

**The Moderating Effect of Countries' Development on the Characterization of the Social Entrepreneur:
An Empirical Analysis with GEM Data**

Abstract

The objective of this paper is to analyze the moderating effect that the level of development of countries exerts on the factors that define the behavior of social entrepreneurs, distinguishing the effect produced in innovation-driven economies from that in factor/efficiency-driven economies. Our study contributes to the advancement of one of the most relevant problems detected in social entrepreneurship research: the lack of empirical quantitative studies, mainly due to the lack of harmonized and comparable international data. We perform an empirical multivariable analysis using 2015 Global Entrepreneurship Monitor data related to social entrepreneurship. The results show that both the variables that measure the values and skills to start a business and those related to the environment differentiate social from commercial entrepreneurs. In addition, our findings show how the development of the country plays a decisive moderating role, modifying the effect of the values and skills to be a social entrepreneur, the influence of gender, and even the relevance of entrepreneurs' perception of their environment.

Keywords: social entrepreneurship, countries' development, entrepreneurial culture, GEM project

JEL: L26, L31

Introduction

Social entrepreneurship (SE), as one of the research lines of the global study of the entrepreneurial phenomenon, focuses on the use of business management strategies with the aim of generating benefits with a social purpose (Kickul and Lyons 2012; Lumpkin et al. 2013). Social entrepreneurs are people who use their projects and businesses to create social value, directing their resources and benefits to achieve this end. This may mean that their activities and characteristics have their own peculiarities, but research on this differential behavior is still a field that requires more attention (Martin and Osberg 2007; Nicholls 2010; Sassmannshausen and Volkmann 2018). The environment where the social entrepreneurial activity takes place is particularly relevant (Omorede 2014; Parker and Van Praag 2010; Welter 2011). Specifically, in order to characterize more precisely the behavior of the social entrepreneur, it is necessary to consider the effect of the development of the economy where the entrepreneur develops his activity (Bacq and Janssen 2011; Bravo 2018; Diochon and Ghore 2016; Liñán and Fernández-Serrano 2014), since it may be conditioning the behavior of other factors.

The objective of this paper is to analyze more deeply the effect of environmental conditions on the characterization of social entrepreneur behavior. In particular, we focus our research on the relevance of the level of development of the country and its moderating effect on the other variables considered in the literature. In order to achieve this general objective, we divide the aim of the paper into two specific objectives.

Firstly, we analyze the behavior of social entrepreneurs, compared with commercial entrepreneurs and the non-entrepreneurial population, including different variables to study how environmental factors influence the probability of being a social entrepreneur, and what differences exist between social and commercial entrepreneurs.

Secondly, we analyze how the influence of the variables studied in our first analysis is conditioned by the level of development of the country. We distinguish the effect produced in innovation-driven economies versus factor- and efficiency-driven economies, and we analyze the moderating effect that this development exerts on other factors that define the behavior of social entrepreneurs.

The main contribution of our research is to provide empirical evidence on the moderating effect that the development of the country has on the variables that define the behavior of social entrepreneurs. Bearing this in mind, both the policies to promote entrepreneurship and their effectiveness could be conditioned by the environment in which they are applied.

In addition, our study contributes to the advancement of two of the main problems detected in social entrepreneurship research. The first is the lack of empirical studies, especially studies using quantitative analysis.

According to Sassmannshausen and Volkmann (2018), even those that do present empirical findings are predominately based on qualitative methods. The second problem is the lack of harmonized and comparable international data (Hoogendoorn 2016), which has delayed challenges to address this research gap. In our study, we perform an empirical multivariable analysis using 2015 GEM harmonized and international data related to SE. This database includes a specific section related to social entrepreneurship around the world, which allows analysis of the influence that the economic, social, and institutional environment exerts on the behavior of social entrepreneurs. The empirical analysis is carried out using qualitative response models, introducing interaction terms in the model to analyze the moderating effect of the level of development of the country.

The results obtained clearly show that both the variables that measure the values and skills to start a business and those related to the environment differentiate social entrepreneurs from the non-entrepreneurial population. In addition, we also identify that these factors contribute to explain the differences between social and commercial entrepreneurs. Even more relevant are our findings about how the development of the country plays a decisive moderating role beyond its direct influence on the propensity to be a social entrepreneur. Thus the development of the country modifies the effect of the values and skills to be a social entrepreneur, the influence of gender, and even the relevance of entrepreneurs' perception of the environment where they operate.

The remainder of the paper is structured as follows. Firstly, we review the existing literature on social entrepreneurship and the relevance of the environment and the level of development of the country. Subsequently, the empirical analysis is described, paying attention to the sample used, the estimation strategy, and the results obtained. Finally, we present the main conclusions.

Literature Review

Sassmannshausen and Volkmann (2018), examining the seven areas of institutionalization in academia, reveal that SE has left its infant state and is increasingly gaining maturity. Using scientometric methods, they provide an overview of the state of the art of research on SE, finding that most existing research, almost 60% of the papers reviewed, addresses definitions, theoretical constructs, or frameworks for SE, but the debate is still open (Austin et al. 2006; Bacq and Janssen 2011; Dees 1998; Defourny and Nyssens 2010; López-Arceiz et al. 2016; Mair and Marti 2006; Monzón and Chaves 2011).

Since Dees declared in 1998 that SE was a “rare breed”, there has been many attempts in the literature to define this concept, which covers a wide variety of activities, can be approached from different perspectives and represents different models throughout the world (Hoogendoorn 2016). The definitions range from the broadest to

narrowest (Austin et al. 2006). Many of them view SE as a process meanwhile others focus on the individual social entrepreneur (Ghalwash et al. 2017).

In this paper, following the recommendation of several studies (Hoogendoorn 2016; Lepoutre et al. 2013; Mair and Marti 2006; Short et al. 2009; Zahra et al. 2009) we use a broad definition of SE that considers individuals or organizations engaged in entrepreneurial activities with a social goal. Specifically, we adopt Austin et al. (2006) definition who consider SE as an innovative, social value creating activity that can occur within or across the non-profit, business, or government sectors. In this sense, we use the broad definition proposed in GEM project that identifies a social entrepreneur as an individual who is starting or currently leading any kind of activity, organization, or initiative that has a particularly social, environmental, or community objective (Bosma et al. 2016).

The lack of consensus in the definition justifies the challenge of developing quantitative measurement instruments in SE (Short et al. 2009) and the need to build a clear theoretical construct based on items that can be empirically observed (Sassmannshausen and Volkmann 2018). However, they also reveal an important lack of empirical studies (most of them predominately based on qualitative methods). The authors state that quantitative research on SE is very limited in extent (around 10%) and primarily focuses on measuring social impact (Mair and Sharma 2012) or assessing social venture financing (Spiess-Knafl and Achleitner 2012).

As far as the SE literature is concerned, Harding (2006) presented the first empirical UK-based study touching upon social entrepreneurs' perceptions. She concludes that social entrepreneurs' perceptions with regard to knowing other entrepreneurs, recognizing opportunity, knowing one's own skills, knowledge and abilities to start a business, and fear of failure are what make social entrepreneurs a distinct group compared to commercial entrepreneurs and the general adult population. In particular, Harding (2006) suggests that, compared to commercial entrepreneurs, social entrepreneurs are less likely to know other entrepreneurs, identify fewer opportunities in their area, have less confidence in their own skills to start a business, and fear the risk of business failure to a greater extent. Bacq et al. (2016), in their study covering Belgium and the Netherlands, reveal that social entrepreneurs are less self-confident when it comes to their entrepreneurial skills than commercial entrepreneurs, and individuals who know entrepreneurs are more likely to be social entrepreneurs than commercial entrepreneurs. Interestingly, commercial and social entrepreneurs do not seem to differ in terms of perceiving business opportunities or their fear of business failure. Compared to the entrepreneurially inactive population, entrepreneurially active individuals— whether socially or commercially—know other entrepreneurs relatively

more often, are more positive about future business opportunities and their own entrepreneurial capabilities and are relatively less negative about their fear of failure.

