

From entrepreneurial intentions to entrepreneurial behaviour: The role of institutional factors

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ABSTRACT

Although there is abundant literature on entrepreneurial intentions and entrepreneurial behavior, there is still a lacuna on those factors enabling the pass from intention to action. Motivated by this gap, this study assesses the extent to which the determinants of entrepreneurial intention also have an effect on subsequent entrepreneurial behavior, using an institutional approach as a theoretical framework. With a sample of 2,491 university students from Catalonia (Spanish) through the simultaneous equations, the main findings show that institutions such as opportunity identification, business skills, and entrepreneurs' status encourage students to think of entrepreneurship as a good career choice, which subsequently explains entrepreneurial actions. Theoretical, policy, and practical implications are discussed based on these findings.

INTRODUCTION

Entrepreneurship is considered to play a key role in economic growth, innovation, and employment (Urbano & Aparicio, 2016; Wennekers, van Stel, Thurik, & Reynolds, 2005). Such a role is conditioned by different external or environmental factors that encompass policies, regulations, and culture (Bjørnskov & Foss, 2016; Urbano, Aparicio, & Audretsch, 2019). Therefore, in the last three decades, some researchers have focused on studying the factors that might have an influence on the development

of entrepreneurial activity (Ireland, Hitt, & Simon, 2003). This implies that entrepreneurship is seen as a process and not as an event (Shane, 2012). From this viewpoint, a significant amount of research has addressed the concept of entrepreneurial intentions (Kautonen, van Gelderen, & Fink, 2015), which are seen as a necessary precursor to performing entrepreneurial behaviours (Liñán & Chen, 2009).

Previous research has shown that situational and personality factors do not predict entrepreneurial activity consistently (Krueger, Reilly, & Carsrud, 2000); hence, the entrepreneurial intention approach has been used. In this regard, since the early 1990s, the number of studies that have applied intention models to explain the decision to start a new business has increased significantly (Liñán & Fayolle, 2015). The underlying idea in these studies is that it is better to predict any planned behaviour by observing intentions towards that behaviour than to focus on attitudes, beliefs, or demographic measures (Krueger et al., 2000). Overall, intentions have been considered extensively to be the single best predictor of behaviour (Ajzen, 1991, 2001; Fishbein & Ajzen, 1975).

Despite this extensive literature, there are some relevant research gaps. First, very few articles have analysed the complete “antecedents–entrepreneurial intentions–entrepreneurial action” process empirically. Most researchers have studied this sequence partially (for an exception, see Kautonen et al., 2015). On the one hand, previous studies have examined the role of a wide variety of determinants in entrepreneurial intentions (Verheul et al., 2015). These studies have used different theoretical frameworks and models to explain entrepreneurial intentions, but no specific work has combined different models into a single one (Fayolle & Liñán, 2014). In this regard, Schlaegel and Koenig (2014, pp. 291) pointed out “there has been growing concern about the sometimes inconclusive empirical findings of the relationship between entrepreneurial intention and its determinants”.

Second, the study of the intention–behaviour link has emerged recently (Gielnik et al., 2014; Goethner, Obschonka, Silbereisen, & Cantner, 2012). The findings have agreed that intentions are a predictor of subsequent action; however, the extent to which intentions can explain a variation in behaviour is not clear (Kibler, Kautonen, & Fink, 2014; Van Gelderen, Kautonen, & Fink, 2015). For instance, while Ajzen et al. (2009) found an intention–behaviour correlation of 0.90 to 0.96, other authors have reported a

less intense relation: Armitage and Conner (2001) found a correlation of 0.47, and Kautonen et al. (2013, 2015) showed that the theory of planned behaviour (Ajzen, 1991) accounts for only 31–39% of the variation in start-up behaviour. Overall, the literature reviews focusing on the entrepreneurial intention area have agreed that most challenges lie in this specific intention–behaviour stream of research (Fayolle & Liñán, 2014; Liñán & Fayolle, 2015; Shook, Priem, & McGee, 2003).

Third, the moderating effect of some contextual variables on the relationship between entrepreneurial intentions and their antecedents has rarely been taken into account in previous studies. In fact, the most-cited theoretical models (Ajzen, 1991; Shapero & Sokol, 1982) do not consider this type of effect. This fact is particularly striking as entrepreneurship researchers have highlighted extensively that some environmental conditions moderate key aspects of the entrepreneurship process, such as the ability to identify business opportunities (Short, Ketchen, Combs, & Ireland, 2010) or the acquisition of knowledge (Knight & Cavusgil, 2004). In this regard, institutional theory has been used widely in entrepreneurship research to explore the role of environmental and contextual factors (Bruton, Ahlstrom, & Li, 2010; Urbano, 2006). In this theoretical framework, institutions represent the set of rules that articulate and define the interactions between individuals; therefore, they have an effect on several aspects, including entrepreneurship rates and business development (Urbano & Alvarez, 2014).

Taking these explanations into account, the main research question that this study aims to answer is the following: To what extent do the determinants of entrepreneurial intention also have an effect on subsequent entrepreneurial behaviour? The study applies a simultaneous equation model to data collected from university students in Catalonia (Spanish) in two different periods of time (2014 and 2016). The results support the simultaneous effect of a set of three different variables (opportunity identification capability, self-assessment of skills, and social prestige associated with entrepreneurial activities) on both entrepreneurial intentions and subsequent entrepreneurial behaviour. The results also (partially) support the moderating effect of the institutional context.

These findings contribute to the current literature by providing a broader and more complete perspective of the whole “antecedents–entrepreneurial intentions–

entrepreneurial behaviour” sequence. Most studies have been limited to analysing the effect of some determinants on intentions (Kibler et al., 2014), and very few articles have focused on studying the relationship between intention and behaviour (Kautonen et al., 2015). In addition, the research contributes to the understanding of this process by introducing the moderating role of the institutional environment, which has rarely been taken into account in these types of studies.

