Friend role model	.69*	.52	.041	.015	.061	.059	.034	-.003
Boss role model	.69*	.51	.061	.049	.064	.051	.001	.023
<b>Inspirational triggers</b>								
Views of a professor		.064		.100**		.034		.189**
Views of an external speaker		.012		.054		-.042		-.128
Views of a visiting entrepreneur		.039		-.002		.070		-.008
Views of judges of the competition		-.058		-.073		-.052		-.105
Meeting would-be entrepreneurs or recent or young entrepreneurs		.054		.126***		-.031		.056
Views of classmate(s)		.030		.024		.021		.075
Preparation for a BPC		.109**		.134***		.085		.134*
Activities in a school or university association		.050		.063		.064		.042
Working on an interdisciplinary project		.009		-.013		-.012		-.091
ΔR <sup>2</sup> (%)	12.5	4.4	8.7	7.7	22.8	2.4		6.1
ΔF	21.728	5.311	8.439	5.352	18.275	1.280		1.543
Final adjusted R <sup>2</sup> (%)	15.5			14.0		22.1		9.6
F		12.248***		6.835***		8.146***		2.455**
Condition number		8.555		8.444		9.127		11.791
VIF lower–upper limits	1.058–1.630		1.000–1.172		1.000–1.037		1.043–1.130	

\* *p* < 0.10

\*\* *p* < 0.05

\*\*\* *p* < 0.01

the male EPA mean as a cut-off point (5.054, in Table 2), selected a subsample of female students with EPAs higher than this cut-off point (206 women with high EPA), and ran the linear regression analysis only for female students with high EPA (Model 4 in Table 3). Since results for the total female subsample are similar to the high-EPA female subsample, we did not find evidence suggesting that a ceiling effect (instead of a gender-moderating effect) was causing the differences between the male and female subsamples.

Finally, to explore differences in the relationships between inspirational triggers and the EPA of female and male students at different academic levels, we ran *post hoc* tests with mean-difference tests. We selected participants from each academic level and for each inspirational trigger. We split the sample into two subsamples of students who (a) remembered a particular event or input as an inspirational trigger and (b) did not remember that particular event or input as an inspirational trigger, and we studied differences in their EPA mean values. That is, we differentiated students that remembered a given academic activity as an event or input that had “changed their hearts and minds” and made them consider becoming an entrepreneur and those that did not remember the same academic activity as one that had “changed their hearts and minds.” We analyzed male and female subsamples separately.

## RESULTS

After validating the regression model’s assumptions, we estimated hierarchical lineal regression models (Table 3) for the full sample (Model 1), distinguishing between female and male students (Models 2 and 3, respectively). We entered control variables in step 1 and then inspirational triggers in step 2.

Five out of our six controls were relevant in explaining students’ EPA (Model 1, step 1). Comparing Models 2 and 3, we found gender differences in step 1 regressions: while *initiative* and *family role model* have the expected positive and significant influence on EPA for female and male students, *empathy* and *work experience* are only relevant for male students.

The rise in the adjusted  $R^2$  when including inspirational triggers is significant in all the regressions, especially for the full sample, with a 4.4% increase ( $\Delta F=5.311$ ,  $p<0.01$ ), female students, with a 7.7% ( $\Delta F=5.352$ ,  $p<0.01$ ), and male students with 2.5% ( $\Delta F=1.364$ ,  $p<0.01$ ). The *F*-statistic and the Block

$\chi^2$  is significant for all samples at the  $p<0.001$  level. All these statistics considered, the experience at the business school is particularly relevant for explaining females’ EPA.

From Model 1 (step 2), inspirational triggers from the participation in academic activities with influential people such as professors (Hypothesis 1a), external speakers (Hypothesis 1b), visiting entrepreneurs (Hypothesis 1c), judges of competitions (Hypothesis 1d), classmates (Hypothesis 1e), and would-be entrepreneurs or recent or young entrepreneurs (Hypothesis 1f) do not influence students’ EPA, so these hypotheses are not supported. Inspirational triggers from participation in entrepreneurial experiential learning activities, such as BPC (Hypothesis 3a) positively influence students’ EPA, whereas participation in student associations (Hypothesis 3b) and interdisciplinary projects (Hypothesis 3c) do not influence EPA. Thus, Hypothesis 3a is supported while Hypothesis 3b and Hypothesis 3c are not.

Concerning Hypothesis 2 and Hypothesis 4, the most remarkable observations relate to how gender differences impact the inspirational triggers for EPA. Results indicate that inspirational triggers have an impact at the  $p<0.05$  level *only* on females’ EPA, suggesting that these inspirational triggers are only effective for developing a positive attitude toward entrepreneurship in female students. Participation in academic activities with influential people only affect the EPA of female students, specifically with professors and recent or would-be entrepreneurs. Results also show that participation in entrepreneurial experiential learning activities do not influence males’ EPA, but do influence females’ EPA. Results suggest that this influence is exerted by the preparation for a BPC. Overall results support Hypothesis 2 but not Hypothesis 4, because whereas activities with influential people have a stronger influence on female students, entrepreneurial experiential learning activities do not have such a strong influence on males’ EPA.