In addition to social entrepreneurs' perceptions, another key factor studied in the literature is the gender. While the differences between men and women have been widely discussed in commercial entrepreneurship literature, finding a broad consensus on the greater propensity of males (Langowitz and Minniti 2007; Minniti 2010; Minniti et al. 2006; Themudo 2009), there is little research analyzing them from the SE point of view (Nicolás and Rubio 2016).

There are studies that show that women decide to become entrepreneurs guided primarily by social rather than economic objectives (Liñán and Fernández-Serrano 2014; Hechavarria et al. 2017; Urbano et al. 2014), the latter being the main motivation for men. This fact may explain why women are not only the goal of many social actions, but also key players in SE (Hechavarria et al. 2012, 2017). Although the results of previous research have indicated that men are somewhat more likely than women to engage in SE (Estrin et al. 2013; Lepoutre et al. 2013), the gender gap in SE is considerably smaller than in commercial entrepreneurship (Estrin et al. 2013; Harding 2006; Levie et al. 2006; Nicolás and Rubio 2016). Levie and Hart (2011) found in their study in the UK that social entrepreneurs are less likely to be male than commercial entrepreneurs, while Van Ryzin et al. (2009) suggested that, in the USA, female social entrepreneurs might outnumber males. However, that is not the only difference found in the literature. Harding (2006) also found that the percentage of women managing an established social enterprise is marginally higher than those managing a baby enterprise, while for men there is no difference between these two activities.

Hechavarria et al. (2017) provide more compelling evidence, finding that gender and the cultural values of post-materialism significantly affect the kinds of value creation emphasized by entrepreneurs. They find that women entrepreneurs tend to emphasize social value creation goals and deemphasize economic value creation goals more than men. In addition, they establish how entrepreneurs in strong post-materialist cultures emphasize social and environmental value creation goals over economic value creation goals. Considering these two ideas, they find a cross-level interaction between gender and culture, as a post-materialistic culture amplifies the effects of gender on value creation goals.

However, beyond the characteristics of the entrepreneurs, institutional theory is an important tool to explain entrepreneurship and guide entrepreneurship research. In this field, the concern should be how the institutional context affects (promotes or inhibits) the emergence of entrepreneurs, the rate of new firm creation, and firm growth and development (Veciana and Urbano 2008). Most research in the field of entrepreneurship using

the institutional approach has focused on the formal and informal constraints. In particular, the relationship between formal institutions and SE has been extensively studied (Busenitz et al. 2000; Estrin et al. 2013; Nicolás et al. 2018; Pathak and Muralidharan 2016; Stephan et al. 2015).

In the case of social entrepreneurs, as Urbano and Alvarez (2014) demonstrate for commercial ones, a favorable regulative dimension (fewer procedures to start a business), normative dimension (higher media attention for new business), and cultural-cognitive dimension (better entrepreneurial skills, less fear of failure, and better knowing of entrepreneurs) increase the probability of being an entrepreneur. The regulative dimension consists of laws, regulations, and government policies that provide support for new businesses, reducing the risks for individuals starting a new company and facilitating entrepreneurs' efforts to acquire resources (Busenitz et al. 2000). The normative dimension measures the degree to which a country's residents admire entrepreneurial activity and value creative and innovative thinking (Busenitz et al. 2000). Culture is an important reflection of a country's informal institutions (North 1990) and it is assumed to shape the context in which entrepreneurship is conducted (Freytag and Thurik 2010; Hofstede 2003). However, although several studies have focused on the impact of commercial entrepreneurship and culture (Autio et al. 2013; Hechavarria and Reynolds 2009; Shinnar et al. 2012; Uhlaner and Thurik 2007), there has been very little attention on SE. Hechavarria (2016) investigates how societal values direct the prevalence of social and commercial entrepreneurial activity. Her findings indicate that traditional societal values negatively impact SE rates, while self-expression societal values do so positively. Finally, the cognitive dimension consists of the knowledge and skills possessed by the people in a country pertaining to establishing and operating a new business (Busenitz et al. 2000).

As Nicolás and Rubio (2016) highlight, based on studies such as Hofstede (2003), Shinnar et al. (2012), and Verheul et al. (2006), the environment is a key variable when an individual decides to create a company. Understanding the influence of the context is highly important in the field of SE (Bacq and Janssen 2011; Diochon and Ghore 2016) and requires more concerted examination (Littlewood and Holt 2018). Karanda and Toledano (2012), studying the case of Africa, reveal that even the term 'social' does not necessarily have the same meaning in different contexts, which is why Ghalwash et al. (2017) advise that studies that draw results within the developed country context may be inappropriate and thus ineffective in the developing country context.

Different theories have been proposed as a potential explanation for the levels of SE across countries (Hoogendoorn 2016), considering the level of economic development as a key factor.

Nissan et al. (2012), based on post-materialism theories which relate changes in values with economic development, show that the higher the level of economic development, the greater the non-profit activity.

Hoogendoorn (2016) also reveal that SE is a phenomenon strongly driven by a country's level of wealth and suggest an inverted U-shape, because although the demand for SE activities may be lower in wealthier countries, the prevalence of SE is positively affected by the level of economic development. These results differ from existing evidence for a U-shaped relationship between the level of economic development and commercial entrepreneurship (Carree et al. 2007; Wennekers et al. 2010).

Lepoutre et al. (2013) developed a methodology to measure population-based social entrepreneurship activity (SEA) prevalence rates, based on the Global Entrepreneurship Monitor (GEM). They found that countries with higher rates of traditional entrepreneurial activity also tend to have higher rates of SE. Furthermore, despite the lower levels of SEA, variations in prevalence can nevertheless be observed. While the range of SEA is similar for all economic development stages (factor-driven, efficiency-driven, and innovation-driven countries), the average SEA rate increases slightly with economic development. These results could indicate that the opportunity cost of SEA is higher in developing countries (Lepoutre et al. 2013).

However, the influence of the level of economic development on SE could have been indirect, because it may be conditioning the relevance of other factors. Nicolás et al. (2018), testing their model in different subsamples, find that the influence of social entrepreneurs' perceptions appears not to be the same in all countries, and there could be differences according to the country's level of development. Although they do not test the magnitude and significance of those differences, their results are a first empirical approach to study this issue. In addition, the level of development of the country could be influencing female entrepreneurial activity. Vuorio (2017) finds evidence that suggests the likelihood of an entrepreneur being social is not influenced by gender. However, this absence of relationship could be hiding a differential effect in countries with different levels of development. Nicolás and Rubio (2016) found that as the level of development decreases, women create a larger number of enterprises, both social and commercial.

Empirical Analysis

Sample

The empirical analysis is carried out using data from the Adult Population Survey (APS) of the Global Entrepreneurship Monitor (GEM) and from the World Value Survey (WVS).

GEM is a global project carried out by a research consortium dedicated to understanding the relationship between entrepreneurship and national economic development. Since 1999, GEM reports have been a key source of comparable data across a large variety of countries on attitudes toward entrepreneurship, start-up and established business activities, and aspirations of entrepreneurs for their businesses. Each year, GEM surveys representative

population samples of at least 2,000 randomly selected adults in each participating country. This study uses data from the 2015 survey, when a specific section related to social entrepreneurship was included. In that year, the survey provided specific information about social entrepreneurs in addition to the information about commercial entrepreneurs included every year. The World Value Survey (WVS) provides a comprehensive measurement of different areas of human concern. The WVS methodology consists of the administration of detailed face-to-face interviews of nationally representative samples. We use data from the Wave 6 (2011-2014) (Inglehart et al., 2014).

The use of this database has two advantages: on the one hand, it allows comparing the characteristics that differentiate the social from the commercial entrepreneurs and from the non-entrepreneurial population. On the other hand, the availability of a database at an international level allows us to analyze the influence that the economic, social, and institutional environment exerts on the behavior of social entrepreneurs.