The chapter is structured as follows. In section 2, the main theoretical framework and hypotheses are presented. In section 3, the methodology of the study is detailed. Section 4 presents and discusses the results. Finally, in section 5, the main conclusions of the study are presented and some limitations and future research lines are suggested.

LITERATURE REVIEW AND HYPOTHESES

The literature has extensively agreed that measuring an individual’s intention towards a certain action is the best way to predict that this action will indeed occur (Carsrud & Branback, 2011). In this regard, Shapero and Sokol’s (1982) seminal work represents a starting point in the literature on the relationship between intentions and behaviour. This approach is known as the entrepreneurial event model (Krueger, 1993; Shapero, 1975; Shapero & Sokol, 1982). It explains that entrepreneurial intentions depend on three main factors: perceived desirability, propensity to act, and perceived feasibility. From this perspective, perceived desirability refers to the extent to which individuals consider the possibility of becoming an entrepreneur to be an attractive option. The propensity to act refers to the extent to which individuals are willing to act towards the exploration and exploitation of entrepreneurial opportunities (Shapero & Sokol, 1982). Finally, perceived feasibility refers to the extent to which individuals consider that they have the skills and capacities required to become an entrepreneur (Schlaegel & Koenig, 2014).

The potential value of the entrepreneurial event model has led to the development of other related models (Bird, 1988). In this regard, the most-cited psychological theory used to explain and forecast individuals’ actions is the theory of planned behaviour (Ajzen, 1988, 1991), which in turn is based on the theory of reasoned action (Fishbein & Ajzen, 1975). From this perspective, entrepreneurial intentions refer to a state of

mind that guides the behaviour of people towards the development and execution of new business ideas and concepts (Bird, 1988; Karimi, Biemans, Lans, Chizari, & Mulder, 2016). Therefore, the stronger the intention to perform a certain action, the more likely it is that this behaviour will actually take place (Ajzen, 1991). The theory of planned behaviour explains that intentions also depend on three different types of antecedents: attitude, subjective norm, and perceived behavioural control. Attitude refers to the degree to which the individual (i.e. the potential entrepreneur) has a favourable or unfavourable evaluation about performing the behaviour (i.e. becoming an entrepreneur). Subjective norm refers to the perceived social pressure, meaning the expectations of important referent groups, to perform a specific action (i.e. becoming an entrepreneur). Finally, perceived behavioural control refers to the perceived degree of easiness or difficulty of performing the behaviour (i.e. becoming an entrepreneur). In other words, it refers to the extent to which the individual considers that he or she has the capacity to perform the behaviour (Ajzen, 2002; Kautonen, Tornikoski, & Kibler, 2011). This concept is analogous to the concept of perceived self-efficacy developed by Bandura (1977).

Overall, the entrepreneurial event model and the theory of planned behaviour are considered to share certain assumptions and notions and to overlap partially (Krueger & Brazeal, 1994). They are the two approaches that are the most used to understand the link between intentions and subsequent behaviour. Based on them, this study presents a set of four different hypotheses.

Hypotheses Development

Entrepreneurial opportunities can be defined as situations in which new products, services, materials, and organizational methods can be launched onto the market to create greater value (Casson, 1982). Opportunities exist primarily because different agents have different beliefs about the relative value of resources when they are converted from input into output (Kirzner, 1979; Shane & Venkataraman, 2000). An entrepreneurial opportunity thus invariably involves the development of a new idea that others have overlooked or chosen not to pursue (Alvarez & Busenitz, 2001; Patel, 2019). From this perspective, Kirzner (1979) asserted that the mental representations and interpretations of entrepreneurs do indeed differ, because they are driven by

entrepreneurial alertness and a distinctive set of perceptual and cognitive processing skills that direct the opportunity identification process.

Identifying and selecting the right opportunities for new businesses are considered to be among the most important abilities of a successful entrepreneur (Stevenson, Roberts, & Grousbeck, 1985); thus, the discovery of entrepreneurial opportunities has appeared as a fundamental aspect of the literature on entrepreneurship in recent years (Ardichvili, Cardozo, & Ray, 2003; Asante & Affum-Osei, 2019; Gaglio & Katz, 2001; Shane & Venkataraman, 2000). The literature has agreed that the development and growth of entrepreneurial initiatives must be preceded not only by having the intention to perform certain behaviours but also by the identification of an opportunity. That is, it is believed that opportunities are a necessary first step and condition to develop any type of entrepreneurial activity. For instance, Short et al. (2009, p. 40) stated that “A potential entrepreneur can be immensely creative and hardworking, but without any opportunity to target with these characteristics, entrepreneurial activities cannot take place”. Hence, from this perspective, it is considered that, without opportunities, there would be no entrepreneurship at all (Short, Ketchen, Shook, & Ireland, 2009). For this reason, some researchers have claimed that the most important point in the entrepreneurship field is not to identify people who wish to be entrepreneurs but rather to seek the link between those people and valuable entrepreneurial opportunities (Shane & Venkataraman, 2000; Venkataraman, 1997). Researchers have extensively investigated why some individuals are able to identify and exploit opportunities and some are not (Cooper & Dunkelberg, 1987). In this regard, most of this literature has proposed that psychological variables, personality traits, and demographic factors have an effect on this capacity (De Carolis & Saparito, 2006). Similarly, other authors, such as DeTienne and Chandler (2007), have shown how creativity and innovation are positively related to the opportunity identification capacity. Based on these explanations, the following hypothesis is posed:

Hypothesis 1: Being able to identify business opportunities increases the likelihood of having an entrepreneurial intention, which in turn has a significant effect on entrepreneurial behaviour.