### **Post Hoc Tests: EPA Comparison between Students who Remember and Those Who do not Remember a Given Event or Input as an Inspirational Trigger (by Gender and Academic Level)**

We performed *post hoc* tests, by academic level, with mean-difference tests for the EPA of male and female students who remembered a given school event or input as an inspirational trigger, compared to those who did not remember it as an inspirational

**TABLE 4**  
**Difference in Mean EPA by Inspirational Triggers: First-Year Students**

Inspirational Triggers	Female			Male			
	Average EPA = 4.59 (SD = 1.31) n = 159	Remembered Trigger	Nonremembered Trigger	Differ. (p-value)	Average EPA = 4.87 (SD = 1.22) n = 117	Non-remembered Trigger	Differ. (p-value)
Views of a professor	5.53	4.39		1.14 *** (0.001)	5.18	4.85	0.32 (0.497)
Views of an external speaker	5.73	4.38		1.35 *** (0.000)	4.75	4.88	-0.13 (0.752)
Views of a visiting entrepreneur	5.50	4.41		1.09 *** (0.003)	5.02	4.86	0.165 (0.683)
Views of judges of the competition <sup>a</sup>	N.A.	N.A.		N.A.	N.A.	N.A.	N.A.
Meeting would-be entrepreneurs or recent or young entrepreneurs	5.41	4.45		0.95 ** (0.045)	4.56	4.90	-0.33 (0.456)
Views of classmate(s)	4.48	4.96		0.48 (0.342)	5.00	4.87	0.128 (0.883)
Preparation for a BPC <sup>a</sup>	N.A.	N.A.		N.A.	N.A.	N.A.	N.A.
Activities in a school or university association	5.29	4.47		0.82 (0.106)	6.00	4.84	1.16 (0.105)
Working on an interdisciplinary project	5.50	4.49		1.01 (0.447)	4.25	4.89	-0.64 (0.371)

<sup>a</sup> Students do not have BPC in their first academic level. \* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

trigger. While these tests only provide evidence of the relationships between variables, and not of influences or causes, they are useful to identify differences by academic level for female and male students. To do this, and after selecting students from a given academic level (first, second, or third<sup>1</sup>) and gender (female or male), our sample was split into two subsamples by inspirational trigger: (a) students that remembered the trigger (the specific inspirational trigger variable is 1), and (b) students that did not remember the trigger (inspirational trigger variable is 0). Tables 4, 5, and 6 present results.

As with the regressions, the results suggest that the inspirational triggers are more relevant for female than for male students. At early educational stages (Table 4), none of the triggers are effective for males. The most effective triggers are participation in academic activities with people of higher legitimacy (professors, external speakers, visiting entrepreneurs, would-be entrepreneurs), compared to people with less legitimacy (classmates) and participation in entrepreneurial experiential learning activities.

However, on subsequent courses, participation in experiential learning activities, such as BPCs and associations in second and third years (Tables 5 and 6), are associated with higher levels of females' EPA. Participation in a BPC is the most important trigger for males, effective at both second and third year. The two other triggers that play a role for men are participation in associations, and activities with influential people such as a visiting entrepreneur; however, these are effective only in the third year.

## DISCUSSION AND CONCLUSIONS

This work builds on the ELM to examine how nine different entrepreneurship academic activities at a business school impact students' EPA, paying special attention to gender differences and academic year. We find that women respond differently to academic initiatives designed to stimulate entrepreneurial attitude than do men (i.e., women recognize different inspirational triggers, and more of them). Our results suggest that the inspirational triggers are mainly effective for promoting female EPA, and that the degree of effectiveness differs depending on the academic year. Our results go beyond previous literature reporting gender differences in the influence of EE. The general finding is that education seems to have a greater effect on females than on males

<sup>1</sup> Students from levels four and five, as well as from the master's degree, were excluded due to their low number for comparisons between gender.

**TABLE 5**  
**Difference in Mean EPA by Inspirational Triggers: Second-Year Students**

Inspirational Triggers	Female			Male				
	Average EPA = 4.60 (SD = 1.47) n = 142	Remembered Trigger	Non-remembered Trigger	Differ. (p-value)	Average EPA = 5.24 (SD = 1.25) n = 105	Remembered Trigger	Non-remembered Trigger	Differ. (p-value)
Views of a professor	5.94	4.52		<b>1.42 ***</b> <b>(0.008)</b>	5.28	5.23		0.05 (0.875)
Views of an external speaker	6.25	4.56		<b>1.69 **</b> <b>(0.049)</b>	5.37	5.22		0.15 (0.691)
Views of a visiting entrepreneur	5.57	4.55		<b>1.02 *</b> <b>(0.073)</b>	5.71	5.17		0.54 (0.164)
Views of judges of the competition	5.13	4.59		0.54 (0.611)	5.29	5.23		0.06 (0.913)
Meeting would-be entrepreneurs or recent or young entrepreneurs	5.56	4.57		0.99 (0.185)	5.27	5.23		0.04 (0.917)
Views of classmate(s)	4.25	4.60		0.35 (0.814)	5.50	5.22		0.28 (0.630)
Preparation for a BPC	5.80	4.51		<b>1.29 ***</b> <b>(0.007)</b>	5.86	5.16	<b>0.70 *</b> <b>(0.077)</b>	
Activities in a school or university association	5.90	4.50		<b>1.4 ***</b> <b>(0.003)</b>	5.82	5.20		0.62 (0.200)
Working on an interdisciplinary project	6.00	4.58		1.42 (0.176)	5.69	5.22		0.47 (0.463)

\* $p < 0.1$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ .

(Kickul et al., 2008; Wilson et al., 2007), and Packham, Jones, Miller, Pickernell, and Thomas (2010) found that gender moderates the effectiveness of EE on EPA. However, previous EE literature has neglected to indicate how EE achieves its aims and how the individual components of an EE program (rather than EE as a monolithic unit) impact students (Bergmann et al., 2016; Fayolle & Gailly, 2008; Liñán, Urbano, & Guerrero, 2011; Martin et al., 2013; Wilson et al., 2007). We contribute to the EE research with findings on nine academic activities that can become inspirational triggers and affect students' EPA differently, depending on gender and academic level (see Table A1), thereby unpacking the "package" of EE. Specifically, according to the standardized beta values, the most effective inspirational trigger for women is preparation for a BPC. Overall, we find that the positive impact of experiential learning activities is larger for females than for males (women obtain more positive signs with higher significances), contrary to what was expected. We contribute to the work of Pittaway and Cope (2007) and Pittaway et al. (2010, 2015) by showing that EE can benefit from the use of experiential learning activities not only because they promote entrepreneurial

learning, but also because they are effective as inspirational triggers and for overcoming gender stereotypes about entrepreneurship, especially BPCs.

Relatedly, previous research has found that the effects of prior experiences—such as participation in experience-based activities—are larger on the perceived self-efficacy of women than of men (Scott & Ciani, 2008). As previously argued, women tend to perceive a larger entrepreneurial knowledge gap than men (BarNir et al., 2011). In this case, the practicing of entrepreneurial skills somehow *overcomes* a much larger informational gap among women and could explain the greater change in women's perceived self-efficacy, and in turn EPA. Along this line, social cognitive theory and social cognitive career theory (Lent et al., 1994) suggest that perceived self-efficacy is developed through (successful) task completion (besides observing others complete tasks or being encouraged by respected others [Bandura, 2001; BarNir et al., 2011; Lent et al., 1994]).

According to the ELM, this activity corresponds to the central route and likely generates stronger and more enduring effects. Participating in such an intensive engagement, jointly with teachers and

**TABLE 6**  
**Difference in Mean EPA by Inspirational Triggers: Third-Year Students**

Inspirational Triggers	Female			Male		
	Remembered Trigger	Nonremembered Trigger	Differ. (p-value)	Remembered Trigger	Nonremembered Trigger	Differ. (p-value)
		Average EPA = 4.78 ( <i>SD</i> = 1.52) <i>n</i> = 146			Average EPA = 5.13 ( <i>SD</i> = 1.19) <i>n</i> = 122	
Views of a professor	5.25	4.76	.442 *** (.000)	5.17	5.12	0.05 (0.442)
Views of an external speaker	5.57	4.70	0.49 ** (0.040)	5.33	5.11	0.22 (0.592)
Views of a visiting entrepreneur	5.21	4.72	0.49 (0.221)	5.60	5.03	0.57 * (0.093)
Views of judges of the competition	4.50	4.79	-0.29 (0.621)	5.56	5.10	0.46 (0.287)
Meeting would-be entrepreneurs or recent or young entrepreneurs	6.18	4.68	1.50 *** (0.002)	5.34	5.11	0.23 (0.597)
Views of classmate(s)	5.91	4.71	1.2 ** (0.031)	5.67	5.10	0.57 (0.257)
Preparation for a BPC	5.73	4.69	1.04 ** (0.024)	5.69	5.07	0.62 * (0.086)
Activities in a school or university association	5.54	4.71	0.83 * (0.070)	6.14	5.05	1.09 *** (0.008)
Working on an interdisciplinary project	6.25	4.76	1.49 (0.170)	6.13	5.11	1.02 (0.234)

\**p* < 0.1, \*\**p* < 0.05, \*\*\**p* < 0.01.