In order to identify the social entrepreneurs, we follow the proposal made in the 2015 special issue of the GEM report (Bosma et al. 2016). They provide a specific classification for social entrepreneurs, which is defined as “Social Entrepreneurial Activity (SEA)”. The GEM methodology considers individuals as social entrepreneurs when they are “starting or currently leading any kind of activity, organization or initiative that has a particularly social, environmental or community objective”. Considering this definition, we identify as commercial entrepreneurs the rest of the entrepreneurial population.

Table 1 shows the sample distribution according to the degree of economic development of the country. Applying the methodology of the World Economic Forum used in the GEM project, we divide the countries into two different groups. On the one hand, we have the most developed countries (innovation-driven economies), and on the other hand, the countries with lower levels of development (factor-/efficiency-driven economies).

However, the number of countries with data available is not the same for all the variables used. On one hand, the GEM survey includes a section in the questionnaire about societal values and entrepreneurship environment that is optional, so not all countries were asked about it. On the other hand, the World Value Survey (WVS) includes less countries than the GEM database. Considering these limitations, Panel A presents the whole sample, Panel B includes only the countries that answered the specific section in GEM survey¹ and Panel C includes the countries with information in the WVS.

¹ In the appendix, we include a detailed list of all the countries included in the analysis. Most of the countries that did not include the optional section in the questionnaire about societal values and entrepreneurship environment were innovation driven economies. Therefore, by using both subsamples in the estimations we control that our results are not biased by the countries considered.

Insert Table 1 about here

The whole sample (Panel A) contains information from 59 different countries, including 143,412 observations (9,742 social entrepreneurs, 15,960 commercial entrepreneurs and 117, 660 non-entrepreneurs). That is, almost 20 percent of the total sample is made up of people involved in some type of entrepreneurial activity, of whom almost one third are involved in social activities. There are 62,827 individuals from 23 countries with innovation-driven economies (more than 43 percent of the sample). However, that proportion is reduced if we look at the entrepreneurial population. Commercial entrepreneurs represent less than 25 percent of the sample, this percentage rising to 34.1 percent in the case of social entrepreneurs. However, this is still far from the 47.2 percent represented by the non-entrepreneurial population of innovation-driven economies. If we consider the countries that answered the societal values and entrepreneurship environment section (Panel B), the sample contains information from 46 different countries (14 innovation-driven economies). However, we still have 91,250 observations (6,470 social entrepreneurs, 11,308 commercial entrepreneurs, and 73,472 non-entrepreneurs). Finally, considering the countries with cultural values (Panel C), the sample contains information from only 25 different countries (6 innovation-driven economies). We still have 60,684 observations (4,008 social entrepreneurs, 7,111 commercial entrepreneurs, and 49,565 non-entrepreneurs), but the representativeness of innovation-driven economies is reduced as long as we consider more information. That requires to take the results using these restricted samples carefully, especially in the case of Panel C.

If we look at the composition of the sample by gender, Table 2 shows the distribution in the whole sample (Panel A) and in the sub-samples with societal values information (Panel B) and with cultural values (Panel C).

Insert Table 2 about here

If we look at the distribution by gender, we can see that among the non-entrepreneurial population there are no differences between males and females. However, in the case of the entrepreneurial population, the sample shows a higher proportion of men (in the case of both social and commercial entrepreneurs). In this case, the distribution by gender is similar in all the samples considered, so we do not have different levels of representativeness.

Estimation Strategy

The empirical analysis is carried out applying qualitative response models for discrete endogenous variables. Specifically, we propose a logit model where the dependent variable is the probability of being a social entrepreneur (SENTREP). The general specification of the model is:

$$LOG \left(\frac{P(SENTREP)}{P(NO SENTREP)} \right) = \beta_0 + \beta_j SPAE_i + \beta_k SVEE_i + \beta_l IDE_i + \beta_m GENDER_i + \beta_n X_i + v_i$$

SPAE is a set of variables related to self-perception about entrepreneurship, including values, perceptions, and entrepreneurial skills, which are determining factors in making the decision to become an entrepreneur (Arenius and Minniti 2005). *SVEE* is a set of variables about individuals' perception of societal values and the entrepreneurship environment, reflecting how people perceive the environment influences their entrepreneurial behavior. *IDE* is a variable that identifies innovation-driven economies. *GENDER* is a variable that differentiates between men and women. Finally, *X* is a set of control variables to consider the influence of personal characteristics (age and education level) and country's cultural values. Table 3 provides the definitions and references for all variables considered in our study.

Insert Table 3 about here

As we have indicated in the description of the sample, the availability of the variables is not homogeneous, so we propose different models to take advantage of the best possible data availability.

Considering the whole sample, the model follows this specification:

$$LOG \left(\frac{P(SENTREP)}{P(NO SENTREP)} \right) = \beta_0 + \beta_1 SUSKILL_i + \beta_2 KNOWENT_i + \beta_3 OPPORT_i + \beta_4 FEARFAIL_i + \beta_5 CULSUP_i + \beta_6 EASYSTART_i + \beta_7 NBSOCENT_i + \beta_8 IDE_i + \beta_9 GENDER_i + \sum_{k=1}^3 \gamma_k AGE_i + \sum_{z=1}^3 \gamma_z EDUC_i + v_i \quad (1)$$

The dependent variable is a dummy variable that identifies those individuals classified as social entrepreneurs (*SENTREP*). We calculate this variable in two alternative ways. Firstly, we propose a dummy variable *SENTREPI*, which takes the value 1 for social entrepreneurs and zero for those who are not entrepreneurs. Secondly, we propose a variable *SENTREP2*, which takes the value 1 for social entrepreneurs and zero for commercial entrepreneurs.

The independent variables included are grouped in different categories, being all of them constructed as dummy variables.

In the set of variables related to values, perceptions, and entrepreneurial skills, we have four variables. *SUSKILL* takes the value 1 for those who think that they have the knowledge, experience, and skills to start a

business and zero otherwise. *KNOWENT* takes the value 1 for those who have had personal contact with someone who has started a business and zero otherwise. *OPPORT* takes the value 1 for those who perceive opportunities to start a business and zero otherwise. Finally, *FEARFAIL* takes the value 1 when the possibility of failure discourages them from starting a business and zero otherwise.

Regarding the set of variables related to societal values and the entrepreneurship environment, we include three dummy variables. *CULSUP* is calculated according to the cultural support for entrepreneurship index developed by the GEM², taking the value 1 for those who consider that the entrepreneurial culture is high in their country and zero otherwise. *EASYSTART* takes the value 1 for those who consider that it is easy to open a new business in their country and zero otherwise. Finally, *NBSOCENT* takes the value 1 for those who consider that it is common to find businesses focused on the solution of social problems in their country and zero otherwise.

The dummy variable *IDE* is included, which takes the value 1 in the case of innovation-driven economies and zero otherwise. In addition, a variable related to gender is also included in the model (*GENDER*), a dummy variable that takes the value 1 in the case of women and zero in the case of men.

Finally, the model includes a set of control variables, related with the personal entrepreneurs' characteristics. Several researchers have shown the importance of sociodemographic factors (Arenius and Minniti 2005; Langowitz and Minniti 2007). Thus, we have included two control variables, age and the education level, to ensure that our results are not biased due to the sociodemographic characteristics of the individuals.

Regarding age, as occurs with commercial entrepreneurs (Arenius and Minniti 2005; Langowitz and Minniti 2007), empirical evidence indicates that younger individuals may be more inclined to engage in SE (Harding 2006; Lepoutre et al. 2013; Nga and Shamuganathan 2010; Stephan et al. 2015). More recently, Brieger et al (2020) confirm that there is a U-shaped relationship between an entrepreneur's age and his/her social value creation. In order to control for this factor (*AGE*), we identify three different groups using dummy variables: those under 34, those between 34 and 54, and those over 54 years old.