Being able to identify new business opportunities will depend not only on individuals' knowledge, experience, personal and professional contacts, or educational level but also

on their confidence in or self-perception of their own skills and abilities (Gonzalez-Alvarez & Solis-Rodriguez, 2011). In this regard, the concept of self-efficacy has been used in previous studies to explain individuals' "beliefs in their capabilities to mobilize the motivation, cognitive resources, and courses of action needed to exercise control over events in their lives" (Wood & Bandura, 1989, p. 364). Specifically, in the entrepreneurship field, the notion of "entrepreneurial self-efficacy" has been proposed (Bandura, 2006; Szerb & Voros, 2019) and refers to the self-evaluation that people make of the extent to which they possess the required skills to perform a certain task. In addition, it refers to whether they believe that they can rely on these abilities to succeed in their entrepreneurial endeavours (Bandura, 1989, 1997). In other words, the results of actions and outcome expectations are conditioned by how individuals assess their general or more particular task-related abilities (Fishbein & Ajzen, 2011).

Self-perception of skills has been shown to have a key influence on the entrepreneurial spirit, as it has a positive effect on people's entrepreneurial intentions (Sequeira, Mueller, & McGee, 2007; Zhao, Seibert, & Hills, 2005). Individuals will not have entrepreneurial intentions if they do not perceive that it is both possible and desirable to do so (Kundu & Rani, 2007). Moreover, it has been suggested that self-perception of skills could have an impact on subsequent behaviour (Rauch & Frese, 2007). In addition, it can have an effect on motivation, which is related to the effort that individuals exert in trying to achieve their goals (Wood & Bandura, 1989). This is particularly relevant in the entrepreneurship field, in which decisions are usually taken in an uncertain, changing, and complex environment that can involve financial and professional risks (Baron & Shane, 2007; Boudreaux, Nikolaev, & Klein, 2019). Similarly, previous research has shown that the fact that women have a lower perception of their own skills and abilities (regardless of their real skills) translates into fewer women becoming involved in entrepreneurial initiatives (Noguera, Alvarez, & Urbano, 2013; Wilson, Kickul, & Marlino, 2007). Finally, overconfidence and unrealistically optimistic expectations are reported to be a characteristic of entrepreneurs (Cooper et al., 1988; Szerb & Voros, 2019). Overall, the following hypothesis is posed:

Hypothesis 2: Self-perception of skills increases the likelihood of having entrepreneurial intentions, which in turn have a significant effect on entrepreneurial behaviour.

The institutional environment can be categorized into different forms (Urbano, Toledano, & Ribeiro-Soriano, 2011). North (1990) explained that institutions can be formal (i.e. legal regulations) or informal (i.e. cultural values, traditions, or attitudes). From the latter perspective, scholars have long pointed out the importance of socio-cultural factors in the decision to start up new businesses, arguing that entrepreneurship is embedded in a social context (Aldrich & Zimmer, 1986). In this regard, the influence of national culture on individual entrepreneurial behaviour has been well established (Hayton, George, & Zahra, 2002), as countries and societies are considered to have collective perceptions and images that lead them to admire entrepreneurial activities to a greater or lesser extent (Busenitz, Gomez, & Spencer, 2000). Culture affects collective and societal mechanisms through joint expectations and preferences. These mechanisms affect the way in which individuals perceive the economic and social probability and attractiveness of developing entrepreneurial activities (Autio, Pathak, & Wennberg, 2013). That is, cultural values define the extent to which certain activities are considered to be socially prestigious or not (Urbano, Audretsch, Aparicio, & Noguera, 2019).

The literature has shown that some factors underlying entrepreneurial behaviour are common across cultures (e.g., economic incentives can motivate action in all cultures). However, since culture reinforces certain personal characteristics and penalizes others, these studies have shown how entrepreneurship differs from culture to culture, as some values favour entrepreneurial behaviour more than others (Mueller & Thomas, 2001). Shane (1992) demonstrated (following Hofstede's approach) that the national cultural values of individualism and power distance explain the national differences in the rates of inventiveness. Similarly, Wilson et al. (2004) identified significant differences between American ethnic groups in their interest in entrepreneurship. These effects are articulated through a process of social legitimation (Fayolle, Liñán, & Moriano, 2014). Overall, an entrepreneurial culture fosters and supports the continuous search for entrepreneurial opportunities that can be exploited with sustainable competitive

advantages (McGrath, McMillan, Yang, & Tsai, 1992). Therefore, the following hypothesis is posed:

Hypothesis 3: Living in an environment in which entrepreneurial activity is perceived as a socially prestigious activity increases the likelihood of having entrepreneurial intentions, which in turn have a positive significant effect on entrepreneurial behaviour.

Although research has mostly shown cultural factors to have a direct impact on entrepreneurship, cultural variables in many cases have been theorized and modelled as moderating entrepreneurial outcomes (De Clercq, Danis, & Dakhli, 2010; De Clercq, Lim, & Oh, 2013; Hayton et al., 2002; Wu, Song, & Yang, 2020). Hence, researchers have accepted that social behaviour occurs in a specific geographical context that is closely related to the values and beliefs of its population, which affect individuals' processes of perception, interpretation, and behaviour (Garcia-Cabrera & Garcia-Soto, 2008). Scholars have argued that, to understand entrepreneurial variations, the social environment in which a firm is created needs to be considered and that “greater attention should be given to the interactions among cultural dimensions and the conception of culture that allows for greater complexity in relation to other characteristics of the environment” (Thornton, Ribeiro-Soriano, & Urbano, 2011, p. 109).