entrepreneurs, helps students start to develop their identities as entrepreneurs (Pache & Chowdhury, 2012). In effect, EE demands a strong experiential component because much entrepreneurial knowledge is tacit and difficult to codify (Tracey & Phillips, 2007). Our results for women also align with previous findings that female students perceive the ability to prepare business plans as the most important skill for initiating entrepreneurial activity (Petridou et al., 2009). The stable group that prepares for a BPC over a three-month period can be viewed as a community providing references for social comparison. This is particularly helpful for females in training this skill, which they perceive as vitally important, and to “comprise relationships that can offer feedback and serve as ‘emotional anchors’ in the process of personal learning” (Higgins & Kram, 2001: 278, as cited in Petriglieri & Petriglieri, 2010). In addition, meeting would-be entrepreneurs, or recent or young entrepreneurs, and the views of professors are also very relevant for women. These results suggest that the entrepreneurial expertise of such figures is particularly relevant as a peripheral cue and influences women’s EPA. Regarding professors, one possible explanation according to the ELM

might be the repeated nature of students’ contact with them. Teachers can play a crucial role in making female students feel that entrepreneurship is an attractive option. Previous research has found that female students have more of a need for mentoring and tutoring structures (Klyver & Grant, 2010; Petridou et al., 2009; Tynan et al., 2009), and that women prefer close or intimate role models to those that are more distant and not personally known to them (Singh, Vinnicombe, & James, 2006). Regarding would-be entrepreneurs, they probably enhance students’ feelings of “personal relevance,” since these entrepreneurs are likely to be of a similar age to the students themselves, allowing students to visualize themselves as potential entrepreneurs. These recent entrepreneurs are probably able to transmit their enthusiasm to students and increase their attraction toward entrepreneurship. Other studies have also highlighted that (in this case, symbolic) role models should be similar to potential entrepreneurs in some way (Byrne et al., 2019; Krueger & Brazeal, 1994; Lockwood & Kunda, 1997) so that it is easy for potential entrepreneurs to identify with them.

No academic activity is proven to be effective as an inspirational trigger for men, suggesting that it is

the student's circumstances prior to entering the business school that conditions their EPA. Therefore, the EPA of men is less malleable through the business school's academic activities than is the case for women. In addition, when academic activities are required and teachers focus on "average" students (in our case, not on female students with lower EPA, nor on male students with expected higher EPA), convergence effects may appear (Fayolle & Gailly, 2015). The weak impact of inspirational triggers involving the views of influential people on males' EPA could be explained by the socialization of males to be more independent and competitive compared to females (Zelezny et al., 2000; Carrier, 2009); they internalize this self-concept and develop this role (Ozden, 2008).

We also find that factors such as initiative, family role model, empathy, and work experience condition male EPA, which suggests that there is even more explained variance in the estimated models for male EPA than for female EPA, or for full samples. For females, in turn, the inspirational triggers have a significant effect on EPA. According to the ELM, it might be that men believe, in general, that they have more prior entrepreneurial knowledge compared to women and have a less malleable entrepreneurial attitude. This could produce a hysteresis effect and explain why some studies have not found a positive impact of EE on the target variable (in our case, entrepreneurial attitude) (Fayolle & Gailly, 2015; Nabi, Walmsley, Liñán, Akhtar, & Neame, 2018). In the case of male students already having a higher EPA, we suggest that these activities serve mainly to provide students with opportunities to learn and incubate resources and less to inspire them (Souitaris et al., 2007).

Concerning the academic journey through school, our exploratory analysis suggests that at early educational stages, women's EPA is related mainly to triggers derived from participation in academic activities with influential people who transmit their views and testimonials to students. However, at subsequent stages, triggers based on participation in experiential academic activities (i.e., BPCs and associations in second and third years) also acquire relevance. These results suggest that participation in experiential activities reinforces female students' attraction toward entrepreneurial careers only after these entrepreneurial careers are validated by the views of influential people. For example, the views of a professor or an external speaker are associated with higher levels of female EPA at all academic levels. We believe this may indicate that women have a

less developed view of their career options as entrepreneurs at the time of entering business school. The views of influential people may be very relevant in helping women realize that entrepreneurship is a realistic option for them, with these activities generating and reinforcing that idea during every academic year at the business school. Indeed, previous literature has suggested that these types of activities are helpful in raising business students' awareness of the different dimensions of entrepreneurship by exposing them to the real-life entrepreneurial experiences of guest speakers (Pache & Chowdhury, 2012). Only after assimilating the idea that entrepreneurship is a realistic option for them do women receive additional persuasion from other learning activities based on experiential learning that require more significant mental effort to process the information and messages involved, raising awareness of entrepreneurship. Also remarkable is the large and highly significant coefficient for meeting would-be entrepreneurs, and the views of classmates, in the third year for women, suggesting that, at later educational stages, similar reference people are particularly effective triggers. Would-be entrepreneurs help female students imagine themselves as entrepreneurs when approaching graduation, and classmates form relevant sentient communities that facilitate identity work by providing social comparison, feedback, and reassurance (Gersick, Bartunek, & Dutton, 2000; Parker, Arthur, & Inkson, 2004).

In contrast, participation in a BPC is the most important trigger for male students, while participation in school activities or associations and in activities with visiting entrepreneurs are effective only in the third year. This may indicate that the majority of male students have already considered entrepreneurship as a viable option before entering the business school. They can get inspiration at late educational stages through those learning activities that allow them to train in entrepreneurial competences (i.e., participation in BPCs and in school activities or associations) and, to a lesser degree, while listening to visiting, experienced entrepreneurs.

In addition, according to the ELM, as the relevance a person gives to an issue decreases, peripheral cues (in our case, the views of influential people) become "relatively more important determinants of persuasion" (Petty & Cacioppo, 1986: 152). Conversely, as scrutiny of an argument intensifies, peripheral cues become relatively less important determinants of persuasion (Petty & Cacioppo, 1986: 152). In our case, personal relevance regarding becoming an entrepreneur increases when approaching graduation.

