Routledge
Taylor & Francis Group

Economic Research-Ekonomska Istraživanja

ISSN: (Print) (Online) Journal homepage: https://www.tandfonline.com/loi/rero20

Entrepreneurial education and opportunity entrepreneurship: the mediation of self-efficacy belief

José Fernando López-Muñoz, Ignacio Mira-Solves, Josefina Novejarque-Civera & Mabel Pisá-Bó

To cite this article: José Fernando López-Muñoz, Ignacio Mira-Solves, Josefina Novejarque-Civera & Mabel Pisá-Bó (2023): Entrepreneurial education and opportunity entrepreneurship: the mediation of self-efficacy belief, Economic Research-Ekonomska Istraživanja, DOI: 10.1080/1331677X.2022.2159472

To link to this article: https://doi.org/10.1080/1331677X.2022.2159472

Published online: 04 Jan 2023.

ECONOMIC RESEARCH-EKONOMSKA ISTRAŽIVANJA
https://doi.org/10.1080/1331677X.2022.2159472

Entrepreneurial education and opportunity entrepreneurship: the mediation of self-efficacy belief

José Fernando López-Muñoz[a], Ignacio Mira-Solves[b], Josefina Novejarque-Civera[a] and Mabel Pisá-Bó[a]

[a]ESIC Business & Marketing School, Valencia, Spain; [b]Miguel Hernández University, Elche, Spain

ABSTRACT

This paper studies the mediating role of self-efficacy belief in explaining the effect of entrepreneurial education on opportunity-driven entrepreneurship. The influence of education on entrepreneurship is a top concern of both researchers and policymakers, who often struggle to understand how this influence occurs. Looking through the theoretical lens of the theory of planned behaviour (TPB), this study contributes to a better understanding of the nomological network of opportunity-driven entrepreneurship. Data from the 2016 Global Entrepreneurship Monitor (GEM) survey yielding a sample of 1,008 entrepreneurs from various Spanish regions with diverse levels of development were used. The results of this study show that self-efficacy belief represents the generative mechanism by which entrepreneurial education influences opportunity-driven entrepreneurship. Furthermore, the results provide evidence of the importance of supporting entrepreneurship education. Policymakers should be focused on reinforcing those skills and competencies that increase self-efficacy belief, enable the individual capability for action and provide a better understanding of business opportunities in the contemporary environment.

ARTICLE HISTORY
Received 13 April 2022
Accepted 12 December 2022

KEYWORDS
entrepreneurship education; GEM; opportunity-driven entrepreneurship; mediation; self-efficacy belief

JEL CODES
L26; M53; O38

1. Introduction

According to the Sustainable Development Goals (United Nations General Assembly, 2015), the quality of education is one of the most critical challenges for any country. Data from the Global Entrepreneurship Monitor (GEM) consortium[1] consider entrepreneurship education an issue of worldwide economic and social significance with major policy implications for every nation (Bosma et al., 2020). The quality and diversity of entrepreneurial activities are positively associated with the skills, technical knowledge, and experience of entrepreneurs. The growth and development in the curricula of programs devoted to entrepreneurship and new venture creation have been remarkable (Kuratko, 2005). However, education is universally regarded as the least

CONTACT José Fernando López-Muñoz jfernando.lopez@esic.edu

well-developed element of the framework that supports entrepreneurship (Bosma et al., 2020). This is certainly the case in Spain, as conclusively reflected in the GEM's National Expert Survey from 2004 to 2019.

Previous studies on the effects of entrepreneurship education have produced contradictory results. For example, some have shown that entrepreneurship education has significant positive effects on students' self-assessed entrepreneurial skills (Von Graevenitz et al., 2010), while other studies have shown that such an effect is insignificant and even significantly negative on their intention to become entrepreneurs (Oosterbeek et al., 2010). It is widely acknowledged that entrepreneurship education has had an impact on student propensity and intentionality (Pittaway & Cope, 2007). What is unclear is the extent to which such education enables students to become more effective entrepreneurs. Therefore, this paper fills this gap by examining the relationship between entrepreneurship education and entrepreneurship – specifically opportunity-driven entrepreneurship – and the mediation of entrepreneurs' self-assessed entrepreneurial skills. To that end, this study is grounded in the Theory of Planned Behaviour (TPB) (Ajzen et al., 1980; Fishbein & Ajzen, 1975) and uses data from the GEM project.

The TPB has been used to predict entrepreneurial behaviour (Jeon, 2018; Kautonen et al., 2013; Nishimura & Tristán, 2011). However, calls have been made to investigate the link between perceived behavioural control and entrepreneurial behaviour while avoiding student samples (Lortie & Castogiovanni, 2015).

The GEM can be used as a basis for reliable international comparisons of the role of entrepreneurship in national economic growth (Reynolds et al., 2005). National teams taking part in GEM commit to undertaking two national yearly surveys: the Adult Population Survey (APS) and the National Expert Survey (NES). The APS asks a nationally representative sample of working-age adults about their entrepreneurial activities, attitudes, motivations, and ambitions. The GEM approach then looks at individuals by assessing their attitudes and perceptions towards entrepreneurship and self-reported involvement in starting and/or owning and managing a business. Thus, the GEM APS provides detailed information about entrepreneurial activity in each economy. However, any decision to start and run a new venture will be made in a specific context and encompass a wide range of local and national conditions that may facilitate or hinder that new venture.

This paper focuses on three main objectives: (i) to measure the direct and indirect effects of entrepreneurship education on opportunity-driven entrepreneurship; (ii) to assess the significance of important mediating factors such as self-efficacy belief; and (iii) to suggest policies that may enhance entrepreneurial activity at the country level. Therefore, this paper extends the existing literature by integrating individual and environmental conditions that influence entrepreneurial behaviour. To the best of our knowledge, no further studies exist on the intervening mediation variables on the link between entrepreneurship education and entrepreneurial behaviour.

Our study shows that the TPB explains opportunity-driven entrepreneurship. Moreover, it shows that self-efficacy belief is a mediator between entrepreneurial education and opportunity-driven entrepreneurship. Although the authors held that entrepreneurial education was related to entrepreneurship, self-efficacy belief represents the

generative mechanism by which entrepreneurial education influences opportunity-driven entrepreneurship. That is, entrepreneurial education leads to greater self-efficacy belief, which then leads to greater opportunity-driven entrepreneurship.

The paper is structured as follows. The next section presents the conceptual framework and outlines the specific research questions. The following section describes the methodology for data collection, data analyses and results. The paper concludes with a discussion of the results and their implications for entrepreneurship research, practice, and public policy.

2. Conceptual framework

2.1. The theory of planned behaviour in entrepreneurship research

Entrepreneurial intention may be defined as a state of mind that directs the attention and actions of an individual towards situations of self-employment rather than employed situations (Fayolle & Gailly, 2015). Then, it refers to the intention of an individual to start a new business (Krueger et al., 2000). Studies that attempt to predict and understand human behaviour in entrepreneurial intent can use several theories: the Theory of Reasoned Action (TRA) (Ajzen et al., 1980), Social Cognitive Theory (Bandura, 1989), and the TPB (Ajzen, 1985, 1991), among others. However, the TPB is a widely used model among researchers from various fields of social sciences and in studies related to entrepreneurship and the formation of entrepreneurial intention[2] (Tornikoski & Maalaoui, 2019). The formation of entrepreneurial intention – otherwise known as the entrepreneurial event model or Krueger-Shapero model – was one of the first models to predict entrepreneurial intent (Schlaegel & Koenig, 2014).

TPB has been the most popular theory in entrepreneurship studies since it can explain the formation of entrepreneurial intention through three components: attitude towards behaviour, subjective norms, and perceived behavioural control. However, Bandura's theory is fundamentally based on the concept of self-efficacy (Zabaleta, 2005), a concept included in the TPB through the perceived behavioural control component. A summary table of the concepts appearing in this section is presented in an annex.