Cultural factors have been a subject of considerable interest in the discipline of entrepreneurship since Aldrich and Zimmer (1986) and Granovetter (1985) discussed the notion of “embeddedness” in economic activity. These authors suggested that entrepreneurship is embedded in a social context and evoked the idea that it is a societal phenomenon rather than a purely economic activity (Steyaert, 2007; Urbano et al., 2011). From this perspective, Kostova and Roth (2002, p. 217) asserted that the institutional environment reflects the “values, beliefs, norms and assumptions about human behavior held by the individuals in a given country”. Similarly, the entrepreneurship literature has emphasized that culture can reflect issues such as people's prior experience in starting a new business, knowledge about how to identify good business opportunities, perceived ability to assemble the necessary resources, or confidence in managing and growing a business (Busenitz et al., 2000; Casillas et al.,

2015; Riviezzo, Santos, Liñán, Napolitano, & Fusco, 2019). In this regard, Hayton et al. (2002, p. 33) stated that “Cultural values indicate the degree to which a society considers entrepreneurial behaviors, such as risk taking and independent thinking, to be desirable”. Similarly, Gomez-Haro et al. (2011) explained that one of the reasons for some countries being less entrepreneurial is that innovative activities are socially less prestigious and less appreciated than in other more entrepreneurial countries. In addition, the cultural burden faced by aspiring entrepreneurs is considered to be lower in that information relevant to entrepreneurship is widely distributed (Spencer & Gomez, 2004) and assistance with market research and other business development activities is easily available (Hawkins, 1993). Finally, the following hypothesis is posed:

Hypothesis 4a: Entrepreneurial prestige moderates the relationship between opportunity recognition and both entrepreneurial intentions and behaviour such that the relationship is stronger for higher values of entrepreneurial prestige.

Hypothesis 4b: Entrepreneurial prestige moderates the relationship between self-perception of skills and both entrepreneurial intentions and behaviour such that the relationship is stronger for higher values of entrepreneurial prestige.

METHODOLOGY

Data and Variables

The study uses a data set containing information from university undergraduate students at two different moments in time (2012–2013 and 2016). Specifically, the first wave of data collection started in September 2012 and continued during the 2012–2013 academic year until February 2013. In almost all cases, the questionnaire was completed in class under the supervision of a professor. Subsequently, an e-mail was sent to all the students taking the course, asking them to fill in the questionnaire in case they had not completed it in class. A total of 9 universities located in Catalonia (Spain) participated in the study, specifically the Universitat Autònoma de Barcelona, Universitat de Barcelona, Universitat Pompeu Fabra, Universitat Politècnica de Catalunya, Universitat de Lleida, Universitat de Girona, Universitat Rovira i Virgili, Universitat Oberta de

Catalunya, and Fundació Universitària del Bages. The students came from undergraduate programmes from different areas and schools: Business, Economics, Business & Law, Law, Labour Relations, Tourism, Hospitality Management, Medicine, Physiotherapy, Nursing, Early Child Education, and Computer Engineering. This approach allowed the study to cover a wide spectrum of universities within Catalonia as well as a wide variety of students. Therefore, this approach ensured that the sample was as representative as possible of the population under study. Overall, a total of 2491 valid observations were collected in the first wave of the study.

The second wave of the study started in April 2016. An e-mail was sent to all the first-wave participants in the study, asking them to fill in a follow-up questionnaire. A second e-mail was sent in May 2016 as a reminder to those individuals who had not completed the follow-up questionnaire. In addition, when the phone number of the first-wave participants was available, phone calls were made asking the participants to respond to the questionnaire over the phone. Overall, a total of 352 observations were collected in the second wave of the study.

Dependent Variables

The study has two different binary dependent variables, *Entrepreneurial Intention* and *Entrepreneurial Behaviour*. Entrepreneurial intention is measured by asking “Have you ever seriously considered the possibility of becoming a business owner?” In the case of behaviour, it was asked “Have you ever created a new company?” Several previous researchers have used dependent variables that are exactly the same as or very similar to these (see, among others, Torres & Augusto, 2019; Tsai, Chang, & Peng, 2016).

Independent Variables

This study uses three different independent variables: *Opportunity*, *Skills*, and *Status*. These measures are usually used in the entrepreneurship literature, for example in the Global Entrepreneurship Monitor (GEM) data set. Therefore, they have also been employed in many different studies in the past (see, among others, Autio, Pathak, & Wennberg, 2013; Stuetzer, Obschonka, Brixy, Sternberg, & Cantner, 2014).

Control Variables

In addition, other factors can influence entrepreneurial intentions and subsequent behaviour. For this reason, the study controls for demographic characteristics. These types of controls have been used extensively in the past. That is, entrepreneurs behave differently depending on their age (Urbano & Alvarez, 2014), on their income or wealth (Hornsby, Kuratko, Shepherd, & Bott, 2009), or on their gender, as men are more likely to start up new businesses than women (Adachi & Hisada, 2017). In addition, this research also controls for whether the participants had attended any course in the area of entrepreneurship in the past, as this type of experience tends to increase entrepreneurial intentions (Piperopoulos & Dimov, 2015). Table 1 provides a description of the variables used in the study.

Empirical Strategy and Estimation Methods

As this research is interested in the influence of institutional factors on entrepreneurial intentions, which may lead to entrepreneurial behaviour, a set of simultaneous equations is defined which includes institutions as explanatory variables of the focal elements, intentions in a direct way, and behaviour in an indirect manner. This follows similar approaches in entrepreneurship research (cf. Urbano, Turro, & Aparicio, 2019), particularly regarding entrepreneurial intentions (cf. Schmutzler, Andonova, & Diaz-Serrano, 2019). Based on the consensus about the importance of institutions for increasing the probability of an individual wishing to start a new venture (Liñán & Fayolle, 2015), the first equation explains the possible explanatory power of institutional factors in the intentional decision. Thus, the reduced version of equation 1 is as follows:

$$P(EI_i = 1) = f(IF_i, CV_i) \quad (1)$$

where EI_i is the dummy variable that represents the entrepreneurial intentions of individual i . The element IF_i denotes a matrix with institutional factors such as opportunity, skills, and status. Finally, CV_i is the matrix for controls, which contains gender, income, age, and entrepreneurship course. As entrepreneurship is considered to be a development process, which is affected by different (contextual) variables (Gnyawali & Fogel, 1994) and the possible sequence may run from the identification of the idea to its evaluation and exploitation (Shane & Venkataram, 2000), different

approaches capturing entrepreneurship suggest that intentions are motivational factors to start a new venture (Bosma, 2013; Reynolds, 2007). That is why a second equation is defined which assesses the influence of entrepreneurial intentions on entrepreneurial behaviour. The reduced equation is as follows:

$$P(EB_i = 1) = g(\widehat{EI}_i, CV_i) \quad (2)$$

in which this function g comprises the estimated value of entrepreneurial intentions (\widehat{EI}_i) and the same control variables (CV_i) as in equation 1. An entrepreneurial behaviour equation is estimated, explaining actions through intentions, while controlling for the same set of relevant demographic characteristics that are directly related to intentions.