Thus, it might be that the views of influential people have more impact at early educational stages than at later educational stages. At later educational stages, students' argument scrutiny is expected to be higher, and direct experience (enabling argument scrutiny) might become more relevant.

It is possible to establish some parallelism between these differences in the impact of inspirational triggers, depending on the academic year, and previous research such as that by Tracey and Phillips (2007), who proposed an approach to integrate (social) entrepreneurship students into EE involving techniques such as case analysis and entrepreneurship speaker engagements at early educational stages, and business planning and social enterprise internships at later stages. The logic behind this order is probably the maturity and knowledge gained by students, and the consolidation of their entrepreneurial identity throughout their academic journey. Relatedly, we find that the only relevant inspirational triggers (and only for women) in the first year are views of influential people, and that experiential learning activities start to have an impact in the second year and are the most relevant triggers for both men and women in the third year.

### Practical Implications

Scholars have argued that EE should consider women's beliefs about entrepreneurship (Bird & Brush, 2002; Byrne & Fayolle, 2010; Liñán, Rodríguez-Cohard, & Rueda-Cantuche 2011; Santos et al., 2016) acquired from childhood through socialization, learning experience, and the educational system (Strobl et al., 2012), and our study offers several practical implications for academic institutions. Our results suggest that to effectively support female entrepreneurship, it is vital to take into account gender differences in the impact of inspirational triggers on EPA so that activities can be properly designed to overcome gender stereotypes regarding entrepreneurship and effectively reach female students (Table A1 in Appendix A). First, results indicate that the inspirational parts of programs play a role in developing attraction toward entrepreneurship among students and must, therefore, be carefully designed to have the largest impact. In general, the need to consider gender and academic level differences is advisable when designing initiatives to promote entrepreneurship through the development of positive attitudes toward entrepreneurial careers. Second, results from our *post hoc* exploratory analysis also indicate that the most effective long-term activity for promoting

EPA in female students is preparation for a BPC, particularly for second- and third-year students. Hence, academic institutions wishing to foster female EPA should combine long-term academic activities such as BPCs with the promotion of close contact with reference people by organizing events at the institution that favor networking. In addition, they should focus on developing women's abilities and feelings, since results indicate that these individuals play a key role in explaining female attraction toward entrepreneurship. Third, and in essence, the results point to the importance of training teachers not only to teach entrepreneurship but also to inspire students and encourage them to seriously consider becoming an entrepreneur by overcoming gender stereotypes.

The practical implications mentioned above can help guide educators in the planning of suitable academic activities at each academic level that can become inspirational triggers and promote female (and male) EPA, and could be very useful for shaping policies that must continue to focus on providing women with a higher level of infrastructural support to facilitate their decision to start up their own venture (Marlow & Patton, 2005), as well as to promote EE, which must play a vital role in the advocacy of female entrepreneurship (Kickul et al., 2008; Wilson et al., 2007).

### Limitations and Future Research

This work suffers from some limitations that, if properly addressed, might help to advance future research. First, we use a cross-sectional design; future research could introduce longitudinal methodologies to study the impact of inspirational triggers on the evolution of male and female students' EPA and EI during their time at the school, and of their subsequent entrepreneurial behavior after leaving the school. According to the ELM, it should be of special interest to study differences in the lasting effects of inspirational triggers that change attitudes through the central route and the peripheral route. In addition, while we find that BPCs are effective at increasing EPA, some research has warned that such activities, being core to EE, have not provided enough evidence of their value as predictors of future entrepreneurial success. For example, at neither the individual level (Honig, 2004) nor the firm level in the context of nascent organizations, and when investigating outcomes of business planning (Honig & Karlsson, 2004), are relationships between BPCs and entrepreneurial success found; thus, future research

may benefit again from the use of longitudinal designs to advance the study of such relationships.

Second, this research does not consider the gender and experience of influential people participating in academic activities or other issues related to the planning and performing of academic activities. For example, we do not consider the nature of the message by influential people or the information during other activities, which could be either female- or male-gendered, since it is difficult to codify questions regarding this aspect in a survey. However, previous studies have suggested that this influences EI, work identity development, the impact of role models and gender differences in business opportunity evaluations (Ahl, 2006; Gupta et al., 2008; Gupta, Goktan, & Gunay, 2014; Sealy & Singh, 2010; Singh et al., 2006).

Third, considering Higgins's (1998) distinction between the goals of promotion and prevention, a limitation of this work relates to the absence of information on the content of activities that could determine their focus on promotion (e.g., attaining gains, achievement, advancement, customer acquisition) or prevention (e.g., maintaining nonlosses, safety, responsibility, security, customer retention). Future research could also consider the content of academic activities to try to identify those that trigger a focus on promotion or prevention among males and females. In effect, given that a focus on promotion positively affects start-up funding, while a focus on prevention negatively affects it, this has strong implications for entrepreneurial investment decisions (Kanze, Huang, Conley, & Higgins, 2018).