Regarding education, it has been considered a relevant factor that influences the propensity and type of entrepreneurial activity (Bosma 2013; Estrin et al. 2013, 2016; Pathak and Muralidharan 2016). Levie et al. (2006) established that both commercial and social entrepreneurship rise with education, but they did not discuss the

² Within the framework of the GEM methodology, this cultural support for entrepreneurship index is developed considering indicators related to the equity in living conditions, if being an entrepreneur can be considered a good professional option, if it is perceived that socio-economic status of entrepreneurs is usually high in the country and, finally, the role of the media in the dissemination of entrepreneurship. This index allows to know the impact of the culture of support for entrepreneurship in a given economy.

differences between them. Harding (2006) and Levie and Hart (2011) found that people are more likely to be social than commercial entrepreneurs with increasing levels of education, findings recently confirmed by Vuorio (2017), who states that education plays an important role in enhancing the likelihood of an individual having a sustainable entrepreneurial goal rather than a commercial one. In order to control for education level (*EDUC*), we also identify three groups, depending on whether their level is primary, secondary, or higher education.

We estimate the logit model using odds ratios, which allow a more direct and intuitive interpretation when the independent variables are dichotomous. The odds ratio of a logistic regression parameter estimate is obtained by exponentiating the coefficient. In this way, the analyzed effect is on a multiplicative scale—that is, the odds ratios of the dichotomous variables show how much more likely it is to be a social entrepreneur when the independent variable takes the value 1 with respect to when it takes a zero value (when the odds ratio takes values greater than 1, the influence on the probability is positive; when the values are less than 1, the influence is negative).

Based on this first model, we analyze the moderating effect that the level of development of the country has on the effect of the variables that characterize the social entrepreneur. In order to test this moderating effect, we introduce interaction terms in the general model, which allows us to analyze the influence of each of the variables in innovation-driven economies and in the factor-/efficiency-driven economies. In this case, we analyze only the behavior of the entrepreneurial population—that is, we focus on the differences between social entrepreneurs and commercial entrepreneurs (*SENTREP2*). The model takes the following form:

$$\begin{aligned} \text{LOG} \left(\frac{P(\text{SENTREP2})}{P(\text{NO SENTREP2})} \right) = & \beta_0 + (\beta_1 + \varphi_1 IDE) \text{SUSKILL}_i + (\beta_2 + \varphi_2 IDE) \text{KNOWENT}_i + (\beta_3 + \\ & \varphi_3 IDE) \text{OPPORT}_i + (\beta_4 + \varphi_4 IDE) \text{FEARFAIL}_i + (\beta_5 + \varphi_5 IDE) \text{CULSUP}_i + (\beta_6 + \varphi_6 IDE) \text{EASYSTART}_i + \\ & (\beta_7 + \varphi_7 IDE) \text{NBSOCENT}_i + \beta_8 IDE_i + (\beta_9 + \varphi_9 IDE) \text{GENDER}_i + \sum_{k=1}^3 \gamma_k \text{AGE}_i + \sum_{z=1}^3 \gamma_z \text{EDUC}_i + v_i \quad (2) \end{aligned}$$

The interpretation of the interaction terms in non-linear models cannot be performed directly with the estimated coefficients displayed in the model output, which adds complexity to the empirical analysis (Norton et al. 2004). In the case of estimates based on odds ratios, the coefficient associated with the interaction variable is a ratio of the two odds ratios associated with the variables that are interacting, which does not allow us to interpret the effect using that coefficient directly. The interpretation must be calculated separately from a combination of the main effects and the interaction coefficients (Hilbe, 2009).

However, the inclusion of interactions allows obtaining results that are more precise when we need to identify the different influence in two groups of individuals. In our case, the interaction terms improve the capacity of the model to characterize social entrepreneurs according to the degree of development of their country.

Following Buis (2010) and Hilbe (2009), we calculate the marginal effect in terms of odds ratios, applying the following procedure: firstly, for each group of countries defined in the interaction variable (*IDE*), we compute the effect on the probability of being a social entrepreneur when the variable analyzed takes the values one and zero. Subsequently, we compute the odds ratios as the ratios between these two individual effects, which allows us to analyze the influence of each variable, differentiating its effect for each group of countries.

Finally, as a robustness test, we propose an additional model to check if our results are robust to differences in country's cultural values. The model takes the following form:

$$\begin{aligned} \text{LOG} \left(\frac{P(\text{SENTREP2})}{P(\text{NO SENTREP2})} \right) = & \beta_0 + (\beta_1 + \varphi_1 \text{IDE}) \text{SUSKILL}_i + (\beta_2 + \varphi_2 \text{IDE}) \text{KNOWENT}_i + (\beta_3 + \\ & \varphi_3 \text{IDE}) \text{OPPORT}_i + (\beta_4 + \varphi_4 \text{IDE}) \text{FEARFAIL}_i + (\beta_5 + \varphi_5 \text{IDE}) \text{CULSUP}_i + (\beta_6 + \varphi_6 \text{IDE}) \text{EASYSTART}_i + \\ & (\beta_7 + \varphi_7 \text{IDE}) \text{NBSOCENT}_i + \beta_8 \text{IDE}_i + (\beta_9 + \varphi_9 \text{IDE}) \text{GENDER}_i + \sum_{k=1}^3 \gamma_k \text{AGE}_i + \sum_{z=1}^3 \gamma_z \text{EDUC}_i + \\ & \beta_{10} \text{MATER} + \beta_{11} \text{SECVAL} + v_i \quad (3) \end{aligned}$$

Regarding the country's cultural values, some recent researches have shown the importance of these characteristics in the behavior of social entrepreneurs (Estrin et al. 2016; Hechavarria 2016), considering that cultural values impact the prevalence rates of social and commercial entrepreneurship. To control for these effects, we include two variables, based on WVS database: *MATER* is a post-materialism index based on the aggregate frequencies for post-materialism (Hechavarria et al. 2017; Stephan et al. 2015). *SECVAL* is an index that captures cross-cultural variations between traditional values versus secular-rational values (Estrin et al. 2016; Hechavarria 2016).

To confirm that multicollinearity does not actually bias our results, we calculate the variance inflation factors (VIF) for each group of independent variables included in the models, as shown in table 4.

 Insert Table 4 about here

The value of the VIF indicators should be less than 10, since a value of 1 is a characteristic of an orthogonal system and a value of less than 10 would indicate a non-collinear or stable system (Chatterjee and Hadi 2012). The VIF values are significantly smaller than 10 (none of our results show a VIF value greater than 2.00), being the mean VIF always under 1.47. These results confirm that our analyses are robust to multicollinearity problems, and that we can considered that the variables included in each category are independent.

Results

Analysis I: Determinants of the probability of being a social entrepreneur

The results obtained from the estimation of model (1) are presented in Table 5. We present two alternative specifications using the two alternative definitions of the dependent variable proposed. Model (1a) analyses the factors that influence the probability of being a social entrepreneur with respect to the non-entrepreneurial population and model (1b) focuses only on the entrepreneurial population, analyzing the differential behavior of the social entrepreneur versus the commercial entrepreneur. This second model allow us to test if the variables studied affect the propensity to be an entrepreneur in the case of social and commercial entrepreneurs equally, and to test if the differences found are statistically significant. The two specifications of model (1) have been estimated using the whole sample (models 1a.1, 1b.1) and the subsample including the countries with information on the variables related to societal values and the entrepreneurial environment (models 1a.2, 1b.2).

Insert Table 5 about here

First, we present the results of the four variables related to values, perceptions, and entrepreneurial aptitudes.

We can observe that perceiving oneself as having the knowledge, experience, and skills to start a business (*SUSKILL*) positively influences the probability of being a social entrepreneur (model 1a). Specifically, the probability of being a social entrepreneur is around two times higher among those who have knowledge and skills (2,114 times in model 1a.1 and 2,039 times in model 1a.2). However, the results show significant differences between social and commercial entrepreneurs, since the effect show a much lower relative importance for social entrepreneurs. If we look only at the entrepreneurial population (model 1b), self-perception of having knowledge and skills greatly reduces the probability that their activity is social, since the odds of being a social entrepreneur are less than half those of being a commercial entrepreneur (0,467 in model 1b.1 and 0,493 in model 1b.2).