Due to the binary nature of the dependent variables, a combination of logistic regressions and simultaneous equation modelling is used. A binomial logit regression estimates the probability of an event happening by assuming a logistic distribution of the sample (Hoetker, 2007; Wiersema & Bowen, 2009). However, at this point, logit models do not bridge the possible connection between intentions and behaviour; hence, a complementary estimation method is required. In this case, the conditional mixed process (CMP) operates within simultaneous equation systems. It has two advantages (Roodman, 2011): first, a recursive multi-stage estimation within a simultaneous equation system; and, second, a complete observation of the right-hand-side endogenous variables.

It has been suggested that the CMP estimates multi-equation, mixed-process models, and the potential hierarchy random effect (Roodman, 2015). It entails different systems of equations possibly having different dependent variables, so, alternative to linear and continuous (such as OLS) techniques, this technique enables the simultaneous estimation of non-linear models, such as tobit, probit, logit, and ordered probit. The conditional characteristic implies that the same variable could play different roles within the system. That is, a dependent variable in equation 1 could be an independent variable in equation 2. This interplay should have a recursive structure if dependency within a censor is an observed variable, so it needs to be separated into different stages. Based on

these characteristics and on the empirical structure, the research relies on this method to conduct the analysis.

Table 1. Description of the variables

Variables description		
Dependent variables	Entrepreneurial Intention	Have you ever seriously considered the possibility of becoming a business owner? (Yes/No)
	Entrepreneurial Behaviour	Have you ever created a new company? (Yes/No)
Independent variables	Opportunity	In the next six months, there will be good opportunities for starting a business in the area where you live (Yes/No)
	Skills	You have the knowledge, skill, and experience required to start a new business (Yes/No)
	Status	In my country, those successful at starting a new business have a high level of status and respect (Yes/No)
Controls	Gender	Respondents were asked to specify their gender
	Age	Respondents were asked to specify their date of birth
	Income	Approximately, which is the average monthly income at your house? (6 categories)
	Course	Have you ever attended any business creation course? (Yes/No)

RESULTS

Table 2 presents the descriptive statistics and the correlation matrix of the main dependent and independent variables. As can be observed, students in the sample manifest a high level of intentions, as 85.6% would like to start a new company in the near future. This is consistent with the analysis of overoptimism (cf. Brieger, Bärö, Criaco, & Terjesen, 2020; Cieřlik, Kaciak, & van Stel, 2018), in which young people see more favourable conditions for seizing available opportunities in the market. Contrary to this result, entrepreneurial behaviour among students seems to be very low. However, this is consistent with Urbano et al. (2017), who showed that the probability of becoming an entrepreneur is low for Catalan students across different programmes. These authors, in addition, identified certain institutions related to cognitive aspects as explaining such a probability. Comparing this idea with the correlation matrix in Table 2, it was noticed that opportunities, skills, and status are highly correlated with entrepreneurial intentions and behaviour. In this regard, the correlation matrix shows relationships that meet the expectations.

Table 2. Correlation matrix

	Mean	Std. Dev.	1	2	3	4	5	6	7	8	9
1. Entrepreneurial intention	0.856	0.259	1								
2. Entrepreneurial behaviour	0.120	0.334	0.094***	1							
3. Opportunity	0.369	0.484	0.137***	0.097***	1						
4. Skills	0.417	0.495	0.135***	0.239***	0.112***	1					
5. Status	0.576	0.494	0.106***	-0.005	0.042**	0.001	1				
6. Gender	0.464	0.498	0.116***	0.083***	0.077***	0.111***	-0.048**	1			
7. Age	29.15	8.206	0.065***	0.276***	-0.001	0.320***	-0.085***	0.108***	1		
8. Income	2.785	1.112	0.048**	0.027	0.073***	-0.006	0.081***	0.101***	0.015	1	
9. Course	0.378	0.489	0.095***	0.088***	0.096***	0.225***	-0.009	0.082***	0.099***	0.000	1

*** Significant at $p < 0.01$. Note: Std. Dev. is the standard deviation.

Table 3 displays the estimation results for entrepreneurial intentions and behaviour. As this study seeks for further comprehension of the process from intentions to behaviour (Krueger et al., 2000) under the influence of institutions, the research defines an empirical strategy that tests separately the association between institutions and intentions and that between institutions and behaviour. Afterwards, it is explored whether the estimated variable in equation 1 affects behaviour in equation 2. Thus, models 1 and 2 in the study regress entrepreneurial intentions on the institutional factors and control variables considering the interaction between opportunities and status as well as between skills and status, respectively. These models are estimated using a logistic regression approach. For model 3, the influence of entrepreneurial intentions on entrepreneurial behaviour plus controls is considered. Finally, models 4 and 5 use simultaneous equation modelling (Keshk, Pollins, & Reuveny, 2004), which incorporates entrepreneurial intentions (influenced by institutions) as antecedents of behaviour. The specification seems to be strong in terms of the explanatory variables, which is observed through the probability of X^2 equal to zero.