Fourth, we focus on biological sex, and not on gender defined as "what is regarded as masculine or feminine and is independent of a person's biological sex" (Ahl, 2006: 596). For instance, Severiens and Ten Dam (1998) found that gender identity can explain different uses of learning styles, and Liñán Jaén, and Martín (2022) found that gender-role orientation affects female entrepreneurial activity. Additionally, and regarding the teams of students that participated in the BPC, neither their composition (e.g., number of members, gender, complementary background, cultural diversity, etc.) nor processes (e.g., communication, conflict management, cooperation, participatory decision-making, etc.) were considered. Future research could incorporate the above elements in the analysis. It seems plausible that female speakers will have a greater impact on female students (Rocha & Praag, 2020).

Lastly, we limit our analysis to students at a single business school located in France; results could be

conditioned by the academic and geographical context. We recommend comparing our results with those for other business schools and geographical locations to check for generality. Our context (the school) and sample are gender-balanced; however, according to Dresden, Dresden, Ridge, and Yamawaki (2018) it would be of interest to explore changes in the impact of activities on female and male EPA depending on the context (male-dominated versus female-dominated). Furthermore, future research could test whether the composition and processes of student teams moderate the influence of students' team-based activity participation in strengthening their EPA. As moderating factors, team composition and team processes will allow researchers to address issues such as "when" or "for whom" (Frazier et al., 2004: 116) participation in the BPC will strengthen entrepreneurial attitude.

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**Laura Padilla-Angulo** (lpadilla@uloyola.es) (PhD Toulouse School of Economics) is an associate professor (with tenure) of Economics in the Department of Economics at Universidad Loyola Andalucía, Seville, Spain. She is an applied economist, and her research interests lie in the areas of entrepreneurship, personnel economics, behavioral economics, and corporate governance.

**Antonia Mercedes García-Cabrera** (antonia.garcia@ulpgc.es) (PhD Las Palmas de Gran Canaria University) is a full professor of Strategic Management at the Economics and Business Administration Department of Las Palmas de Gran Canaria University, Spain. Her areas of academic interest include entrepreneurship, international entrepreneurship, and multinational corporations and cross-cultural management.

**Ana M. Lucia-Casademunt** (alucia@uma) (PhD Córdoba University, Spain) is an associate professor (with tenure) of Human Resources Management at the Economics and Business Administration Department of Málaga University, Spain. Her areas of academic interest include entrepreneurship, human resources management, and cross-cultural management.

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## APPENDIX A

**TABLE A1**  
**Overview of Inspirational Triggers and Students' EPA**

Inspirational Triggers	Brief Description	References	Gender	Findings of this Research: Significant Relationships between Inspirational Triggers and Students' EPA By Gender			Main Arguments to Explain Effects of Inspirational Triggers on EPA	
				Statistical Estimation Technique				
				Linear Regression Models	Difference in Means by Academic Year	1st 2nd 3rd		
Views of a professor	Interactions with professors during lectures and all related activities led by professors	Byrne et al., 2019; Cherviluk et al., 2001; Klyver & Grant, 2010; Koh et al., 1995; Petridou et al., 2009; Radu & Loué, 2008; Singh et al., 2006; Souitaris et al., 2007; Tynan et al., 2009	Women Men	+	+	+	Professors are leaders for students and may have an influence on them; they are likely to generate enthusiasm for entrepreneurship and "emotional contagion"; they can act as symbolic role models that help in the development of students' entrepreneurial identity. Female students have more of a need for mentoring and tutoring structures and prefer close or intimate role models to those more distant and not personally known.	
Views of an external speaker	Interactions with external speakers, academics, researchers, public officials, etc.) invited by the school to give speeches and share their views and testimonials with students	Byrne et al., 2019; Pache & Chowdhury, 2012; Radu & Loué, 2008; Souitaris et al., 2007	Women Men	+	+	+	Students' exposure to views and testimonials of influential people such as external speakers that show positive outcomes of entrepreneurial activity convey enthusiasm for entrepreneurship. These figures can act as symbolic role models that help in the development of students' entrepreneurial identity. The views of influential people may be very relevant in helping women realize entrepreneurship is a realistic option for them, with these activities generating and reinforcing that idea during every academic year at the business school.	
Views of a visiting entrepreneur	Interactions with visiting entrepreneurs invited by the school to give speeches and share their views and testimonials with students	Byrne et al., 2019; Pache & Chowdhury, 2012; Radu & Loué, 2008; Souitaris et al., 2007	Women Men	+	+	+	Students' exposure to views and testimonials of visiting entrepreneurs has similar effect to exposure to external speakers, as these are influential figures that may show positive outcomes of entrepreneurial activity (see the arguments for external speakers above). Exposure to the real-life entrepreneurial experiences of visiting entrepreneurs is helpful in raising business students' awareness of the different dimensions of entrepreneurship, and particularly in helping women during the first and second course at the business school realize that entrepreneurship is a realistic option for them	

TABLE A1  
(Continued)