If we consider the second variable, having an entrepreneurial social network (*KNOWENT*), we observe that knowing other entrepreneurs experience and knowledge makes the probability of being social entrepreneur about two times higher (model 1a). Furthermore, we observe a difference between social and commercial entrepreneurs when we analyze the whole sample. The probability of being a social entrepreneur is 10 percent lower if they possess an entrepreneurial social network (odds ratio of 0.895 in model 1b.1). However, when we

estimate the model using the restricted sample (model 1b.2), we do not find a differential effect in terms of social versus commercial entrepreneurs, so this difference should be interpreted with caution.

A positive effect is also observed in the case of those who perceive opportunities to start a new business (*OPPORT*), with a probability of being a social entrepreneur around 1.7 times greater (model 1a). If we focus only on the behavior of entrepreneurs, we do not find a differential effect in terms of social versus commercial entrepreneurs, as observed in model 1b, where the odd ratios are not statistically significant in any of the models considered.

On the other hand, the fear of failure as a disincentive to start a business (*FEARFAIL*) reduces the likelihood of being a social entrepreneur, although again the effect presents significant differences between social and commercial entrepreneurs. In social entrepreneurs, the disincentive of fear of failure has a negative influence on the probability of start a social enterprise (0.807 and 0.784 in model 1a). However, among entrepreneurs the fear of failure makes the probability of being a social entrepreneur higher (model 1b), although the difference is not particularly high (between 11.8 percent and 6.9 percent, depending on the model considered).

The second set of variables is related to perception of the entrepreneurial environment. In this case, we only estimate the second specification of the model, using the sample of countries for which this information is available. First, we observe that the cultural support for entrepreneurship index (*CULSUP*) has no significant influence on any of the estimated models. However, in the case of perception of the ease of starting a new business (*EASYSTART*), we do find some differences. While this perception does not exert a significant influence for social entrepreneurs (model 1a), considering only the entrepreneurial population the probability of being a social entrepreneur is more than 10 percent lower when they perceive that it is easy to start a new business in their country (model 1b). In this case, these conditions appear to establish a stronger incentive to be more focused on commercial activities. Finally, we observe that those who consider that it is common to find businesses focused on resolving social problems in their country (*NBSOCENT*) have a greater probability of being social entrepreneurs (model 1a). However, the effect is of small magnitude (only 5.6 percent) and does shows no significant differences when we compare both types of entrepreneur (model 1b).

In addition, the degree of development of the country (*IDE*) exerts a negative influence on the probability of being a social entrepreneur, being that probability lower in countries with innovation-driven economies (model 1a). However, considering only the entrepreneurial population (model 1b), we can see that this negative effect is less relevant for social entrepreneurs. In this case, the probability that an entrepreneur focuses on social aspects is greater in more developed countries (1.384 or 1.118 times). Regarding *GENDER*, we observe that women are

more than 10 percent less likely to start a social enterprise (model 1a), but we do not find differences between social and commercial entrepreneurs.

Finally, regarding the control variables, we observe that age is not a variable that affects social entrepreneurs (model 1a). As we have three groups, we need to consider one of them as reference group, being in this case those under 34. However, when analyzing the entrepreneurial population (model 1b), we see that the probability of an entrepreneur being focused on social aspects is around 6 percent higher for those between 34 and 54. This difference is much higher in the case of those over 54 years old, where the probability of being social is two times higher. These differences show how the age is not affecting the propensity to start a social enterprise, while for commercial entrepreneurs the probability of starting a business reduces as people get older.

In the case of the level of education we observe different effects, being the reference group those who have a maximum level of primary school education. In this case, those with a secondary education level are more than 10 percent less likely to be social entrepreneurs (0.877 and 0.881 in model 1a). This relationship is the opposite in the case of higher education, which exerts a positive influence for social entrepreneurs. If we consider the entrepreneurial population (model 1b), we observe that those with secondary education are more focused on commercial entrepreneurship, but in the case of those with higher education there is a significantly greater propensity toward social entrepreneurship (around 20 percent higher).

Analysis II: Moderating effect of countries' development

This first analysis highlights the different behavior of social and commercial entrepreneurs and how among the key factors that explain this difference is important to consider the environment where the entrepreneurial activity is developed. Among the environment factors, we highlight the fundamental role played by the degree of development of the country. However, beyond its direct influence on the behavior of the social entrepreneur, the level of development may condition the influence exerted by the other factors. To analyze this moderating effect of the country's development for the entrepreneurial population, we estimate model (2), including the variable that identifies innovation-driven economies (*IDE*) interacted with the other variables. Table 6 presents the results of this analysis, where we can observe the odds ratio of each variable for each type of country, and a statistical test to test if the odds ratios present significant differences between the two groups of countries.

Insert Table 6 about here

Table 6 shows how the development of the country significantly affects the way in which the other factors explain the differential behavior of social and commercial entrepreneurs. In fact, except in the case of the perception of opportunities to start a business (*OPPORT*) and the facilities to open a new business (*EASYSTART*), the influence of the other variables is modified by the moderating effect of the country's development, showing statistically significant differences between both types of country.

In the case of individuals who perceive themselves as having the knowledge and skills to start a business (*SUSKILL*), in model (1b) we saw that this exerted a negative influence on the probability of being a social entrepreneur versus a commercial entrepreneur. When considering the moderating effect of the development of the country, we see how this negative effect is maintained, but with a different magnitude. Thus, in innovation-driven economies, the probability of entrepreneurs focusing on social issues is more than 60 percent lower among those with the knowledge and skills to start a business (odd ratios of 0.328 or 0.350). However, this negative effect is significantly less important (with a difference under 50 percent) in the case of countries focused on factors or efficiency (odds ratios of 0.511 or 0.527).

The influence of having an entrepreneurial social network (*KNOWENT*) did not show conclusive results among the entrepreneurial population in model (1b), because we only observe differences using the whole sample. However, we observe how strong differential behavior does appear when considering the development of the country. Specifically, we observe that in innovation-driven economies, there is a lower probability of being a social entrepreneur among those who have had previous contact with other entrepreneurs and who are more focused on commercial entrepreneurship, whereas this difference is much lower in the case of countries with a lower degree of development.

Fear of failure (*FEARFAIL*) in model (1b) showed a lower negative effect for social entrepreneurs, so there is a minor disincentive for them to start a business. When we consider the moderating effect of the development of the country, that difference is amplified. Thus, in innovation-driven economies, entrepreneurs are around 50 percent more likely to be social when they are afraid of failure, so they are less concerned about the lack of success when they consider starting new projects. However, in countries with less development, this effect has a smaller magnitude (under 20 percent), although it remains favorable for social entrepreneurship.

If we look at the cultural support for entrepreneurship index (*CULSUP*), the moderating effect is even more relevant, since the absence of significant influence observed in model (1b) was hiding the asymmetric effect that occurs when we consider the development of the country. Thus, in the case of innovation-driven economies, a greater value in the cultural support for entrepreneurship index means that there is an almost 20 percent greater

propensity of entrepreneurs toward social activities. However, in the case of less developed economies, focused on factors or efficiency, greater value in the cultural support for entrepreneurship index reduces the likelihood that entrepreneurs are social (almost 12 percent less), those in this environment being more likely to be focused on non-social activities.

We find similar results in the case of entrepreneurs who consider it is common to find businesses focused on the solution of social problems in their country (*NBSOCENT*), where the inconclusive results of model (1b) may be due to the differential effects caused by the development of the country. In this case, in innovation-driven economies, there is an almost 20 percent greater probability of being social entrepreneurs when they perceive an environment in which social enterprises are more frequent. However, in economies focused on factors or efficiency, this differential behavior among entrepreneurs disappears, since the odds ratio is not statistically significant.

Finally, in the case of *GENDER*, we observe a particularly relevant influence, since the absence of differences between social and commercial entrepreneurs observed in model (1b) again obscured the differential effect that takes place when we consider the development of the country. Thus, in innovation-driven economies, women show an almost 40 percent greater propensity toward social entrepreneurship, while in countries focused on factors or efficiency, the effect is the opposite, and the propensity of women is lower (almost 8 percent less).