Table 3. Estimation results of simultaneous equation model

	(1)		(2)		(3)	(4)		(5)	
	Entrepreneurial intention		Entrepreneurial intention			Entrepreneurial intention		Entrepreneurial intention	
	Coef. (Std. error)	dy/dx	Coef. (Std. error)	dy/dx		Coef. (Std. error)	dy/dx	Coef. (Std. error)	dy/dx
Opportunity	0.652*** (0.161)	0.652***	0.502*** (0.105)	0.502***		0.427*** (0.093)	0.427***	0.327*** (0.061)	0.327***
Skills	0.932*** (0.112)	0.932***	0.916*** (0.159)	0.916***		0.564*** (0.065)	0.564***	0.582*** (0.092)	0.582***
Status	0.411*** (0.116)	0.411***	0.325** (0.115)	0.325**		0.243*** (0.069)	0.243***	0.197** (0.070)	0.197**
Status x Opportunity	-0.258 (0.211)	-0.259				-0.170 (0.121)	-0.17		
Status x Skills			0.030 (0.212)	0.03				-0.027 (0.122)	-0.027
Gender	0.481*** (0.098)	0.482***	0.481*** (0.098)	0.481***		0.291*** (0.059)	0.291***	0.292*** (0.059)	0.292***
Age	-0.005 (0.007)	-0.005	-0.005 (0.007)	-0.005		-0.004 (0.004)	-0.004	-0.004 (0.004)	-0.004
Income	-0.019 (0.044)	-0.019	-0.020 (0.044)	-0.02		-0.012 (0.027)	-0.012	-0.012 (0.027)	-0.004
Course	0.603*** (0.107)	0.604***	0.606*** (0.106)	0.606***		0.353*** (0.063)	0.353***	0.356*** (0.063)	0.356***

		Entrepreneurial behaviour		Entrepreneurial behaviour	Entrepreneurial behaviour
		Coef. (Std. error)	dy/dx	Coef. (Std. error)	Coef. (Std. error)
Entrepreneurial intention		0.335+ (0.235)	0.008+	1.621*** (0.307)	1.596*** (0.308)
Gender		0.231 (0.181)	0.005	-0.020 (0.153)	-0.009 (0.154)
Age		-0.064* (0.025)	-0.001*	-0.052** (0.020)	-0.053** (0.020)
Income		0.010 (0.076)	0.000	0.019 (0.058)	0.017 (0.059)
Course		0.475** (0.182)	0.011**	0.104 (0.170)	0.118 (0.170)
Log likelihood	-1277.17	-1277.92	-103.53	-1375.13	-1376.09
AIC	2574.35	2575.84	219.05	2782.26	2784.18
BIC	2631.23	2632.71	253.18	2873.27	2875.19
Number of observations	2180	2180	2182	2180	2180
Prob > chi 2	0.000	0.000	0.000	0.000	0.000

+ p = 0.1, *p<0.05, **p<0.01, ***p<0.001

Note: Models 1, 2 and 3 are estimated using a logistic regression, whilst models 4 and 5 are the simultaneous equation models

With regard to the hypothesis testing, in Hypothesis 1 it is posited that being able to identify business opportunities increases the likelihood of having an entrepreneurial intention, which in turn has a significant effect on entrepreneurial behaviour. Based on the results across the models, opportunity recognition is a significant variable when defining a preference for entrepreneurship. These findings are consistent with the extant literature (Ardichvili, Cardozo, & Ray, 2003; Asante & Affum-Osei, 2019), which has suggested that people equipped with the ability to identify opportunities are more likely to desire entrepreneurial activity as a good career choice. In this case, the variable opportunity oscillates between 0.652 ($p < 0.01$ in Model 1), 0.502 ($p < 0.01$ in Model 2), 0.420 ($p < 0.01$ in Model 4), and 0.320 ($p < 0.01$ in Model 5). Hence, opportunity recognition increases the probability of having entrepreneurial intentions among Catalan university students.

Hypothesis 2 suggested that the self-perception of skills increases the likelihood of having entrepreneurial intentions, which in turn have a significant effect on entrepreneurial behaviour. Similar to the previous hypothesis, the results enable us not to reject this statement. In line with other studies (cf. Sequeira, Mueller, & McGee, 2007; Zhao, Seibert, & Hills, 2005), evidence is provided on the importance of entrepreneurial skills for increasing intentions among students. The estimated models show that self-perceived skills influence the probability of intentions by 0.932% ($p < 0.01$ in Model 1), 0.916% ($p < 0.01$ in Model 2), 0.511% ($p < 0.01$ in Model 4), and 0.553% ($p < 0.01$ in Model 5). Based on these results, it is shown that entrepreneurial skills directly affect entrepreneurial intentions as well as entrepreneurial behaviour in an indirect way.

In addition to opportunity recognition and skills, this research assumes that people's perception about entrepreneurship is also important for their intentions and behaviour. Hence, Hypothesis 3 suggested that living in an environment in which entrepreneurial activity is perceived as a socially prestigious activity increases the likelihood of having entrepreneurial intentions, which in turn have a positive significant effect on entrepreneurial behaviour. Similar to Fayolle, Liñán, and Moriano (2014), this research finds that entrepreneurs' status has strong explanatory power for entrepreneurial intentions. Particularly for this sample of Catalan university students, there is a positive

association between these two variables, in which the probability of having intentions increases by 0.411% ($p < 0.01$ in Model 1), 0.325% ($p < 0.01$ in Model 2), 0.228% ($p < 0.01$ in Model 4), and 0.196% ($p < 0.01$ in Model 5) when students consider that there is a well-positioned perception of entrepreneurship as a desirable career. Thereby, the hypothesis cannot be rejected.