Regarding TRA, Ajzen considers that the effect of behaviour on intention is carried out in conditions of perfect perceived and real behavioural control, and this fact is not usually perceived by people in the case of entrepreneurship (Tornikoski & Maalaoui, 2019). Therefore, the TPB can be considered an extension of the TRA (Nishimura & Tristán, 2011).

The TPB explains the formation of entrepreneurial intention via three antecedents: attitudes, subjective norms, and perceived behavioural control (Ajzen, 1991). Attitude towards behaviour refers to the degree to which an individual has a favourable or unfavourable evaluation or appraisal of a behaviour – i.e., towards entrepreneurship in our case. Subjective norms refer to the perceived social pressure to perform or not perform a specific behaviour and thus measure pressure placed on the individual by social contacts, family, friends, and other significant relations to start their own business. This is based on beliefs concerning whether important referent individuals or

groups approve or disapprove of an individual starting to take steps to create a new business and to what extent this approval or disapproval matters to the individual (Ajzen, 1991). Finally, perceived behavioural control refers to the perceived ease or difficulty of performing a given behaviour and assesses the self-perception of the capacities, means and opportunities of individuals to engage in entrepreneurial behaviour (Ajzen, 1991).

Mothibi and Malebana (2019) show, in their literature review, that TPB is adequate as a model to predict entrepreneurial intention, but the effects of attitudes, subjective norms, and perceived behavioural control have different effects on entrepreneurial intention.

Schlaegel and Koenig (2014) demonstrated, in their specific meta-analysis on entrepreneurship, that this theory can be extended to nascent entrepreneurial behaviour. This fact is reflected by the increase in studies on entrepreneurship that use the TPB and demonstrated by the review of the relevant literature carried out by Lortie and Castogiovanni (2015).

Considering the above, the TPB is adequate to explain and predict entrepreneurial intention, since it has been deeply analysed as a construct capable of predicting entrepreneurship (Hmieleski & Corbett, 2006; Lüthje & Franke, 2003). Furthermore, entrepreneurship is in all respects a type of planned behaviour (Krueger et al., 2000). Furthermore, recent studies have shown the link between intention and entrepreneurial behaviour (see, e.g., Gieure et al., 2020; Alam et al., 2019; Yaseen et al., 2018). As Lortie and Castogiovanni (2015, p. 936) indicate 'Entrepreneurship is an intentional process in which individuals cognitively plan to carry out the behaviours of opportunity recognition, venture creation, and venture development'.

Therefore, following the TPB, the following hypotheses are proposed:

H1: The greater the attitude towards entrepreneurship is, the greater the propensity to engage in entrepreneurial behaviour.

H2: The higher the subjective norm to undertake, the greater the propensity to engage in entrepreneurial behaviour.

H3: The greater the perceived behavioural control over entrepreneurship, the greater the propensity to engage in entrepreneurial behaviour.

2.2. Entrepreneurship education, self-efficacy belief, and opportunity-driven entrepreneurship

The literature on entrepreneurship relates entrepreneurial education and opportunity-driven entrepreneurship (Cervelló-Royo et al., 2020; Giotopoulos et al., 2017; Koellinger, 2008; Mas-Tur et al., 2015; Singh & Crump, 2007). This is because entrepreneurial education transfers knowledge to the field of business creation and management and encourages individuals to show an interest in business creation (DeTienne & Chandler, 2004).

Education contributes to the acquisition of knowledge and skills (Iglesias-Sánchez et al., 2019). Entrepreneurship education programs impart knowledge to improve the knowledge, skills and information that is needed to take advantage of an opportunity, in addition to providing the individual with analytical skills and knowledge of the

business process (Hussain & Norashidah, 2015). The acquisition of entrepreneurial skills promotes the ability to recognize, manage, evaluate, and know how to act on opportunities but also to take advantage of opportunities within a specific context (Lans et al., 2008). Thus, business education programs improve students' capacity for entrepreneurial intention, as they improve their ability to discover and exploit opportunities (Souitaris et al., 2007).

Entrepreneurial education contributes positively to entrepreneurial intention, as shown by the studies carried out by Lima et al. (2015); Zapkau et al. (2017); Fayolle and Gailly (2015); Vélez et al. (2020); Lorz and Volery (2011); Pedrini et al. (2017); and Zhang et al. (2014). Indeed, business education provides skills, knowledge and personal attitudes related to entrepreneurship (Hussain & Norashidah, 2015). These skills favour the recognition of opportunities in individuals to become entrepreneurs. Therefore, business education can have a direct effect on the entrepreneurial intentions of individuals (Byabashaija & Katono, 2011).

However, there is no consensus as to the sign of the incidence of entrepreneurial education on entrepreneurial intention. Some studies find a positive effect (Albashrawi & Alashoor, 2020; Gerba, 2012; Nabi et al., 2017; Pedrini et al., 2017; Solesvik, 2019), while others show a negative relationship (Galindo et al., 2012; Oosterbeek et al., 2010). Bae et al. (2014), in their meta-analytic review, found a positive relationship, although the effect was weak.

However, this controversy in the relationship between education and entrepreneurial intention can be explained by the incorporation of the entrepreneurial self-efficacy variable (Nowiński et al., 2019). As Jeon (2018) points out, among the psychological characteristics that influence entrepreneurial intention, only risk propensity and self-efficacy have predicted entrepreneurial intention. Self-efficacy, according to Conner and Sparks (2005), is the belief that an individual can perform a specific task and to achieve its desired objective.

Therefore, entrepreneurship education reinforces an individual's self-efficacy belief (Bandura, 2012; Wood & Bandura, 1989), which can predict entrepreneurial intention (Mozahem & Adlouni, 2021). This is revealed by the studies carried out by Vélez et al. (2020), Hoang Tien et al. (2020), and Ndofirepi (2020), in which the influence of business education on entrepreneurial intention was analysed through other factors because education alone does not have a significant impact on entrepreneurial intention.

Thus, the following hypothesis is suggested:

H4: Entrepreneurship education has a positive and direct effect on self-efficacy belief and a positive and indirect effect on entrepreneurial behaviour, with self-efficacy belief acting as a mediator in the relationship between entrepreneurship education and entrepreneurial behaviour.

3. Methodology

3.1. Data

The data used in this paper come from the GEM APS Spain. GEM is the only global research source that collects data on entrepreneurship directly from individual entrepreneurs. The GEM assesses the level of business activity in countries worldwide

annually. The GEM began in 1999 as a joint research project between Babson College (USA) and the London Business School (UK). The consortium has become the richest source of reliable information on the state of entrepreneurship and entrepreneurial ecosystems across the globe. A detailed description of the methodology and data used by the GEM can be found in Reynolds et al. (2005).

The GEM APS provides estimates of the participation of the adult population in the creation of a new business. The APS is administered to a minimum of 2000 adults in each economy, thus ensuring that it is nationally representative. The GEM defines early-stage entrepreneurs as nascent entrepreneurs and new business owners as new entrepreneurs. Those who have paid wages and salaries for more than three months and less than 42 months are otherwise considered new business owners. The sum of nascent entrepreneurs and new entrepreneurs is what the GEM denotes as 'total entrepreneurial activity' (TEA) (Peña et al., 2017). Data used in our empirical analysis originate from the 2016 GEM APS, which yields a sample of 1,008 entrepreneurs from various regions in Spain.

This study will use individual data and aggregate level data. GEM Microdata provides a great advantage since it allows us to combine individual characteristics of the founder of the company with the regional data for the entrepreneur's place of residence.

This article focuses on opportunity-driven entrepreneurship. Nishimura and Tristán (2011) say that the TPB might be better suited to explain opportunity-driven entrepreneurship than necessity-driven entrepreneurship.

The endogenous variable is defined as a dichotomous variable that takes the value of one if the entrepreneur creates opportunity-driven entrepreneurship and zero otherwise. Opportunity-driven entrepreneurship represents 70.7% of the primary motivation to create a new business (Peña et al., 2019).