Inspirational Triggers	Findings of this Research: Significant Relationships between Inspirational Triggers and Students' EPA By Gender						Main Arguments to Explain Effects of Inspirational Triggers on EPA	
			Gender	Linear Regression Models	Difference in Means by Academic Year			
					1st	2nd	3rd	
Views of judges of a competition <sup>a</sup>	Interactions with members of the BPC jury (teachers, or business executives) before which students must orally defend their business	Byrne et al., 2019; Radu & Loué, 2008; Souitaris et al., 2007	Women Men	N.A. N.A.				Students' exposure to views and testimonials of other influential people such as judges of a competition may also convey enthusiasm for entrepreneurship among the students. The perspective that comes from being evaluated by experienced executives who are willing to contribute their time to advise them generates a feeling of empowerment and a climate of recognition, resulting in a supportive learning environment. Although such a positive effect is found for women in the second course and for men in the third course, this effect is not statistically significant.
Meeting would-be entrepreneurs, or recent or young entrepreneurs	Interactions with visiting entrepreneurs invited by the school to give speeches and share their views and testimonials with students	Byrne et al., 2019; Krueger & Brazeal, 1994; Lockwood & Kunda, 1997; Radu & Loué, 2008	Women Men	+ +	+ +	+ +	These types of entrepreneurs are particularly able to transmit their enthusiasm to students and allow them to recognize and imagine themselves as potential entrepreneurs because they are of a similar age. Can act as symbolic role models that help in the development of students' entrepreneurial identity. Symbolic role models should be somehow similar to potential entrepreneurs so that it is easy for students to identify with them. At different educational stages, similar "reference people" are effective triggers, particularly for women.	
Views of classmate(s)	Interactions with classmates in the school	Bergmann et al., 2016; Gersick et al., 2000; Parker et al., 2004; Souitaris et al., 2007	Women Men				Classmates are "reference people" for students. (a) higher numbers of students participating in academic activities related to entrepreneurship convey to all students the message that the school encourages entrepreneurship and that becoming entrepreneurial is a desired behavior; (b) if comparable peers engage in entrepreneurial academic activities and increase their favorability toward entrepreneurship, students might also consider this option for themselves. At later educational stages, similar reference people are particularly effective triggers for women. Classmates become relevant sentient communities that facilitate identity work by providing social comparison, feedback, and reassurance.	

TABLE A1  
(Continued)

Inspirational Triggers	Brief Description	References	Findings of this Research: Significant Relationships between Inspirational Triggers and Students' EPA By Gender						Main Arguments to Explain Effects of Inspirational Triggers on EPA	
			Statistical Estimation Technique			Difference in Means by Academic Year				
			Gender	Linear Regression Models	1st	2nd	3rd			
BPC Preparation <sup>a</sup>	Students work in teams of three to four members to develop a viable entrepreneurial project. Later, students work collaboratively on building a business plan, coached by teachers and professionals, over three months. Next, students must orally defend their business plan before an internal jury composed of teachers from the school in the first round, and of business executives in the second round, to qualify for a €3,500 prize. Entrepreneurs participate in examination juries and validate all steps of the project. Entrepreneurs might also become sponsors.	Bandura, 2001; BarNir et al., 2011; Higgins & Kram, 2001; Lent et al., 1984; Miller & Rice, 1967; Pache & Chowdhury, 2012; Peinidou et al., 2009; Petriglieri & Petriglieri, 2010; Scott & Giani, 2008	Women Men	+	N.A. N.A.	+	+	Long-lasting sentinel communities facilitate identity work. In addition, personal experience of a reality facilitates individuals' evaluations of the merits of such a reality and the resulting change in related attitudes, such as entrepreneurial attitude. Accordingly, action learning activities positively affect students' EPA.	The effects of prior experiences—like the entrepreneurial experience acquired via participation in experience-based activities—are larger on the perceived self-efficacy of women than of men. Women tend to perceive a larger entrepreneurial knowledge gap than men, and the practicing of entrepreneurial skills somehow overcomes a much greater informational gap among women and could explain the greater change in women's perceived self-efficacy, and in turn EPA. Social cognitive theory suggests that perceived self-efficacy is developed through (successful) task completion (besides observing others' complete tasks or being encouraged by respected others). Participating in such intensive engagement, jointly with teachers and entrepreneurs, helps students start to develop their identities as entrepreneurs. Female students perceive the ability to prepare business plans as the most important skill for initiating entrepreneurial activity. The BPC prepared over a three-month period within a stable group can be viewed as a community, providing references for social comparison and help females train this skill.	
Activities in a school or university association	Students participate in different types of associations, including sports, cultural, professional, and	Padilla-Angulo et al., 2019; Pittaway et al., 2010; Petriglieri & Petriglieri, 2010	Women Men			+	+	University associations simulate aspects of entrepreneurial learning such as "learning by doing" and social learning, and so boost EPA. When students create associations at school and boost those already existing by designing and developing collective activities to reach an end,		

CENTRAL ROUTE: ENTREPRENEURIAL EXPERIMENTAL LEARNING ACTIVITIES

TABLE A1  
(Continued)