As status is an important measure that may capture people's perception of entrepreneurship, this can act as a proxy for a socially support culture (Stephan & Uhlaner, 2010). In this regard, two additional hypotheses were proposed on the possible reinforcement effect of status on the influence of opportunity recognition and entrepreneurial skills on intentions (directly) and behaviour (indirectly). Hypothesis 4a posited that entrepreneurial prestige moderates the relationship between opportunity recognition and both entrepreneurial intentions and behaviour, such that the relationship is stronger for higher values of entrepreneurial prestige. In parallel, Hypothesis 4b was devoted to understanding whether entrepreneurial prestige moderates the relationship between self-perception of skills and both entrepreneurial intentions and behaviour, such that the relationship is stronger for higher values of entrepreneurial prestige. The results do not support such hypotheses, since non-significant associations are found. Perhaps, as Urbano et al. (2017) discussed, university students in Catalonia have lived in a strong environment characterized by high levels of entrepreneurial activity, so the perception of entrepreneurship as a good option in the labour market, though it has a positive effect on intentions, might result as neutral when influencing other factors that are related to entrepreneurship (both intentions and behaviour). Instead, there is evidence on the importance of appropriate environments that act directly on students' preferences about entrepreneurship. In this regard, Grimaldi and Fernandez (2017) and Urbano et al. (2017) showed that the role of universities in entrepreneurial intentions and innovation outcomes is crucial, as universities provide students with the necessary tools to interpret and behave in the entrepreneurial environment of Catalonia. Apart from the Silicon Valley as a region characterized by a solid entrepreneurial environment, Pahnke and Welter (2017) discussed the Mittelstand as a vibrant region where many entrepreneurial activities take place. Regions like these may be characterized by a population with intentions to become entrepreneurs at some point, so the effect on other explanatory factors of entrepreneurship might be marginal.

DISCUSSION

The extant literature about entrepreneurial intentions has grown rapidly from the initial discoveries (Krueger, 1993; Shapero & Sokol, 1982). Liñán and Fayolle (2015) showed how different elements have been tested as important determinants to increase the preference for entrepreneurial activity in the near future. Liñán and Fayolle's (2015) research suggested that personal factors, such as self-perception of desirability, feasibility, and propensity to act, have been explored widely in entrepreneurship research. In this regard, there is a call for further explorations of other possible factors that may enhance the understanding about why people manifest a preference for entrepreneurship.

Contextual factors come into the analysis of intentions due to their importance to characterize societies' perception of new entrepreneurial activities (Liñán & Chen, 2009). Krueger and Brazeal (1994) suggested that societies can have an entrepreneurial characteristic (or potential) when they create an appropriate environment that motivates people to become entrepreneurs at some point. Accordingly, this creates a sort of loop in which potential entrepreneurs lead to entrepreneurial potential and vice versa. Advances in this line of thought have created initial ideas on the importance of certain institutions related to cognitive dimensions (Aparicio, Urbano, & Stenholm, 2019).

The results could serve to keep building an exhaustive discussion on possible institutional factors that affect intentions and behaviour. For example, if a country or region is characterized by having plenty of opportunities and people who identify those opportunities as potential new ventures, then that country or region is expected to grow more than other places (Acs et al., 2009). It is shown that opportunity identification is an element that helps people to think of entrepreneurship as looking for labour market alternatives. As such, Catalonia is a region that matches the knowledge theory of entrepreneurship (Acs et al., 2009) perfectly, as it is characterized by a solid and complex industry that comprises different sectors (food, clothing, cars, financial services, etc.). As Grimaldi and Fernandez (2017) and Urbano et al. (2017) showed,

Catalan universities have played a key role in the development of capacities to identify those existing opportunities better. In this regard, different activities related to fairs, seminars, conferences, and workshops may enhance the opportunity recognition of people's and industries' needs. For instance, 22@Barcelona is a governmental initiative that seeks to transform a particular space in the city to attract entrepreneurs to collaborate with universities to offer suitable solutions to meet people's demand.

Key alliances with universities create potential entrepreneurs equipped with particular knowledge and skills to live and follow an entrepreneurial process. Within the knowledge spillover theory framework, Audretsch (2014) suggested that, although opportunities might exist in a particular economy, there may a gap related to the necessary knowledge to turn those opportunities into feasible and profitable projects. In this regard, a perfect alignment between courses' curricula, universities' activities and programmes, and entrepreneurial dynamics should exist. The results show that business skills are an important element that students have when manifesting a preference for entrepreneurship as a good career choice. These findings thereby serve to exemplify the relevance of knowledge to closing a possible gap between existing opportunities and potential entrepreneurs. In addition to this, the results suggest that, if students do not have intentions to undertake entrepreneurial projects, then they have important knowledge to perform and lead other (equally complex) tasks and projects within the companies for which they are working (Aparicio, Urbano, & Stenholm, 2019).

In general, regions like Catalonia may show an entrepreneurial mindset at different levels (Grimaldi & Fernandez, 2017). Precisely, this characteristic is found when students are able to identify good opportunities in the market and when universities provide enough tools for students to become entrepreneurs. This entrepreneurial movement is leveraged from the society's perception of entrepreneurship. Stephan and Uhlaner (2010) showed how societies support risky activities, such as entrepreneurship. These authors referred to particular mechanisms, for instance media coverage and entrepreneurial status, that encourage (afraid) people to take risks and become entrepreneurs. The findings also support this idea, as entrepreneurs in Catalonia are considered to be important and transformational members of the society. On the one hand, this can create role models from whom university students can learn (Nowiński &

Haddoud, 2019). On the other hand, this creates a stable environment in which people expect entrepreneurship be a suitable career for their futures as the industrial environment is solid (Stephan & Uhlaner, 2010).

Based on the analysis of these three antecedents of entrepreneurial intentions (i.e. opportunity recognition, entrepreneurial skills, and entrepreneurs' status), it could also be said that entrepreneurial behaviour emerges in places where there are good conditions for entrepreneurial intentions (Krueger & Brazeal, 1994; Schillo, Persaud, & Jin, 2016). Particularly, in this case, it is shown that Catalonia offers an appropriate environment for students to move from intentions to practice. Curiously, a major Catalan town's logo contains the phrase *facta non verba* (i.e. facts not words), which might represent this philosophy of moving from ideas and intentions to tangible outcomes and activities.