The information used covers the period of the year 2016. The influence of the three determinants of planned behaviour in opportunity-driven entrepreneurship is analysed. The independent variables used in the analysis are described below.

The literature has measured attitudes towards entrepreneurship in diverse ways. In studies conducted using student surveys, attitude was measured from the point of view of the attractiveness of entrepreneurship compared to an alternative job option (Autio et al., 2001; Gird & Bagraim, 2008; Liñán & Chen, 2009). In studies that use GEM data, attitude has been measured in consideration of both positive and negative aspects (Nishimura & Tristán, 2011). In this study, the authors will use the same approach. People who perceive good opportunities to start a business in the region where they live will have a higher expectation of successful new business creation and a positive attitude towards entrepreneurship. People who think that fear of failure will prevent them from starting a business will be less interested in developing a new business and will not have a positive attitude towards entrepreneurship.

The subjective norm concerning business activity has been measured in different studies using different items. In most studies, the influence of reference groups (i.e., family, friends, and important people) and the environment in the future decision to be an entrepreneur are evaluated (Autio et al., 2001; Gird & Bagraim, 2008; Kolvereid, 1996; Liñán & Chen, 2009). In these studies, students were surveyed and

asked questions such as 'I know many people at my university who have successfully started their own company' and 'At your university, do you meet many people with good ideas for a new company?' Nishimura and Tristán (2011), with the use of GEM data, measure the subjective norm with the following question: 'Do you know someone personally who started a business in the last 2 years?' In this study, the authors will evaluate how the influence of the direct business environment – that is, the business culture of the region in which entrepreneurs live – can affect their decision to become entrepreneurs. Belonging to a region with a high entrepreneurial culture will assert social pressure to participate in business activity, and it is less likely that individuals residing in regions with a low entrepreneurial culture will feel such pressure.

Perceived behavioural control concerning entrepreneurship refers to the sense of self-efficacy or ability to carry out the business activity (i.e., the perceived ease or difficulty of carrying out the business activity). In the literature, behavioural control has been measured with the use of surveys that included questions such as 'I have the skills and abilities necessary to be successful as an entrepreneur' and 'Starting my own company would probably be the best way to take advantage of my education' (Autio et al., 2001; Gird & Bagraim, 2008; Liñán & Chen, 2009).

Many studies have found a significant relationship between the unemployment rate and entrepreneurship (Audretsch & Fritsch, 1994; Bergmann & Sternberg, 2007). Then, like other studies in the field (e.g., Audretsch et al., 2010; Mahadea & Kaseeram, 2018), in this study, the authors control for the influence of the variation in total salaried employment. Table 1 shows the variables used in this study.

3.2. Analysis

To analyse the determinants of entrepreneurial behaviour, a binary choice model is specified and estimated in which the probability of entrepreneurship depends on the personal, work, and economic characteristics of the entrepreneurs (Maddala, 1983). The functional forms most frequently used in applications are the probit and logit models. The probability functions used for the probit and logit models are the standard normal distribution and the logistic distribution function, respectively. Both distributions have bell shapes of symmetric distributions, and they give comparable results. There are, however, some differences (Amemiya, 1981). This study utilized the logit model because it facilitates the interpretation of the parameters β (regression coefficients) associated with the independent variables.

In this study, the dependent variable has only two values: opportunity-driven entrepreneurship (coded 1) or not (coded 0). Then, the influence that the independent variables described above have on entrepreneurship is tested. The logit model is suitable for analysing binary dependent variables.

Opportunity-driven entrepreneurship will be presented with one option or another, and this will return various levels of usefulness. That usefulness will depend on the values that are associated with the exogenous characteristics of the community and the obtained result. The variables of the problem will be represented by the linear combination $X_i\beta = Z_i$ (Cabrer-Borrás et al., 2001).

Table 1. Description of the variables.

Variables	Code	Description	Measure	Source	Authors using the measure
Dependent variable					
Entrepreneurial behaviour	**OPPORTUNITY-DRIVEN ENTREPRENEURSHIP**	Total entrepreneurial activity (TEA)	Dummy: 1 = opportunity-driven entrepreneurship; 0 otherwise.	APS GEM 2016	Nishimura and Tristán (2011)
Independent variables					
Entrepreneurial attitude	**OPPORT**	Will there be good opportunities to start a business in the area where you live in the next six months?	Dummy: 1 = Yes; 0 otherwise.	APS GEM 2016	Autio et al. (2001); Gird and Bagraim (2008); Liñán and Chen (2009); Nishimura and Tristán (2011)
	FEARFAIL	Would fear of failure prevent you from starting a business?	Dummy: 1 = Yes; 0 otherwise.	APS GEM 2016	Autio et al. (2001); Gird and Bagraim (2008); Liñán and Chen (2009); Nishimura and Tristán (2011)
Subjective norm	**TEA16REGIONAL**	Entrepreneurial rate in 2016 by Spanish region	Percentage	APS GEM 2016	Autio et al. (2001); Gird and Bagraim (2008); Kolvereid (1996); Liñán and Chen (2009); Nishimura and Tristán (2011)
Education	**ENTREPRENEURIAL EDUCATION**	Have you received an entrepreneurial education?	Dummy: 1 = Yes; 0 otherwise.	APS GEM 2016	Cervelló-Royo et al. (2020); Giotopoulos et al. (2017); Koellinger (2008); Mas-Tur et al. (2015); Singh and Crump (2007)
Independent and mediating variables					
Behavioural control	**SUSKILL**	Do you have the knowledge, skills, and experience necessary to start a new business?	Dummy: 1 = Yes; 0 otherwise.	APS GEM 2016	Autio et al. (2001); Gird and Bagraim (2008); Liñán and Chen (2009); Nishimura and Tristán (2011)
Control variable					
Economic cycle	**VTSE**	The variation in total salaried employment in each Spanish region in 2016 compared to 2015.	Percentage	World Bank 2015/16	Bergmann and Sternberg (2007)

Source: own elaboration.

Utility is quantified by assigning a probability to rational decisions. This is done using the following equation:

$$\boldsymbol{Prob}(\boldsymbol{Y_i} = 1) = \boldsymbol{Prob}(\boldsymbol{U_{i1}} > \boldsymbol{U_{i0}}) = \boldsymbol{F}(\boldsymbol{X_i}\beta) \;\; = \;\; \mathrm{F}(\boldsymbol{Z_i}) \tag{1}$$

This study will use a logit model, which uses the logistics distribution function shown below:

$$\boldsymbol{Prob}(\boldsymbol{Y_i} = 1) = \left(\hat{\boldsymbol{X}}_i\beta\right) \;\; = \;\; (\hat{\boldsymbol{Z}}_i) = \frac{\boldsymbol{e}^{\boldsymbol{Z_i}}}{1 + \boldsymbol{e}^{\boldsymbol{Z_i}}} \tag{2}$$

With this model, the variable $\boldsymbol{Y_i}$ correlates the variables $\boldsymbol{X_{2i}}$, ……, $\boldsymbol{X_{ki}}$ using the following equation:

$$\boldsymbol{Y_i} = \frac{1}{1 + \boldsymbol{e}^{-(\boldsymbol{X_i}\boldsymbol{\beta})}} + \boldsymbol{u_i} \tag{3}$$

where $\boldsymbol{u_i}$ is a random variable that is distributed following the norm N (0, $\boldsymbol{\sigma}^2$) that will collect the variation in the different Spanish regions. The variables $\boldsymbol{X_i}$ are fixed in the sample. The dependent variable $\boldsymbol{Y_i}$ can take the zero values or the unit.