Analysis III: Robustness tests to influence of cultural values

Finally, we present in table 7 the results of model 3, where we consider the influence of cultural values. As we saw in table 2, the sample in this case is reduced to less than a half, with only 25 countries of 59 (with lower representation of innovation-driven economies (24% instead of 39%). However, the relevance of these factors demands an analysis considering their effect, although we have to keep in mind this sample limitations when we analyze the results.

 Insert Table 7 about here

The results are similar to those presented in table 6, although we find differences in some variables.

In the set of variables related to values, perceptions, and entrepreneurial aptitudes, the results of the variable of having the knowledge, experience, and skills to start a business (*SUSKILL*) are similar, since in innovation-driven economies the probability of entrepreneurs focusing on social issues is lower. The same happens with the fear of failure (*FEARFAIL*), in innovation-driven economies social entrepreneurs are less concerned than

commercial ones. The only difference in this set of variables is in the influence of having an entrepreneurial social network (*KNOWENT*), because do not show differences under different types of economies, as it did in the table 6.

In the set of variables related to perception of the entrepreneurial environment the results are quite similar too. In the case of the cultural support for entrepreneurship index (*CULSUP*), in the case of innovation-driven economies a greater value of the index means greater propensity of entrepreneurs toward social activities, but in the case of factor/efficiency driven economies there is no influence. In the case of the other two variables there are no differences among the economies. This result was what we found for *EASYSTART*, and in the case of in the case of entrepreneurs who consider it is common to find businesses focused on the solution of social problems in their country (*NBSOCENT*), the differential behavior found before disappears.

Finally, in the case of *GENDER*, we observe that the results are similar in this case. In innovation-driven economies women have greater propensity toward social entrepreneurship, but in factor/efficiency driven economies the propensity of women is lower.

Regarding control variables, we observe the same pattern in the case of the age, that is, the probability of an entrepreneur being focused on social aspects is higher for older people. In the case of the level of education, the results show that the higher the level of education, the greater the propensity toward social entrepreneurship. The difference is that in this model, when we include cultural values, those with secondary education are more focused to social entrepreneurship than young people.

Regarding the cultural values variables, in the case of the variable about countries' level of materialism (*MATER*), we do not find that entrepreneurs in post-materialist cultures are more oriented to social entrepreneurship, since the variable is not statistically significant, result similar of that found by Estrin et al. (2016). In the case of the variable related to traditional versus secular-rational value (*SECVAL*), we find that in secular-rational societies there is considerably higher rates of social entrepreneurship compared with commercial entrepreneurship. This result is in line of that found by Hechavarria (2016).

Conclusions

When we want to understand the behavior of social entrepreneurs, it is necessary to consider the environment where the social entrepreneurial activity takes place (Bacq and Janssen 2011; Fernández-Laviada et al. 2020). Moreover, the characterization of the behavior of the social entrepreneur requires consideration of the

effect of the development of the country, because it may condition the relevance that other factors have for this behavior (Nicolás et al. 2018).

The most relevant findings of this paper show, according to previous literature, how the behavior of social entrepreneurs presents significant differences with respect to commercial entrepreneurs (Bacq et al 2016; Estrin et. al 2013, 2016; Hechavarria 2016) and they also show that the level of development of the country plays an important role in explaining these differences. On the one hand, the level of development affects the probability of being a social entrepreneur. Our results confirm the previous works, since the probability of starting a business is lower in innovation-driven economies, but this negative effect is less relevant in the case of social entrepreneurs (Fernández-Laviada et al. 2020; Nicolas et al 2018). So, when we consider the entrepreneurial population, the probability of being a social entrepreneur is higher in innovation-driven economies. On the other hand, our results go beyond by demonstrating that the country's development exerts a moderating effect that substantially modifies the influence of other factors. When this influence is not controlled, the results can present relevant biases which can lead to inaccurate conclusions. Our results show that when we control for this moderating effect, we can find different relevant effects.

Firstly, we find that the magnitude of relationships changes, as in the case of having the knowledge, experience, and skills to start a business and the fear of failure. As Bacq et al. (2016), Estrin et al. (2016) or Pathak and Muralidharan (2016), we found that self-perception of having knowledge and skills reduces the probability of an entrepreneur being social, but what we found is that this negative effect is significantly less important in non-innovation driven economies. In the case of the fear of failure, the probability that an entrepreneur is social is higher, as Bacq et al. (2016) and Estrin et al. (2016) already demonstrated. However, we found that social entrepreneurs in innovation-driven economies are less concerned about the lack of success, so in this type of economy, this disincentive does not imply a significant impediment to the development of social entrepreneurship.

Secondly, relationships that seemed not to be significant appear. This is seen in relation to having an entrepreneurial social network (Bacq et al. 2016; Estrin et al. 2016, Pathak and Muralidharan 2016); in the cultural support for entrepreneurship index (Hechavarria 2016); where it is common to find businesses focused on the solution of social issues (Fernández-Laviada et al. 2020); and in relation to gender (Bacq et al. 2016; Estrin et al. 2013, 2016; Levie and Hart 2011; Nicolás and Rubio, 2016; Pathak and Muralidharan 2016). In some of these cases, we find that even the sign of the relationship changes, so these factors exert a different effect depending the level of development of the country.

The results confirm what is stated in the literature but, when we introduce the moderating effect, we can add that in innovation driven economies (1) there is a lower probability of being a social entrepreneur among those who knows other entrepreneurs, (2) a greater value in the cultural support for entrepreneurship means greater propensity towards social entrepreneurship, (3) his propensity is also higher when entrepreneurs perceive a social enterprise sector developed and finally (4) women show greater propensity towards social entrepreneurship.

Meanwhile, in factors or efficiency driven economies, (1) although there is also a lower probability of being social entrepreneur among those who knows other entrepreneurs, the difference with commercial entrepreneurs is smaller, (2) a greater value in the cultural support for entrepreneurship reduces the likelihood of being social entrepreneur, (3) the development of the social enterprise sector is not significant and (4) the propensity towards social entrepreneurship of women is lower.

This moderating effect has very important implications, especially for policymakers. Our results show that in the case of innovation-driven economies, the effects appear to be amplified, both positively and negatively. This means that the design and implementation of policies to support social entrepreneurship must consider the differential effect depending on the country where they are applied. In fact, these results can shed light on the difficulty of applying successful programs in other countries, where they do not always achieve the expected success. Our proposal shows that these differences can be due not only to the effectiveness of the policies, but the way in which these policies affect individuals and the perception that they have of their relevance also play a fundamental role.

Finally, this study is not without limitations, some of them related to the sample used. In this regard, the use of GEM data has many advantages, but also presents some limitations. The GEM is based on surveys of individuals, so it includes personal perceptions on the issues surveyed. This is especially relevant since there is no consensus about what is understood by social entrepreneurship, so the perception in each country may be different. In addition, as we show in the description of the sample, the number of countries analyzed is conditioned by their participation in the project. The section in the questionnaire about societal values and the entrepreneurship environment is optional: not all countries were asked about it, and most of the countries that did not do it are among the more developed ones. Using two subsamples allowed us to control this effect. As we saw in the results, the estimations using both subsamples are robust, since the sign of the coefficients was the same. The only effect we observed was that the differences were slightly bigger when we use the whole sample: this effect is what we expected, since the inclusion of most developed countries generates greater differences between the two groups of countries analyzed.

Compliance with ethical standards:

Conflict of Interest: The authors declare that they have no conflict of interest

Research involving human participants and/or animals: This article does not contain any studies with human participants or animals performed by any of the authors.

Informed consent: Informed consent was obtained from all individual participants included in the study (the database used in the paper is the GEM APS).

