THE INFLUENCE OF CULTURE ON ENTREPRENEURSHIP: DIFFERENCES BETWEEN THE PERCEPTIONS OF PORTUGUESE AND SPANISH CULTURES

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Abstract
We verify if national culture influences the perception of opportunities and risk intolerance of entrepreneurs from Portuguese and Spanish speaking countries. Although Portugal and Spain are in the Iberian Peninsula, both developed distinct cultures, transmitted to their respective colonies along with their languages. Using language as a proxy for cultural heritage, we analyze Portugal and Spain and their former colonies using data from 2011 to 2015 provided by the Global Entrepreneurship Monitor (2018). The first model indicates that individuals from Portuguese culture who have previous knowledge and skills have an increased chance of perceiving opportunities when compared to Spanish culture individuals. This same model also shows that individuals of Portuguese culture who have some degree of risk intolerance are also more likely to perceive opportunities. Results from the second model indicate a direct effect of the national culture, suggesting that individuals of Portuguese culture are more prone to be risk intolerant than those of Spanish culture. However, an indirect effect signals that in Portuguese culture countries, previous knowledge and skills have an even greater effect of reducing risk intolerance. These findings may impact the way of managing entrepreneurship in countries possessing these Iberian cultures. In addition, they contribute to the development of public policies more targeted to the entrepreneurial development of a nation and to the transposition of these policies between countries with a common cultural context.
Keywords: National culture; Entrepreneurship; Opportunity perception; Risk intolerance; Portuguese culture; Spanish culture.

Declarations

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All authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

Availability of data and material
The data supporting the results of this study are openly available on the GEM website at https://www.gemconsortium.org/data/sets.

Code availability
Code for data cleaning and analysis is provided as part of the replication package. It is available at https://doi.org/10.7910/DVN/NMQUIH for review. It will be uploaded to the JIE repository once the paper has been conditionally accepted.

Authors' contributions
All authors contributed to the study conception and design. Material preparation, data collection and analysis were performed by all authors. The first draft of the manuscript was written by Patricia Akemi Sakaguti Motoki and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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ABSTRACT

We verify if national culture influences the perception of opportunities and risk intolerance of entrepreneurs from Portuguese and Spanish speaking countries. Although Portugal and Spain are in the Iberian Peninsula, both developed distinct cultures, transmitted to their respective colonies along with their languages. Using language as a proxy for cultural heritage, we analyze Portugal and Spain and their former colonies using data from 2011 to 2015 provided by the Global Entrepreneurship Monitor (2018). The first model indicates that individuals from Portuguese culture who have previous knowledge and skills have an increased chance of perceiving opportunities when compared to Spanish culture individuals. This same model also shows that individuals of Portuguese culture who have some degree of risk intolerance are also more likely to perceive opportunities. Results from the second model indicate a direct effect of the national culture, suggesting that individuals of Portuguese culture are more prone to be risk intolerant than those of Spanish culture. However, an indirect effect signals that in Portuguese culture countries, previous knowledge and skills have an even greater effect of reducing risk intolerance. These findings may impact the way of managing entrepreneurship in countries possessing these Iberian cultures. In addition, they contribute to the development of public policies more targeted to the entrepreneurial development of a nation and to the transposition of these policies between countries with a common cultural context.

Keywords: National culture; Entrepreneurship; Opportunity perception; Risk intolerance; Portuguese culture; Spanish culture.

1. INTRODUCTION

We verify if the national culture influences the perception of aspects of entrepreneurship (perception of opportunities and risk intolerance) of entrepreneurs from Portuguese and Spanish speaking countries. Although Portugal and Spain share a common origin in the Iberian Peninsula, both countries developed distinct cultures, which were transmitted to their respective colonies along with their languages (Böröcz & Sarkar, 2012). Therefore, we posit that entrepreneurs from these countries have different perceptions relating to aspects of entrepreneurship.

Nations have been striving to create an entrepreneurial culture in order to generate new jobs, as characteristics such as valuing risk-taking positively may play a determinant role in economic growth (Mthanti & Ojah, 2017). Previous research links cultural factors to entrepreneurial activity, indicating that culture can be an important determinant of entrepreneurship (Alesina & Giuliano, 2015; Hechavarria, 2016; Hechavarria & Reynolds, 2009; Laskovaia, Shirokova, & Morris, 2017).