The current extant literature has focused on the analysis of entrepreneurial intentions (Liñán & Fayolle, 2015), but a few works have tried to explore further the bridge between intentions and behaviour (Gielnik et al., 2014; Goethner et al., 2012). This chapter is subscribed to these attempts to explore further the intention–behaviour link. Gielnik et al. (2014) and Goethner et al. (2012) explained the importance of intentions for entrepreneurial actions based on personal characteristics. The findings could contribute to theory by showing that institutions are also important for early stages of entrepreneurship. Liñán and Fayolle (2015) defined a framework for entrepreneurial intentions in which the context matters. The results extend this view by showing that institutional factors may explain the decision of potential entrepreneurs to create new ventures. In this regard, institutions constitute an environment in which people can freely decide whether entrepreneurship is a good career alternative. If so, new entrepreneurs could enhance the already-solid context by bringing up new ideas based on their capacity to recognize opportunities and their abilities and skills to move entrepreneurial projects forwards accurately. If not, then the institutional environment helps them to perform tasks in an entrepreneurial way (Aparicio et al., 2019). Another theoretical contribution stemming from the results deals with the idea of dynamism and the role of time (Lévesque & Stephan, 2019). The sample of students was configured by following them in two different periods of time, so it implies that the bridge between

intentions and behaviour takes time. However, institutions are stable across the two waves, so institutional stability turns out to be important for students to maintain their preferences and progress to real actions.

Based on this theoretical discussion, the Catalan Government should keep encouraging entrepreneurial activity at all levels. This implies that not only technological parks (e.g. at universities) and districts (e.g. 22@Barcelona) but also educational programmes should be implemented for young students in high schools (García-Rodríguez, Gutiérrez-Taño, & Ruiz-Rosa, 2019) and universities (Urbano et al., 2017). Seminars, fairs, and workshops in educational organizations can be complemented with programmes organized by banks or other companies in the financial sector. In this respect, Coad et al. (2016) showed that banks can play an important role not only in providing loans but also in teaching people (particularly entrepreneurs) how to manage financial capital.

Entrepreneurs can also take advantage of this results. For example, this research may serve to identify Catalonia as a good region in which to invest in entrepreneurial projects. The analysis shows that entrepreneurship is a desirable career choice, which encourages other (new and established) companies to bring new knowledge that can later be commercialized by emerging entrepreneurs. Practitioners can also find in Catalonia a good place to live with their family. As the university students in the sample show that universities support entrepreneurial activity, this could mean that there is a strong movement from the educational sector to create common knowledge about entrepreneurship. For those who already live in Catalonia, they can use the findings to make decisions in terms of the next generations of entrepreneurs as either suppliers or workers. Incoming graduate students tend to be equipped with the necessary knowledge, skills, and tools to advance entrepreneurial projects or behave as entrepreneurs within companies. Either way, this would benefit existing companies as new (tangible and intangible) solutions accompany new entrepreneurs and workers.

CONCLUSION

The main objective of this chapter was to explore the extent to which the determinants of entrepreneurial intentions also have an effect on subsequent entrepreneurial behaviour. This study follows Krueger et al. (2000) as the basis for the analysis of institutional factors and entrepreneurial intentions and behaviour. Based on this perspective, the results expanded the discussion on traditional elements explaining the desirability to follow an entrepreneurial career to the institutional landscape (North, 1990, 2005). The observation through the institutional lens enabled us to determine whether certain institutional factors, such as opportunity recognition, entrepreneurial skills, and the status of entrepreneurship, play a key role in the development of entrepreneurship (i.e. from intentions to behaviour).

Similar to the extant literature (cf. Schillo et al., 2016), this research found that, for example, the capacity to recognize opportunities is crucial for entrepreneurial intentions. This pattern followed the previous suggestions of other theories in entrepreneurship research (cf. Acs et al., 2009). In this case, university students in Catalonia can easily identify opportunities, observing that entrepreneurship is a mechanism to turn those opportunities into real solutions for the society. This finding is complemented by the need to have appropriate programmes that help students to operationalize those identified opportunities. The results showed that skills increase the probability of a student becoming a potential entrepreneur. This implies that the existing curricula in Catalan universities are preparing everyone to face social challenges at the local, national, or international level. However, these institutional factors might not be strong enough in cultures in which entrepreneurship does not have a good reputation. In Catalonia, as observed in the results, there is a good perception of entrepreneurial means, so the Catalan society creates a sort of cultural support for potential entrepreneurs.

In addition to the cultural and institutional factors that are conducive to entrepreneurial intentions, it is observed that there is a bridge between potential entrepreneurs and actual entrepreneurs. This presents Catalonia as a region that moves from words to facts, from ideas to applicable projects. In this case, this research contributes to the literature by extending the idea that institutions matter not only for intentions (Liñán & Fayolle, 2015) but also for behaviour. Similar to other studies (cf. Aparicio, Urbano, &

Audretsch, 2016; Bjørnskov & Foss, 2016), the findings also expand the idea that institutions affect not only entrepreneurship to reach higher economic growth but also intentions, which are needed to understand entrepreneurial decisions. Governments at the local and regional levels should keep this dynamism not only in the city of Barcelona but also in other regions to create entrepreneurial potential across Catalonia. Thus, people coming from abroad might find a good place for entrepreneurs in Catalonia, and those who already live in this autonomous community can take advantage of the next generations to increase the entrepreneurial orientations and strategies within firms. This will serve to keep improving the context, which is characterized by an entrepreneurial mindset.

Although these analyses and implications can be obtained and discussed thanks to the results, this research has certain limitations. For example, the analysis focused only on university students. Somehow, this can bias the perception of opportunity recognition, skills, and entrepreneurship status. However, other studies in Catalonia and Spain have shown that samples different from students show similar patterns (cf. Noguera et al., 2013). Additionally, students from other countries show similar behaviours in terms of the main variables of interest (cf. Liñán, Nabi, & Krueger, 2013). Another limitation comes from the static treatment. Although it is observed that the intentions–behaviour link emerges over a certain period of time, other techniques that capture dynamism would help us to understand better the speed of change, as time matters to consolidate any entrepreneurial activity (Lévesque & Stephan, 2019). Based on these limitations, future research could address and overcome important challenges when exploring intentions and behaviour.

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