The interpretation of the logit model can be made from the following fact:

$$\boldsymbol{Prob}(\boldsymbol{Y_i} = 1/\boldsymbol{X_i}) = \boldsymbol{P_i} \tag{4}$$

$$\boldsymbol{Prob}(\boldsymbol{Y_i} = 0/\boldsymbol{X_i}) = (1 - \boldsymbol{P_i}) \tag{5}$$

The estimated model will provide quantification of the probability of having the option or an alternative, expressed as:

$$\hat{\boldsymbol{Y}}\boldsymbol{i} = \hat{\boldsymbol{P}}\boldsymbol{i} = \;\; \Delta\left(\boldsymbol{X_i}\hat{\boldsymbol{\beta}}\right) \tag{6}$$

First, a logit Model 1 is specified and estimated, in which the probability of opportunity-driven entrepreneurship is estimated by entrepreneurial attitude, the subjective norm and behavioural control; in addition, the changing employment rate has been included as a proxy control variable of the economic cycle.

Finally, Models 2, 3, and 4 add a mediating variable. The central idea in these models is to demonstrate that the effects of stimuli on behaviour are mediated by perception. This study will demonstrate that self-efficacy belief is a mediator between entrepreneurial education and opportunity entrepreneurship.

4. Results

The correlation matrix offers preliminary support for the first three hypotheses. Most of the correlations between opportunity-driven entrepreneurship and each of their hypothetical determinants are significant and show the expected direction (see Table 2).

Table 3 shows the results of binary logistic regression models.

Hypothesis 1 stated that 'The greater the attitude towards entrepreneurship, the greater the propensity to engage in entrepreneurial behaviour'. Two items measured the attitude towards entrepreneurship: the perception of opportunities and the fear of

Table 2. Correlation coefficients.

OPPORTUNITY-DRIVEN ENTREPRENEURSHIP	
−0.1147	FEARFAIL
0.1195	OPPORT
0.0858	TEA16REGIONAL
0.1263	SUSKILL
0.1263	SUSKILL

Source: Own elaboration; Critical value at 5% (two-tailed) = 0.0618; Sample: 1008.

Table 3. Results of binary logistic regression.

Dependent variable: OPPORTUNITY-DRIVEN ENTREPRENEURSHIP				
	Coefficient	*Std. Dev*	*z*	*p value*
const	−0.2823	0.3213	−0.8788	0.3795
Entrepreneurial attitude				
FEARFAIL	−0.3989	0.1567	−2.545	0.0109**
OPPORT	0.491938	0.1526	3.223	0.0013***
Subjective norm				
TEA16REGIONAL	0.1102	0.0516	2.134	0.0328**
Self-efficacy belief				
SUSKILL	0.5424	0.1959	2.768	0.0056***
Control variable				
VTSE	−27.9770	10.1737	−2.750	0.0060***

Number of cases 'correctly predicted' = 699 (69.3%).
f(beta'x) at mean of independent vars = 0.462.
Likelihood ratio test: Chi-square (4) = 46.1502 [0.0000].
Sample: 1008.
Data source. GEM APS (Adult Population Survey), NES 2016. *Significant on 10%-level; **Significant on 5%-level; ***Significant on 1%-level.
Source: own elaboration.

failure. Fear of failure presents an inverse relationship with opportunity-driven entrepreneurship. Table 3 shows that attitudes towards entrepreneurship based on the perception of opportunities had a significant positive effect on behaviour – that is, opportunity-driven entrepreneurship ($p < 0.01$). The results of this study confirm that positive perceptions of opportunities increase the probability of opportunity-driven entrepreneurship by 10%. These results imply accepting hypothesis 1. The attitude towards entrepreneurship based on fear of failure, on the other hand, had a significant negative effect on the behaviour ($p < 0.05$). Perceptions of fear of failure decrease the probability of opportunity-driven entrepreneurship by 8%.

Hypothesis 2 stated that 'The higher the subjective norm to undertake, the greater the propensity to engage in entrepreneurial behaviour'. Table 3 shows that the influence of the subjective norm on entrepreneurial behaviour was significant ($p < 0.05$). Therefore, Hypothesis 2 was accepted. The model shows that the influence of the subjective norm on entrepreneurial behaviour is positive. The results confirm that a high degree of entrepreneurship in the region increases the probability of opportunity-driven entrepreneurship by 2%.

Hypothesis 3 stated that 'The greater the perceived behavioural control over entrepreneurship, the greater the propensity to engage in entrepreneurial behaviour'. Table 3 shows that perceived behavioural control had a significant positive effect on entrepreneurial behaviour ($p < 0.01$). Therefore, Hypothesis 3 was accepted. The results confirm that positive self-efficacy belief increases the probability of opportunity-driven entrepreneurship by 11%.

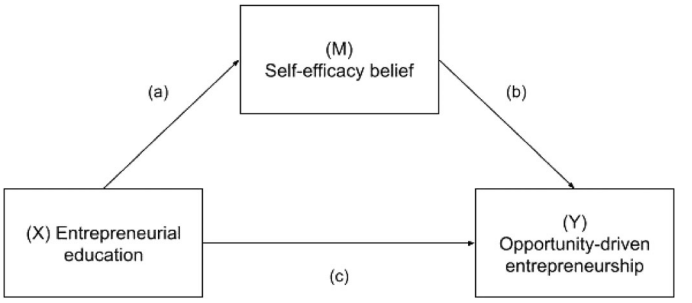

Figure 1. Mediation paths diagram. *Note*: a = regression coefficient of X on M.; b = regression coefficient of M on Y; c = regression coefficient of X on Y.
Source: own elaboration.

All independent variables had a considerable influence on opportunity-driven entrepreneurship. These results show that the TPB explains opportunity-driven entrepreneurship.

Regarding the global fit of the model, the chi-square test showed that the model was significant ($p = 0.0000$). On the other hand, the chi-square value of the Hosmer and Lemeshow measure is not significant (0.462), which indicates that there are no statistically significant differences between the observed and predicted classifications. The model's overall success percentage is 69.3%. Therefore, the fit of the logit model is good, and it is to be expected that the results are also adequate for predicting opportunity-driven entrepreneurship.

4.1. Mediation results

The analysis procedure necessary to test mediating effects between an independent and a dependent variable was well described by Baron and Kenny (1986). According to these authors, mediation takes place when:

I. The independent variable and the mediator are effectively related.
II. The independent variable influences the dependent variable in the absence of the mediator.
III. The mediating variable has a unique and significant influence on the dependent variable.
IV. The addition of the mediating variable in the model reduces the effect of the independent variable on the dependent variable.

These criteria can be used to judge whether there is a mediation effect in the relationship between three variables; however, it is necessary to evaluate not only the existence of mediating effects but also their importance (Sobel, 1982).

To clarify the meaning of mediation, a path diagram as a model through which to represent a causal chain is now presented. The causal chain involved in mediation is outlined in Figure 1. It assumes three variables such that two causal paths feed the outcome variable: the direct impact of the independent variable (Path c) and the impact of the mediator (Path b). There is also a path from the independent variable to the mediator (Path a) (Baron & Kenny, 1986).

Table 4. Model 2. Relationship between the independent variable and the mediating variable.

Dependent variable: SUSKILL (self-efficacy belief)					
	Coefficient	*Std. Dev*	*z*	*p value*	
const	1.5952	0.3198	4.988	<0.0001	***
ENTREPRENEURIAL EDUCATION	0.7389	0.1889	3.911	<0.0001	***
VTSE	−4.5655	13.3511	−0.3420	0.7324	

Number of cases 'correctly predicted' = 869 (86.2%).
f(beta'x) at mean of independent vars = 0.345.
Likelihood ratio test: Chi-square (2) = 16.126 [0.0003].
Sample: 1008.
Data source. GEM APS, NES 2016. *Significant on 10%-level; **Significant on 5%-level; ***Significant on 1%-level.
Source: own elaboration.

Table 5. Model 3. Relationship between the independent variable and the dependent variable.

Dependent variable: OPPORTUNITY-DRIVEN ENTREPRENEURSHIP					
	Coefficient	*Std. Dev*	*z*	*p value*	
const	1.1401	0.2449	4.655	<0.0001	***
ENTREPRENEURIAL EDUCATION	0.4049	0.1377	2.940	0.0033	***
VTSE	−24.1963	10.0422	−2.409	0.0160	**

Number of cases 'correctly predicted' = 698 (69.2%).
f(beta'x) at mean of independent vars = 0.462.
Likelihood ratio test: Chi-square (2) = 15.1677 [0.0005].
Sample: 1008.
Data source. GEM APS, NES 2016. *Significant on 10%-level; **Significant on 5%-level; ***Significant on 1%-level.
Source: own elaboration.