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TABLES

Table 1: Sample according the level of development of countries

PANEL A					
Development of countries	Innovation Driven	%	Factor/ Efficiency Driven	%	Total
N° countries	23	39.0%	36	61.0%	59
Non-entrepreneurs	55 516	47.2%	62 144	52.8%	117 660
Commercial entrepreneurs	3 972	24.9%	11 988	75.1%	15 960
Social entrepreneurs	3 339	34.1%	6 453	65.9%	9 792
Total	62 827	43.8%	80 585	56.2%	143 412
PANEL B					
Development of countries	Innovation Driven	%	Factor/ Efficiency Driven	%	Total
N° countries	14	30.4%	32	69.6%	46
Non-entrepreneurs	25 919	35.3%	47 553	64.7%	73 472
Commercial entrepreneurs	2 217	19.6%	9 091	80.4%	11 308
Social entrepreneurs	1 455	22.5%	5 015	77.5%	6 470
Total	29 591	32.4%	61 659	67.6%	91 250
PANEL C					
Development of countries	Innovation Driven	%	Factor/ Efficiency Driven	%	Total
N° countries	6	24.0%	19	76.0%	25
Non-entrepreneurs	18 050	36.4%	31 515	63.6%	49 565
Commercial entrepreneurs	1 483	20.9%	5 628	79.1%	7 111
Social entrepreneurs	751	18.7%	3 257	81.3%	4 008
Total	20 284	33.4%	40 400	66.6%	60 684

Table 2: Sample composition by gender

Panel A					
	Male	%	Female	%	Total
Non-entrepreneurs	57 597	49.0%	60 063	51.0%	117 660
Commercial entrepreneurs	8 998	56.4%	6 962	43.6%	15 960
Social entrepreneurs	5 424	55.4%	4 368	44.6%	9 792
Total	72 019	50.2%	71 393	49.8%	143 412
Panel B					
	Male	%	Female	%	Total
Non-entrepreneurs	37 019	50.4%	36 453	49.6%	73 472
Commercial entrepreneurs	6 357	56.2%	4 951	43.8%	11 308
Social entrepreneurs	3 653	56.5%	2 817	43.5%	6 470
Total	47 029	51.5%	44 221	48.5%	91 250
Panel C					
	Male	%	Female	%	Total
Non-entrepreneurs	25 088	50.6%	24 477	49.4%	49 565
Commercial entrepreneurs	3 989	56.1%	3 122	43.9%	7 111
Social entrepreneurs	2 266	56.5%	1 742	43.5%	4 008
Total	31 343	51.6%	29 341	48.4%	60 684

Table 3: Definitions of variables and references

Variable	Nomenclature	Definition	Papers
DEPENDENT VARIABLE	SENTREP	Probability of being a social entrepreneur	Bacq et al. (2016); Chen et al. (2018); Estrin et al. (2013, 2016); Hechavarria (2016); Hechavarria et al. (2017); Levie and Hart (2011); Muralidharan and Pathak (2018); Nicolás and Rubio (2012, 2016); Nicolás et al. (2018); Pathak and Muralidharan (2016); Stephan et al. (2015); Witte (2013)
	SENTREP1	Social entrepreneurs vs. Not entrepreneurs.	
	SENTREP2	Social entrepreneurs vs. Commercial entrepreneurs.	
SELF-PERCEPTION ABOUT ENTREPRENEURSHIP (SPAE)	SUSKILL	Knowledge, experience, and skills to start a business	Bacq et al. (2016); Brieger et al. (2020); Harding (2007); Nicolás and Rubio (2012); Nicolás et al. (2018); Pathak and Muralidharan (2016)
	KNOWENT	Personal contact with someone who has started a business	Bacq et al. (2016); Brieger et al. (2020); Estrin et al. (2013, 2016); Harding (2007); Pathak and Muralidharan (2016)
	OPPORT	Perception of opportunities to start a business	Bacq et al. (2016); Harding (2007); Nicolás and Rubio (2012); Nicolás et al. (2018)
	FEARFAIL	Possibility of failure discourages them from starting a business	Bacq et al. (2016); Brieger et al. (2020); Estrin et al. (2016); Harding (2007); Nicolás and Rubio (2012); Nicolás et al. (2018)
SOCIETAL VALUES AND ENTREPRENEURSHIP ENVIRONMENT (SVEE)	CULSUP	Cultural support for entrepreneurship	Fernández-Laviada et al. (2020); Vuorio (2017); Witte (2013)
	EASYSTART	Easy to open a new business in their country	Fernández-Laviada et al. (2020); Van Stel et al. (2007)
	NBSOCENT	Common to find businesses focused on the solution of social problems in their country	Fernández-Laviada et al. (2020)
INNOVATION-DRIVEN ECONOMIES (IDE)	IDE	Level of economic development of countries	Fernández-Laviada et al. (2020); Lepoutre et al. (2013); Nicolás et al. (2018)
INDIVIDUAL FACTORS	GENDER	Differentiation between men and women	Bacq et al. (2016); Brieger et al. (2020); Estrin et al. (2013, 2016); Hechavarria et al. (2012); Levie and Hart (2011); Muralidharan and Pathak (2018); Nicolás and Rubio (2012, 2016); Nicolás et al. (2018); Pathak and Muralidharan (2016); Stephan et al. (2015); Van Ryzin et al. (2009)
	AGE	Age under 34, between 34 and 54 and over 54	Bacq et al. (2016); Brieger et al. (2020); Estrin et al. (2013, 2016); Hechavarria et al. (2012); Hechavarria et al. (2017); Levie and Hart (2011); Muralidharan and Pathak (2018); Nicolás and Rubio (2012); Nicolás et al. (2018); Pathak and Muralidharan (2016); Stephan et al. (2015); Van Ryzin et al. (2009)
	EDUC	Primary, secondary or higher education	Bacq et al. (2016); Brieger et al. (2020); Estrin et al. (2013, 2016); Harding (2007); Hechavarria (2016); Hechavarria et al. (2012); Hechavarria et al. (2017); Levie and Hart (2011); Muralidharan and Pathak (2018); Nicolás and Rubio (2012); Nicolás et al. (2018); Pathak and Muralidharan (2016); Stephan et al. (2015)
COUNTRY'S CULTURAL VALUES	MATER	Country's materialism/post materialism values	Stephan et al. (2015); Hechavarria et al. (2017)
	SECVAL	Country's traditional/secular-rational values	Estrin et al. (2016); Hechavarria (2016)

Table 4: Multicollinearity analysis

Variables	VIF (1)	VIF (2)	VIF (3)	VIF (4)	VIF (5)	VIF (6)
SUSKILL	1.12				1.15	1.15
KNOWENT	1.11				1.13	1.10
OPPORT	1.09				1.10	1.17
FEARFAIL	1.02				1.03	1.03
CULSUP		1.06				1.13
EASYSTART		1.06				1.12
NBSOCENT		1.09				1.13
IDE					1.07	1.67
GENDER			1.00		1.02	1.02
AGE (-34)			Base		Base	Base
AGE (-54)			1.21		1.23	1.23
AGE (+54)			1.23		1.27	1.28
EDUC (Primary)			Base		Base	Base
EDUC (Secondary)			1.97		1.98	1.89
EDUC (Higher)			1.95		2.00	1.89
MATER				1.20		1.24
SECVAL				1.20		1.73
Mean VIF	1.08	1.07	1.47	1.20	1.30	1.32
Max VIF	1.12	1.09	1.97	1.20	2.00	1.89

SUSKILL: knowledge, experience and skills to start a business; KNOWENT: personal contact with someone who has started a business; OPPORT: perception of opportunities to start a business; FEARFAIL: possibility of failure discourages to start a business; CULSUP: cultural support for entrepreneurship index; EASYSTART: easy to open a new business; NBSOCENT: common to find businesses focused on the solution of social problems; IDE: innovation driven economies; GENDER: women or men; AGE: three groups of age; EDUC: three groups of the education level; MATER: country's materialism/post materialism values; SECVAL: country's traditional/secular-rational values.