National culture shapes social values and behaviors, affecting all activities of its society (Alesina & Giuliano, 2015; Hofstede et al., 2004). Therefore, it is reasonable to assume that national culture affects the perception of individuals on various aspects related to entrepreneurship, such as perception of opportunities, risk tolerance, knowledge development, society's perception of entrepreneurship and the reasons to enterprise (Hayton, George, & Zahra, 2002; Hayton & Cacciotti, 2013; Hofstede et al., 2004).

In this view, our research fits into a context of the importance of the national culture as a determinant of the development of entrepreneurship and, ultimately, economic performance (Hayton et al., 2002; Urbano, Aparicio, & Audretsch, 2018), while extending the analysis of culture to the field of language (Terjesen, Hessels, & Li, 2016). Although previous research on entrepreneurship and language exists (e.g., Jones-Evans, Thompson, & Kwong, 2011; Johnstone et al., 2018), our research's approach differs since the language can contribute to a common cultural heritage underlying different countries.

Because of the language, colonized countries can acquire part of the culture of their colonizer (Taras, Kirkman, & Steel, 2010). Several countries with a history of colonization, such as Portugal and Spain, spread their cultures, along with their languages, by their former colonies, which united a part of the culture of their colonizers to their own culture. Culture has long-lasting effects (Greif, 1994) and is generally considered to be transmitted virtually unchanged from generation to generation (Alesina & Giuliano, 2015).

Portuguese and Spanish culture countries are of special interest. Portugal and Spain were the two most expansive European nations in terms of pre-19th century colonization strategy (Fieldhouse, 1982). Furthermore, most of their colonized countries are Latin American, an important region with a lack of studies involving entrepreneurship (C. Alvarez, Urbano, & Amorós, 2014).

Our research also tries to fill a gap between two strands in the literature on the determinants of entrepreneurship, relating the entrepreneur characteristics at the individual level with the national culture, a factor at the macro level (Dheer, 2017; Laskovaia et al., 2017). At the same time, it also responds to the call of C. Alvarez, Urbano and Amorós (2014) for more research with Latin American countries using the Global Entrepreneurship Monitor (GEM) data set.

Thus, our study's design relies on entrepreneur-level microdata provided by surveys conducted between 2011 and 2015 by GEM (Global Entrepreneurship Monitor, 2018). And since the focus of this investigation is on entrepreneurs, only individuals classified as TEA (Total Early Stage Entrepreneurship) are considered in the data

set, which comprises the population of working age who started or are managing their own business of up to 42 months old. This criterion, as well as the data requirements, yield 27,040 observations from 3 Portuguese and 14 Spanish culture countries.

We use linear probability models to relate the dependent variables, perception of opportunities and risk intolerance, with the national culture, other entrepreneurial aspects (previous knowledge and skills, risk intolerance, perception of society and reason to enterprise) and a set of controls (Hayton et al., 2002; Hofstede et al., 2004). The models also examine the interactions between national culture and the other independent variables and controls to identify possible differential effects between Portuguese and Spanish cultures. Finally, we consider country-level factors (Human Development Index, Economic Freedom Index, Corruption Perception Index, GDP growth and population growth), as well as country and year fixed effects.

The model of determinants of the perception of opportunities indicates that individuals from the Portuguese culture who have previous knowledge and skills have an increased chance of perceiving opportunities when compared to Spanish culture individuals, reinforcing the observed direct effect of previous knowledge. This same model also shows that those belonging to the Portuguese culture who have some degree of risk intolerance are also more likely to perceive opportunities, partially counterbalancing the negative direct relation between risk intolerance and perception of opportunities. As for the determinants of risk intolerance, the results indicate the direct effect of national culture, suggesting that the individuals of Portuguese culture are more likely to be risk-intolerant than those of Spanish culture. However, an indirect effect signals that in Portuguese culture countries, previous knowledge and skills have an even greater effect of reducing risk intolerance.