Table 6. Model 4. Relationship between the independent variable and the mediating variable on the dependent variable.

Dependent variable: OPPORTUNITY-DRIVEN ENTREPRENEURSHIP					
	Coefficient	*Std. Dev*	*z*	*p value*	
const	0.5964	0.2878	2.072	0.0382	**
ENTREPRENEURIAL EDUCATION	0.3471	0.13951	2.488	0.0128	**
SUSKILL	0.6748	0.1886	3.578	0.0003	***
VTSE	−24.1743	10.1021	−2.393	0.0167	**

Number of cases 'correctly predicted' = 687 (68.2%).
f(beta'x) at mean of independent vars = 0.462.
Likelihood ratio test: Chi-square (3) = 27.6681 [0.0000].
N observaciones: 1008.
Data source. GEM APS, NES 2016. *Significant on 10%-level; **Significant on 5%-level; ***Significant on 1%-level.
Source: own elaboration.

Models 2, 3, and 4 (see Tables 4–6) analyse the direct and indirect effects of entrepreneurial education (X) and self-efficacy belief (M) on opportunity-driven entrepreneurship (Y). Model 2 shows the relationship between the independent variable and the mediating variable (relationship a). Model 3 shows the relationship between the independent variable and the dependent variable (relationship b). Model 4 shows the relationship between the independent variable and the mediating variable on the dependent variable (relationship c).

The entrepreneurial education variable is significantly related to opportunity-driven entrepreneurship. The entrepreneurial education variable is significantly related to the mediating variable self-efficacy belief. Self-efficacy belief has a significant relationship with opportunity-driven entrepreneurship, and the effect of the entrepreneurial

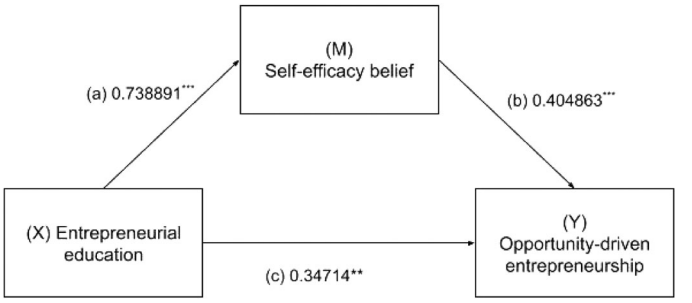

Figure 2. Mediation results. *Note*: Type of mediation: Partial. Value-Z Sobel 2.35. *** $p < 0.01$; **$p < 0.5$; *$p < 0.1$.
Source: own elaboration.

education variable remains constant. The relationship between entrepreneurial education and opportunity-driven entrepreneurship is significantly lower when the mediating variable is incorporated into the model. To demonstrate the latter relationship, the Sobel test, which compares the statistical significance between the direct effects of the independent variable and the indirect effects through the mediating variable, is applied (Sobel, 1982).

The results indicate that in the calculated mediator model (see Figure 2), the observed mediation effect is significant ($z = 2.35007151$; $p = 0.0187698$). Self-efficacy belief is thus a mediator between entrepreneurial education and opportunity-driven entrepreneurship.

The null hypothesis is rejected at the 5% significance level. Therefore, there is a mediating effect at 95% reliability. First, the Sobel test (z value) ($p < 0.05$) and the identified mediator effect were significant. The mediation is therefore not full mediation.

Hypothesis 4 stated that 'Entrepreneurship education has a positive and direct effect on self-efficacy belief and a positive and indirect effect on entrepreneurial behaviour, with self-efficacy belief acting as a mediator in the relationship between entrepreneurship education and entrepreneurial behaviour'. Entrepreneurial education has a significant effect on self-efficacy belief. Entrepreneurial education has a significant effect on opportunity-driven entrepreneurship. The results allow us to state that self-efficacy belief is thus a mediator between entrepreneurship education and entrepreneurial behaviour. These results imply accepting hypothesis 4.

5. Discussion

The present study contributes to a better understanding of how entrepreneurship education and self-efficacy can influence opportunity-driven entrepreneurship and shows the TPB as an adequate framework through which to view opportunity-driven entrepreneurship.

The TPB has become one of the theories most used to explain and predict individual behaviour. In this study, the TPB was applied to predict entrepreneurial behaviour, specifically opportunity-driven entrepreneurship. The results of this paper verify the validity of the theory for explaining opportunity-driven entrepreneurship. Behavioural intentions were excluded from our model since our research purpose was to study actual behaviour rather than behavioural intention.

The results of this study fully support the TPB. These results are consistent with those obtained in other studies using GEM data (Krueger et al., 2000; Liñán & Chen, 2009; Minniti, 2005; Nishimura & Tristán, 2011; Pathak, 2021). For example, Minniti (2005), using GEM data from 28 countries, concluded that attitude, subjective norms, and behavioural control had significant effects on nascent entrepreneurship. On the other hand, Nishimura and Tristán (2011), in their study with GEM data from Peru, indicated that the influence of meeting other entrepreneurs (subjective norm) was not significant and the influence of fear of failure (attitude) was significant only in some years. Of the studies that analyse entrepreneurial intention, we highlight Krueger et al. (2000) and Liñán and Chen (2009) and note that neither study found a significant effect of subjective norms on entrepreneurial behavioural intention.

Entrepreneurship education has a direct and significant effect on opportunity-driven entrepreneurial behaviour. This education increases the likelihood of opportunity-driven entrepreneurship. The results of this study verify that individuals who have received entrepreneurial education are more likely to start an opportunity-driven business than those who have not. Entrepreneurial education contributes to entrepreneurs having the qualities required to establish new businesses (Jayawarna et al., 2014; Martín-Rojas et al., 2013; Mosey & Wright, 2007; Rauch & Hulsink, 2015; Zhang et al., 2014).

Entrepreneurial education improves the perception of self-efficacy and thus increases the probability of opportunity-driven entrepreneurship. Investing in entrepreneurial education is one of the most profitable activities in which policymakers can engage. According to the European Union (EU) (2013), between 15% and 20% of students who participate in a mini-business program in secondary education will then start their own business, and that number is three to five times higher than that of the general population. Young people who receive entrepreneurial education develop essential entrepreneurial knowledge, skills, and attitudes, such as creativity, initiative, tenacity, teamwork, knowledge of risk, and a sense of responsibility. Consistent with the results of the present study and according to Pillar 1 of the European Union (EU) (2013), this is the entrepreneurial mindset that helps them transform ideas into action and increases entrepreneurship.

Our research contrasts the mediating effect between the relationship of entrepreneurial education and opportunity-driven entrepreneurship through self-efficacy belief. Rauch and Hulsink (2015) verify the effect of education on entrepreneurial intention but do not verify the mediating effect on this relationship. The results of this study show that self-efficacy belief represents the generative mechanism by which entrepreneurial education influences opportunity-driven entrepreneurship. That is, entrepreneurial education leads to a greater self-efficacy belief, which then leads to greater opportunity-driven entrepreneurship. According to previous research (Liñán et al., 2011; Schlaegel & Koenig, 2014), these results provide evidence of the importance of continuing to support entrepreneurship education.