Inspirational Triggers	Brief Description	References	Gender	Statistical Estimation Technique				Main Arguments to Explain Effects of Inspirational Triggers on EPA
				Linear Regression Models	Difference in Means by Academic Year	1st	2nd	
humanitarian, among others. Associations organize events such as workshops and competitions, search for sponsors of events, manage funds and facilitate networking. The school encourages students to join associations or to create their own from the start of their tenure at the school.								they are behaving as entrepreneurs. Participation in entrepreneurship clubs and societies, a type of student association, positively impacts student self-efficacy. In addition, participation in university associations may help the student members who demand and receive loyalty from other members to experience belonging to the community of “entrepreneurs” and project themselves as actual entrepreneurs, facilitating identity work. At later educational stages, participating in university associations is an effective trigger, particularly for women.
Participation in associations earns academic credit.	Student participants in projects (e.g., course group assignments) from different programs at the school are mixed. Participation involves the election of group members, in class and outside of class group work, as well as writing of reports and oral presentations.	Alves et al., 2007; King & Anderson, 1990; Padilla-Angulo et al., 2019; Payne, 1990; Thornburg, 1991	Women Men					Group diversity fosters creativity and innovation, and entrepreneurship is an act of creativity and innovation. Thus, interdisciplinary diversity during activities at business schools may increase students' EPA. Such a positive effect is found for women in the first, second, and third course and for men in the second and third course, although the effect is not statistically significant.

<sup>a</sup> Students do not have BPC in their first academic level.

**TABLE A2**  
**Pearson Correlations and p-Statistics among Model Variables**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. EPA	1															
2. Work experience	.147*** (0.000)	1														
3. Initiative	.203*** (0.000)	.208*** (0.000)	1													
4. Empathy	.278*** (0.000)	.254*** (0.000)	.587*** (0.000)	1												
5. Family role model	.209*** (0.000)	0.057 (0.085)	0.061 (0.066)	.151*** (0.000)	1											
6. Friend role model	.157*** (0.000)	.141*** (0.000)	.116*** (0.000)	.196*** (0.000)	.190*** (0.000)	1										
7. Boss role model	.129*** (0.000)	.074** (0.025)	−.014 (0.673)	.104*** (0.002)	.167*** (0.000)	.154*** (0.000)	1									
8. Views of professor	.131*** (0.000)	0.016 (0.638)	−0.037 (0.268)	−0.017 (0.604)	0.027 (0.415)	0.026 (0.426)	0.010 (0.759)	1								
9. Views of external speaker	.117*** (0.000)	−.067* (0.042)	0.006 (0.864)	0.004 (0.907)	0.039 (0.241)	.078** (0.018)	0.012 (0.720)	.329*** (0.000)	1							
10. Views of visiting entrepreneur	.150*** (0.000)	−0.011 (0.740)	−0.015 (0.644)	0.021 (0.533)	0.044 (0.183)	.066** (0.047)	0.044 (0.187)	.332*** (0.000)	.457*** (0.000)	1						
11. Views of classmate	.094*** (0.004)	−0.034 (0.299)	−0.032 (0.333)	0.010 (0.759)	−0.038 (0.247)	0.029 (0.381)	0.028 (0.401)	.286*** (0.000)	.309*** (0.000)	.220*** (0.000)	1					
12. Views of would-be entrepreneur	.124*** (0.000)	−0.038 (0.245)	−0.013 (0.688)	0.025 (0.447)	0.019 (0.564)	0.054 (0.101)	0.043 (0.197)	.276*** (0.000)	.279*** (0.000)	.367*** (0.000)	.176*** (0.000)	1				
13. BPC	.158*** (0.000)	0.056 (0.653)	0.015 (0.260)	0.037 (0.046)	.066** (0.104)	−0.054 (0.073)	0.032 (0.330)	.149*** (0.000)	.271*** (0.000)	.320*** (0.000)	.242*** (0.000)	.186*** (0.000)	1			
14. Views of judges of competition	.028 (0.403)	−0.046 (0.166)	−0.029 (0.374)	0.023 (0.490)	−0.043 (0.197)	0.017 (0.615)	0.022 (0.499)	.158*** (0.000)	.182*** (0.000)	.180*** (0.000)	.237*** (0.000)	.217*** (0.000)	.364*** (0.000)	1		
15. Activities association	.160*** (0.000)	0.056 (0.090)	.080** (0.015)	.141*** (0.000)	−0.044 (0.180)	0.046 (0.018)	.303*** (0.168)	.237*** (0.000)	.320*** (0.000)	.363*** (0.000)	.205*** (0.000)	.348*** (0.000)	.313*** (0.000)	1		
16. Interdisciplinary project	.048 (0.144)	−0.035 (0.283)	−0.049 (0.135)	−0.033 (0.322)	−0.003 (0.925)	0.012 (0.708)	0.008 (0.802)	.157*** (0.000)	.159*** (0.000)	.141*** (0.000)	.133*** (0.000)	.123*** (0.000)	.135*** (0.000)	.135*** (0.000)	1	

\*  $p < 0.10$ \*\*  $p < 0.05$ \*\*\*  $p < 0.01$

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