VIF (1) includes variables related to self-perception about entrepreneurship (*SPA*E). VIF (2) includes variables related to individuals' perception of societal values and the entrepreneurship environment (*SVEE*). VIF (3) includes variables of gender and personal characteristics (*GENDER-AGE-EDUC*). VIF (4) includes variables of cultural values (*MATER-SECVAL*). VIF (5) includes variables for the whole sample. VIF (6) includes variables for the sample including only the countries with information in the section about societal values and entrepreneurship environment and cultural values.

Table 5: Results I: Determinants of the probability of being an entrepreneur

	Model (1a) Social entrepreneurs vs. Non-entrepreneurs (SENTREP1)		Model (1b) Social entrepreneurs vs. Commercial entrepreneurs (SENTREP2)	
	Model 1a.1	Model 1a.2	Model 1b.1	Model 1b.2
SUSKILL	2.114 ***	2.039 ***	0.467 ***	0.493 ***
KNOWENT	1.939 ***	1.939 ***	0.895 ***	1.002
OPPORT	1.778 ***	1.725 ***	1.026	1.013
FEARFAIL	0.807 ***	0.784 ***	1.118 ***	1.069 *
CULSUP		1.036		1.009
EASYSTART		0.983		0.876 ***
NBSOCENT		1.056 *		1.050
IDE	0.690 ***	0.620 ***	1.384 ***	1.118 ***
GENDER	0.895 ***	0.881 ***	0.994	0.950
AGE (-34)	Base			
AGE (-54)	1.007	1.023	1.058 **	1.063 *
AGE (+54)	0.998	1.054	1.904 ***	2.017 ***
EDUC (Primary)	Base			
EDUC (Secondary)	0.877 ***	0.881 ***	0.801 ***	0.794 ***
EDUC (Higher)	1.573 ***	1.488 ***	1.214 ***	1.189 ***
CONSTANT	0.038 ***	0.039 ***	0.998	0.977
Observations	127 452	79 942	25 752	17 778
Pseudo R ²	0.082	0.0784	0.040	0.0309

Significance level: ***0.01; **0.05; *0.1. SUSKILL: knowledge, experience and skills to start a business; KNOWENT: personal contact with someone who has started a business; OPPORT: perception of opportunities to start a business; FEARFAIL: possibility of failure discourages to start a business; CULSUP: cultural support for entrepreneurship index; EASYSTART: easy to open a new business; NBSOCENT: common to find businesses focused on the solution of social problems; IDE: innovation driven economies; GENDER: women or men; AGE: three groups of age; EDUC: three groups of the education level.

Table 6: Results II: Analysis of odds ratios according to the degree of development of the economy.

Model (2) Social entrepreneurs vs. Commercial entrepreneurs (SENTREP2)									
	Model 2.1				Model 2.2				
	Factor/Efficiency Driven (IDE=0)	Innovation Driven (IDE=1)	Z	Sig.	Factor/Efficiency Driven (IDE=0)	Innovation Driven (IDE=1)	Z	Sig.	
SUSKILL	0.511 ***	0.328 ***	-6.67	***	0.527 ***	0.350 ***	-4.70	***	
KNOWENT	0.856 ***	0.576 ***	-6.96	***	0.907 ***	0.728 ***	-2.87	***	
OPPORT	0.871 ***	0.898 **	0.53		0.865 ***	0.933	0.93		
FEARFAIL	1.180 ***	1.547 ***	3.98	***	1.156 ***	1.480 ***	2.65	***	
CULSUP					0.887 ***	1.189 **	3.29	***	
EASYSTART					0.846 ***	0.858 **	0.18		
NBSOCENT					0.949	1.187 **	2.42	**	
GENDER	0.955	1.448 ***	6.29	***	0.927 **	1.386 ***	4.40	***	

Significance level: ***0.01; **0.05; *0.1. SUSKILL: knowledge, experience and skills to start a business; KNOWENT: personal contact with someone who has started a business; OPPORT: perception of opportunities to start a business; FEARFAIL: possibility of failure discourages to start a business; CULSUP: cultural support for entrepreneurship index; EASYSTART: easy to open a new business; NBSOCENT: common to find businesses focused on the solution of social problems; GENDER: women or men.

Table 7: Results III: Robustness test to influence of cultural values

Model (3) Social entrepreneurs vs. Commercial entrepreneurs (SENTREP2)				
	Model 3			
	Factor/Efficiency Driven (IDE=0)	Innovation Driven (IDE=1)	Z	Sig.
SUSKILL	0.506 ***	0.381 ***	-2.53	**
KNOWENT	0.901 **	0.799 ***	-1.18	
OPPORT	0.906 **	0.832 **	-0.84	
FEARFAIL	1.172 ***	1.477 ***	1.90	*
CULSUP	0.950	1.142	1.69	*
EASYSTART	0.928 *	0.958	0.31	
NBSOCENT	1.112 **	1.049	-0.51	
GENDER	0.913 **	1.349 ***	3.28	***
AGE (-34)	Base			
AGE (-54)	1.091 **			
AGE (+54)	2.163 ***			
EDUC (Primary)	Base			
EDUC (Secondary)	1.404 ***			
EDUC (Higher)	1.967 ***			
MATER	0.949			
SECVAL	2.067 *			
CONSTANT	0.497 ***			
Observations	11 119			
Pseudo R ²	0.0371			

Significance level: ***0.01; **0.05; *0.1. SUSKILL: knowledge, experience and skills to start a business; KNOWENT: personal contact with someone who has started a business; OPPORT: perception of opportunities to start a business; FEARFAIL: possibility of failure discourages to start a business; CULSUP: cultural support for entrepreneurship index; EASYSTART: easy to open a new business; NBSOCENT: common to find businesses focused on the solution of social problems; GENDER: women or men. AGE: three groups of age; EDUC: three groups of the education level; MATER: country's materialism/post materialism values; SECVAL: country's traditional/secular-rational values.

Appendix.

Country	Innovation-Factor (I-D)/ Efficiency Driven (F/E-D)	Optional questions about Societal values	Cultural values	Country	Innovation-Factor (I-D)/ Efficiency Driven (F/E-D)	Optional questions about Societal values	Cultural values
Argentina	F/E-D		x	Luxembourg	I-D	x	
Australia	I-D	x	x	Macedonia	F/E-D	x	
Barbados	F/E-D	x		Malaysia	F/E-D	x	x
Belgium	I-D			Mexico	F/E-D	x	x
Botswana	F/E-D	x		Morocco	F/E-D	x	x
Brazil	F/E-D	x	x	Netherlands	I-D	x	x
Bulgaria	F/E-D	x		Norway	I-D		
Burkina Faso	F/E-D	x		Panama	F/E-D		
Cameroon	F/E-D	x		Peru	F/E-D	x	x
Chile	F/E-D	x	x	Philippines	F/E-D	x	x
China	F/E-D	x	x	Poland	F/E-D	x	x
Colombia	F/E-D	x	x	Portugal	I-D	x	
Croatia	F/E-D	x		Puerto Rico	I-D	x	
Ecuador	F/E-D	x	x	Romania	F/E-D	x	x
Egypt	F/E-D	x	x	Senegal	F/E-D		
Estonia	I-D	x	x	Slovakia	I-D	x	
Finland	I-D			Slovenia	I-D	x	
Germany	I-D		x	South Africa	F/E-D	x	x
Greece	I-D	x		South Korea	I-D	x	x
Guatemala	F/E-D	x		Spain	I-D	x	x
Hungary	F/E-D	x		Sweden	I-D	x	x
India	F/E-D	x	x	Switzerland	I-D	x	
Indonesia	F/E-D	x		Taiwan	I-D		x
Iran	F/E-D	x		Thailand	F/E-D	x	x
Ireland	I-D			Tunisia	F/E-D	x	x
Israel	I-D	x		United Kingdom	I-D		
Italy	I-D			United States	I-D		x
Kazakhstan	F/E-D	x	x	Uruguay	F/E-D	x	x
Latvia	F/E-D	x		Vietnam	F/E-D	x	
Lebanon	F/E-D		x				