6. Conclusions

This study explores the relationship between entrepreneurship education and entrepreneurship, as well as the role of entrepreneurs' self-assessed entrepreneurial skills in

mediating this relationship. Although prior studies confirm the featured role of education in entrepreneurship by providing knowledge and skills, they show different results on the effect of education on entrepreneurial intentions (Albashrawi & Alashoor, 2020; Hoang Tien et al., 2020) or on some perceptions, such as self-assessed entrepreneurial skills (Oosterbeek et al., 2010; Von Graevenitz et al., 2010). The results of the present study show that entrepreneurial education has a positive relationship with self-efficacy belief, which then leads to greater entrepreneurial behaviour, specifically opportunity-driven entrepreneurship. On this basis, self-efficacy belief could be considered an individual perception by which entrepreneurial education influences entrepreneurship. Therefore, the present study contributes to a better understanding of how entrepreneurship education and self-efficacy belief can influence opportunity-driven entrepreneurship and validates the TPB as an adequate framework through which to analyse opportunity-driven entrepreneurship.

Entrepreneurship education supports entrepreneurs by providing the qualities required to establish new businesses (Jayawarna et al., 2014; Martín-Rojas et al., 2013; Mosey & Wright, 2007; Rauch & Hulsink, 2015; Zhang et al., 2014). The results obtained in the present study show that individuals who have received entrepreneurial education are more likely to start an opportunity-driven business than those who have not. Education is one of the preeminent challenges for any country. The relevance of supporting entrepreneurial education is accepted (Liñán et al., 2011; Schlaegel & Koenig, 2014). However, the GEM consortium determines entrepreneurship education as the least well-developed and weakest condition of the entrepreneurship ecosystem. From an applied perspective, the results of this study provide evidence of the importance of reinforcing support for entrepreneurship education to improve the perception of self-efficacy and then increase the probability of opportunity-driven entrepreneurship. Investing in entrepreneurial education is one of the most profitable activities that a country can engage in to enhance future individual entrepreneurship behaviour. People who receive entrepreneurial education develop essential entrepreneurial knowledge, skills, and attitudes. Policymakers are aware of the necessity of launching entrepreneurship education strategies, but it is crucial to go further. As demonstrated by the results of the present study, entrepreneurship education should be focused on reinforcing skills and competencies that increase self-efficacy, facilitate individual capacity for action and a better understanding of business opportunities in the environment in which they arise. Universities represent a considerable proportion of opportunity-driven entrepreneurs and could be key agents in developing this strategy. Accordingly, policymakers could also develop specific measures focused on secondary education, the worst-rated framework condition by the GEM consortium.

7. Limitations and future research

This study has various limitations. Because the research is focused on Spain, it would be interesting to test the proposed relationships on other European countries and in different international contexts. The second limitation is also associated with the study sample. In future studies, differentiation could be made between entrepreneurs

who are in the start-up phase and those who are in the exploitation phase of a new business.

In future lines of research, the authors wish to explore other possible mediating effects that can influence the variables analysed (e.g., gender or team formation (Warhuus et al., 2021)) and if and how they influence the relationship between entrepreneurial education and self-efficacy belief. Future studies could also add new variables that may influence intentions and opportunity perceptions to the research model, such as the GEM framework conditions in a region or country. Additionally, it would be interesting to study how COVID-19 may have affected entrepreneurs' self-assessed skills and decisions to start opportunity-driven ventures since entrepreneurs could be more cautious when deciding to start new businesses.

Note

1. https://www.gemconsortium.org/
2. For a complete list of terms and definitions see the Appendix.

References

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. *Action Control* (pp. 11–39). Springer.

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Ajzen, I., Heilbroner, R. L., Fishbein, M., & Thurow, L. C. (1980). *Understanding Attitudes and Predicting Social Behaviour*. Prentice Hall PTR.

Alam, M. Z., Kousar, S., & Rehman, C. (2019). Role of entrepreneurial motivation on entrepreneurial intentions and behaviour: Theory of planned behaviour extension on engineering students in Pakistan. *Journal of Global Entrepreneurship Research*, *9*(1), 1–20. https://doi.org/10.1186/s40497-019-0175-1

Albashrawi, M., & Alashoor, T. (2020). Entrepreneurial Intention: The Impact of General Computer Self-Efficacy and Computer Anxiety. *Interacting with Computers*, *32*(2), 118–131. https://doi.org/10.1093/iwc/iwaa009

Amemiya, T. (1981). Qualitative response models – A survey. *Journal of Economic Literature*, *19*(4), 1483–1536.

Audretsch, D., Dohse, D., & Niebuhr, A. (2010). Cultural diversity and entrepreneurship: A regional analysis for Germany. *The Annals of Regional Science*, *45*(1), 55–85. https://doi.org/10.1007/s00168-009-0291-x

Audretsch, D., & Fritsch, M. (1994). The geography of firm births in Germany. *Regional Studies*, *28*(4), 359–365. https://doi.org/10.1080/00343409412331348326

Autio, E., H. Keeley, R., Klofsten, M., G. C. Parker, G., & Hay, M. (2001). Entrepreneurial intent among students in Scandinavia and in the USA. *Enterprise and Innovation Management Studies*, *2*(2), 145–160. https://doi.org/10.1080/14632440110094632

Bae, T. J., Qian, S., Miao, C., & Fiet, J. O. (2014). The relationship between entrepreneurship education and entrepreneurial intentions: A meta-analytic review. *Entrepreneurship Theory and Practice*, *38*(2), 217–254. https://doi.org/10.1111/etap.12095

Bandura, A. (1989). Human agency in social cognitive theory. *The American Psychologist*, *44*(9), 1175–1184. https://doi.org/10.1037/0003-066x.44.9.1175

Bandura, A. (2012). *On the Functional Properties of Perceived Self-Efficacy Revisited*. Sage Publications.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of*

Personality and Social Psychology, *51*(6), 1173–1182. https://doi.org/10.1037//0022-3514.51.6.1173

Bergmann, H., & Sternberg, R. (2007). The changing face of entrepreneurship in Germany. *Small Business Economics*, *28*(2–3), 205–221. https://doi.org/10.1007/s11187-006-9016-z

Bosma, N., Hill, S., Ionescu-Somers, A., Kelley, D., Levie, J., & Tarnawa, A. (2020). Global Entrepreneurship Monitor. 2019/2020 Global Report. L. B. S. Global Entrepreneurship Research Association, Regents Park, London NW1 4SA, UK

Byabashaija, W., & Katono, I. (2011). The impact of college entrepreneurial education on entrepreneurial attitudes and intention to start a business in Uganda. *Journal of Developmental Entrepreneurship*, *16*(1), 127–144. https://doi.org/10.1142/S1084946711001768

Cabrer-Borrás, B., Sancho-Pérez, A., & Serrrano Domingo, G. (2001). *Microeconometría y Decisión*. Ediciones Pirámide.

Cervelló-Royo, R., Moya-Clemente, I., Perelló-Marín, M. R., & Ribes-Giner, G. (2020). Sustainable development, economic and financial factors, that influence the opportunity-driven entrepreneurship. An fsQCA approach. *Journal of Business Research*, *115*, 393–402. https://doi.org/10.1016/j.jbusres.2019.10.031

Conner, M., & Sparks, P. (2005). Theory of planned behaviour and health behaviour. *Predicting Health Behaviour*, *2*(1), 121–162.

DeTienne, D. R., & Chandler, G. N. (2004). Opportunity identification and its role in the entrepreneurial classroom: A pedagogical approach and empirical test. *Academy of Management Learning & Education*, *3*(3), 242–257. https://doi.org/10.5465/amle.2004.14242103

European Union. (2013). European Commission, Communication Entrepreneurship 2020 Action Plan. COM(2012) 795 final. Retrieved 1 September, 2013, from https://eur-lex.europa.eu/legal-content/EN/ALL/?uri=CELEX%3A52012DC0795

Fayolle, A., & Gailly, B. (2015). The impact of entrepreneurship education on entrepreneurial attitudes and intention: Hysteresis and persistence. *Journal of Small Business Management*, *53*(1), 75–93. https://doi.org/10.1111/jsbm.12065

Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. Addison-Wesley Pub. Co.

Galindo, M.-Á., Ribeiro, D., & Méndez, M. T. (2012). Innovación y crecimiento económico: Factores que estimulan la innovación. *Cuadernos de Gestión*, *12* (Especial Innovación), 51–58. http://doi.org/10.5295/cdg.110309mg

Gerba, D. T. (2012). (). The context of entrepreneurship education in Ethiopian universities. Management Research Review.

Gieure, C., Mar Benavides-Espinosa, M. d., & Roig-Dobón, S. (2020). The entrepreneurial process: The link between intentions and behavior. *Journal of Business Research*, *112*, 541–548. https://doi.org/10.1016/j.jbusres.2019.11.088

Giotopoulos, I., Kontolaimou, A., & Tsakanikas, A. (2017). Drivers of high-quality entrepreneurship: What changes did the crisis bring about? *Small Business Economics*, *48*(4), 913–930. https://doi.org/10.1007/s11187-016-9814-x

Gird, A., & Bagraim, J. J. (2008). The theory of planned behaviour as predictor of entrepreneurial intent amongst final-year university students. *South African Journal of Psychology*, *38*(4), 711–724. https://doi.org/10.1177/008124630803800410

Hmieleski, K. M., & Corbett, A. C. (2006). Proclivity for improvisation as a predictor of entrepreneurial intentions. *Journal of Small Business Management*, *44*(1), 45–63. https://doi.org/10.1111/j.1540-627X.2006.00153.x

Hoang Tien, N., Minh, H. T. T., Minh Duc, L. D., Mai, N. P., & Thuc, T. D. (2020). Social entrepreneurship and corporate sustainable development. Evidence from Vietnam. *Cogent Business & Management*, *7*(1), 1816417. https://doi.org/10.1080/23311975.2020.1816417

Hussain, A., & Norashidah, D. (2015). Impact of entrepreneurial education on entrepreneurial intentions of Pakistani Students. *Journal of Entrepreneurship and Business Innovation*, *2*(1), 43–53. https://doi.org/10.5296/jebi.v2i1.7534

Iglesias-Sánchez, P. P., Jambrino-Maldonado, C., & de las Heras-Pedrosa, C. (2019). Training entrepreneurial competences with open innovation paradigm in higher education. *Sustainability*, *11*(17), 4689. https://doi.org/10.3390/su11174689

Jayawarna, D., Jones, O., & Macpherson, A. (2014). Entrepreneurial potential: The role of human and cultural capitals. *International Small Business Journal: Researching Entrepreneurship*, *32*(8), 918–943. https://doi.org/10.1177/0266242614525795

Jeon, S. (2018). What influences entrepreneurial intentions? An empirical study using data from the global entrepreneurship monitor. *Academy of Entrepreneurship Journal*, *24*(3), 1–15.

Kautonen, T., van Gelderen, M., & Tornikoski, E. T. (2013). Predicting entrepreneurial behaviour: A test of the theory of planned behaviour. *Applied Economics*, *45*(6), 697–707. https://doi.org/10.1080/00036846.2011.610750

Koellinger, P. (2008). Why are some entrepreneurs more innovative than others? *Small Business Economics*, *31*(1), 21–37. https://doi.org/10.1007/s11187-008-9107-0

Kolvereid, L. (1996). Prediction of employment status choice intentions. *Entrepreneurship Theory and Practice*, *21*(1), 47–58. https://doi.org/10.1177/104225879602100104

Krueger, N., Reilly, M., & Carsrud, A. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing*, *15*(5–6), 411–432. https://doi.org/10.1016/S0883-9026(98)00033-0

Kuratko, D. F. (2005). The emergence of entrepreneurship education: Development, trends, and challenges. *Entrepreneurship Theory and Practice*, *29*(5), 577–597. https://doi.org/10.1111/j.1540-6520.2005.00099.x

Lans, T., Hulsink, W., Baert, H., & Mulder, M. (2008). Entrepreneurship education and training in a small business context: Insights from the competence-based approach. *Journal of Enterprising Culture*, *16*(04), 363–383. https://doi.org/10.1142/S0218495808000193

Lima, E., Lopes, R. M., Nassif, V., & Silva, D. (2015). Opportunities to improve entrepreneurship education: Contributions considering Brazilian challenges. *Journal of Small Business Management*, *53*(4), 1033–1051. https://doi.org/10.1111/jsbm.12110

Liñán, F., & Chen, Y. W. (2009). Development and cross-cultural application of a specific instrument to measure entrepreneurial intentions. *Entrepreneurship Theory and Practice*, *33*(3), 593–617. https://doi.org/10.1111/j.1540-6520.2009.00318.x

Liñán, F., Rodríguez-Cohard, J. C., & Rueda-Cantuche, J. M. (2011). Factors affecting entrepreneurial intention levels: A role for education. *International Entrepreneurship and Management Journal*, *7*(2), 195–218. https://doi.org/10.1007/s11365-010-0154-z

Lortie, J., & Castogiovanni, G. (2015). The theory of planned behavior in entrepreneurship research: What we know and future directions. *International Entrepreneurship and Management Journal*, *11*(4), 935–957. https://doi.org/10.1007/s11365-015-0358-3

Lorz, M., & Volery, T. (2011). *The Impact of Entrepreneurship Education on Entrepreneurial Intention*. University of St. Gallen.

Lüthje, C., & Franke, N. (2003). The 'making' of an entrepreneur: Testing a model of entrepreneurial intent among engineering students at MIT. *R&D Management*, *33*(2), 135–147.

Maddala, G. S. (1983). Methods of estimation for models of markets with bounded price variation. *International Economic Review*, *24*(2), 361–378. https://doi.org/10.2307/2648751

Mahadea, D., & Kaseeram, I. (2018). The relationship between unemployment, entrepreneurship, rising income in South Africa: An exploratory study. *African Journal of Business and Economic Research*, *13*(2), 203–226. https://doi.org/10.31920/1750-4562/2018/v13n2a10

Martín-Rojas, R., García-Morales, V. J., & Bolívar-Ramos, M. T. (2013). Influence of technological support, skills and competencies, and learning on corporate entrepreneurship in European technology firms. *Technovation*, *33*(12), 417–430. https://doi.org/10.1016/j.technovation.2013.08.002

Mas-Tur, A., Pinazo, P., Tur-Porcar, A. M., & Sánchez-Masferrer, M. (2015). What to avoid to succeed as an entrepreneur. *Journal of Business Research*, *68*(11), 2279–2284. https://doi.org/10.1016/j.jbusres.2015.06.011

Minniti, M. (2005). Entrepreneurship and network externalities. *Journal of Economic Behavior & Organization*, *57*(1), 1–27. https://doi.org/10.1016/j.jebo.2004.10.002

Mosey, S., & Wright, M. (2007). From human capital to social capital: A longitudinal study of technology-based academic entrepreneurs. *Entrepreneurship Theory and Practice*, *31*(6), 909–935. https://doi.org/10.1111/j.1540-6520.2007.00203.x

Mothibi, N. H., & Malebana, M. J. (2019). Determinants of entrepreneurial intentions of secondary school learners in Mamelodi, South Africa. *Academy of Entrepreneurship Journal*, *25*(2), 1–14.

Mozahem, N. A., & Adlouni, R. O. (2021). Using entrepreneurial self-efficacy as an indirect measure of entrepreneurial education. *The International Journal of Management Education*, *19*(1), 100385. https://doi.org/10.1016/j.ijme.2020.100385

Nabi, G., Liñán, F., Fayolle, A., Krueger, N., & Walmsley, A. (2017). The impact of entrepreneurship education in higher education: A systematic review and research agenda. *Academy of Management Learning & Education*, *16*(2), 277–299. https://doi.org/10.5465/amle.2015.0026

Ndofirepi, T. M. (2020). Relationship between entrepreneurship education and entrepreneurial goal intentions: Psychological traits as mediators. *Journal of Innovation and Entrepreneurship*, *9*(1), 1–20. https://doi.org/10.1186/s13731-020-0115-x

Nishimura, J. S., & Tristán, O. M. (2011). Using the theory of planned behavior to predict nascent entrepreneurship. *Academia. Revista Latinoamericana de Administración*, *46*, 55–71.

Nowiński, W., Haddoud, M. Y., Lančarič, D., Egerová, D., & Czeglédi, C. (2019). The impact of entrepreneurship education, entrepreneurial self-efficacy and gender on entrepreneurial intentions of university students in the Visegrad countries. *Studies in Higher Education*, *44*(2), 361–379. https://doi.org/10.1080/03075079.2017.1365359

Oosterbeek, H., Van Praag, M., & Ijsselstein, A. (2010). The impact of entrepreneurship education on entrepreneurship skills and motivation. *European Economic Review*, *54*(3), 442–454. https://doi.org/10.1016/j.euroecorev.2009.08.002

Pathak, S. (2021). Societal self-control and post-exit entrepreneurial intentions. *International Journal of Entrepreneurial Behavior & Research*, *27*(7), 1751–1775. https://doi.org/10.1108/IJEBR-11-2019-0655

Pedrini, M., Langella, V., & Molteni, M. (2017). Do entrepreneurial education programs impact the antecedents of entrepreneurial intention? An analysis of an entrepreneurship MBA in Ghana. *Journal of Enterprising Communities: People and Places in the Global Economy*, *11*(3), 373–392. https://doi.org/10.1108/JEC-12-2016-0043

Peña, I., Guerrero, M., González-Pernía, J., Alonso Martínez, D., González Álvarez, N., Nieto, M., Aguado Romero, J., García-Parada Arias, G., Hernández Peinado, M., & Rodríguez Ariza, L. (2017). Global Entrepreneurship Monitor. Informe GEM España 2016. Editorial Universidad de Cantabria: Santander.

Peña, I., Guerrero, M., González-Pernía, J., Montero, J., Ruiz Navarro, J., Camelo Ordaz, C., Diánez, J., Estrada Lavilla, R., Bayón, J., Barrabés, C., & Costas, A. (2019). Global Entrepreneurship Monitor. Informe GEM España 2018-2019. Editorial Universidad de Cantabria: Santander.

Pittaway, L., & Cope, J. (2007). Entrepreneurship education – A systematic review of the evidence. *International Small Business Journal: Researching Entrepreneurship*, *25*(5), 479–510. https://doi.org/10.1177/0266242607080656

Rauch, A., & Hulsink, W. (2015). Putting entrepreneurship education where the intention to act lies: An investigation into the impact of entrepreneurship education on entrepreneurial behavior. *Academy of Management Learning & Education*, *14*(2), 187–204. https://doi.org/10.5465/amle.2012.0293

Reynolds, P., Bosma, N., Autio, E., Hunt, S., De Bono, N., Servais, I., Lopez-Garcia, P., & Chin, N. (2005). Global Entrepreneurship Monitor: Data collection design and implementation 1998-2003. *Small Business Economics*, *24*(3), 205–231. https://doi.org/10.1007/s11187-005-1980-1

Schlaegel, C., & Koenig, M. (2014). Determinants of entrepreneurial intent: A meta–analytic test and integration of competing models. *Entrepreneurship Theory and Practice*, *38*(2), 291–332. https://doi.org/10.1111/etap.12087

Singh, R. P., & Crump, M. E. (2007). Educational attainment: A key factor for improving the lagging rate of black entrepreneurship. *The Review of Black Political Economy*, *34*(3–4), 217–229. https://doi.org/10.1007/s12114-008-9011-5

Sobel, M. E. (1982). Asymptotic confidence intervals for indirect effects in structural equation models. *Sociological Methodology*, *13*, 290–312. https://doi.org/10.2307/270723

Solesvik, M. Z. (2019). *Entrepreneurial Competencies and Intentions: The Role of Higher Education*. Forum Scientiae Oeconomia.

Souitaris, V., Zerbinati, S., & Al-Laham, A. (2007). Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business Venturing*, *22*(4), 566–591. https://doi.org/10.1016/j.jbusvent.2006.05.002

Tornikoski, E., & Maalaoui, A. (2019). Critical reflections – The theory of planned behaviour: An interview with Icek Ajzen with implications for entrepreneurship research. *International Small Business Journal: Researching Entrepreneurship*, *37*(5), 536–550. https://doi.org/10.1177/0266242619829681

United Nations General Assembly. (2015). Transforming our world: *The* 2030 Agenda for Sustainable Development. https://www.un.org/en/development/desa/population/migration/generalassembly/docs/globalcompact/A_RES_70_1_E.pdf

Vélez, C. I., Bustamante, M. A., Loor, B. A., & Afcha, S. M. (2020). La educación para el emprendimiento como predictor de una intención emprendedora de estudiantes universitarios. *Formación Universitaria*, *13*(2), 63–72. https://doi.org/10.4067/S0718-50062020000200063

Von Graevenitz, G., Harhoff, D., & Weber, R. (2010). The effects of entrepreneurship education. *Journal of Economic Behavior & Organization*, *76*(1), 90–112. https://doi.org/10.1016/j.jebo.2010.02.015

Warhuus, J. P., Günzel-Jensen, F., Robinson, S., & Neergaard, H. (2021). Teaming up in entrepreneurship education: Does the team formation mode matter? *International Journal of Entrepreneurial Behavior & Research*, *27*(8), 1913–1935. https://doi.org/10.1108/IJEBR-10-2020-0701

Wood, R., & Bandura, A. (1989). Social cognitive theory of organizational management. *The Academy of Management Review*, *14*(3), 361–384. https://doi.org/10.2307/258173

Yaseen, A., Saleem, M. A., Zahra, S., & Israr, M. (2018). Precursory effects on entrepreneurial behaviour in the agri-food industry. *Journal of Entrepreneurship in Emerging Economies*, *10*(1), 2–22. https://doi.org/10.1108/JEEE-08-2016-0029

Zabaleta, A. T. (2005). Agenciación humana en la teoría cognitivo social: Definición y posibilidades de aplicación. *Pensamiento Psicológico*, *1*(5), 117–123.

Zapkau, F. B., Schwens, C., & Kabst, R. (2017). The role of prior entrepreneurial exposure in the entrepreneurial process: A review and future research implications. *Journal of Small Business Management*, *55*(1), 56–86. https://doi.org/10.1111/jsbm.12232

Zhang, Y., Duysters, G., & Cloodt, M. (2014). The role of entrepreneurship education as a predictor of university students' entrepreneurial intention. *International Entrepreneurship and Management Journal*, *10*(3), 623–641. https://doi.org/10.1007/s11365-012-0246-z

Appendix

LIST OF CONCEPTS.

Concept	Definition	References
The formation of entrepreneurial intention.	Known as the entrepreneurial event model or Krueger-Shapero model, was one of the first models to predict entrepreneurial intent.	Schlaegel and Koenig (2014)
Attitude towards behaviour.	Refers to the degree to which an individual has a favourable or unfavourable evaluation or appraisal of the behaviour.	Ajzen (1991)
Subjective norms.	Refers to the perceived social pressure to perform or not a specific behaviour, measuring thus social, family, friends, and other significant people's pressure on the individual decision to start their own business.	Ajzen (1991)
Perceived behavioural control.	Refers to the perceived ease or difficulty of performing a given behaviour and assesses the self-perception of the capacities, means and opportunities of individuals to engage in entrepreneurial behaviour.	Ajzen (1991)
Self-efficacy	The belief that an individual has in his or her abilities to perform a specific task and to achieve with it the desired objective.	Conner and Sparks (2005)
Entrepreneurial education	Additionally, called business education or education in entrepreneurship. Programs that impart knowledge to improve the skills and information that is needed to take advantage of an opportunity; in addition to providing the individual with analytical skills and knowledge of the business process.	Hussain and Norashidah (2015)
Entrepreneurial intention/ entrepreneurial intent	A state of mind that directs the attention and actions of an individual towards situations of self-employment, as opposed to employed situation. Then, it refers to the intention of an individual to start a new business.	Fayolle and Gailly (2015); Krueger et al. (2000)

Source: own elaboration.