Overall, there are indications that cultural proximity is an important dimension on how people perceive experiences (Kastenholz, 2010), and it may affect financial outcomes (Fisman, Paravisini, & Vig, 2017), international trade (Felbermayr & Toubal, 2010) and ultimately, economic growth (Urbano et al., 2018). Our study's novelty comes from the comparison of two cultures with similar origins and an intertwined history, but that nevertheless have developed differences. The inclusion of former colonies also appears as a new element in research on entrepreneurship and national culture, testing for long-lasting cultural traits passed down by the colonizer.

This research deepens the understanding of the differences of perceptions of individuals with entrepreneurial intentions according to their own culture, and may help the development of more targeted public policies for entrepreneurial development of a nation (Hayton et al., 2002; Hayton & Cacciotti, 2013), while indicating paths to transpose these policies across countries with a common inherited culture. This novel approach of entrepreneurship and national culture shows relevance not only to academia, but also to the economy and to society at large.

2. LITERATURE REVIEW

2.1. PERSONALITY TRAITS AND ENTREPRENEURSHIP

According to Kerr, Kerr and Xu (2018), research on entrepreneurs' personality traits suffered a negative shock due to a criticism from Gartner (1988). He questioned the search for a definition of the personality characteristics of an entrepreneur and considered it unproductive due to the lack of consensus among previous studies (e.g., Thorne & Ball, 1981; Welsch & Young, 1982). More recently, McKenzie, Ugbah and Smothers (2007) counter-argued this criticism, stating that the path taken after Gartner (1988) was capable of bringing clearer answers. Our research is part of this comeback of the study of the entrepreneur as an individual.

Research on personality traits has predominantly used the Big Five model (Kerr, Kerr, & Xu, 2018). However, due to the limitations of this model for the study of the entrepreneurial profile, researchers added specific traits, such as self-efficacy, capacity for innovation, locus of control, attitudes towards risk, need for achievement and entrepreneurial alertness (Kerr et al., 2018; Lecuna, Cohen, & Chavez, 2017; Martins, Santos, & Silveira, 2019).

Self-effective individuals have a greater perception of their abilities (previous knowledge and skills) and are better prepared to recognize opportunities that are sometimes imperceptible in the eyes of others (Lecuna et al., 2017). The perception of opportunities is also related to entrepreneurial alertness (Lecuna et al., 2017). The entrepreneur perceives changes in the market environment, relates the information captured with those he already has and assesses the presence of lucrative opportunities (Obschonka, Hakkarainen, Lonka, & Salmela-Aro, 2017; Santos, Fernandes, Ferreira, & Lobo, 2020).

Entrepreneurs are distinguished by their ability to perceive and act on opportunities, despite the uncertainty and risk they are exposed to (Kerr et al., 2018; Melo, Silva, & Almeida, 2019; Riquelme & Alqallaf, 2020). Individuals who have a higher risk tolerance or propensity are more likely to be attracted by entrepreneurial activity (Kerr et al., 2018). However, the literature does not clarify whether risk attitudes can affect the performance of companies in the long run (Kerr et al., 2018).

Despite the attribution of several personality traits to entrepreneurial individuals, studies show that this group is heterogeneous (Antoncic, Bratkovic, Singh, & DeNoble, 2015; Kerr et al., 2018). In addition, there is no well-defined personality pattern, or "ideal profile", that makes an individual more prone to enterprise (Sexton & Bowman, 1985).

According to Kerr et al. (2018), the majority of divergences between studies may be the result of unrepresentative samples, but this is unlikely to be the only reason. It may reflect the action of the environment on the traits of each entrepreneurial population, so that it becomes impossible to generalize populations, industries and cultures (Kerr et al., 2018). In line with this, Obschonka and Stuetzer (2017) suggest that future research should clarify whether cultural differences have an influence on entrepreneurial behavior. Such research will be able to observe the traits more or less relevant to entrepreneurship in a given context (for example: country, culture).

2.2. COUNTRY-LEVEL COMPARATIVE STUDIES

Comparative studies across countries mostly address developed countries (Kerr et al., 2018; Terjesen et al., 2016). Terjesen, Hessels and Li (2016) classify these studies at four levels: individual, company, industry and country.

At the individual level, studies focus on the characteristics of the various types of entrepreneurs (Terjesen et al., 2016). At the company level, research is more abundant and with a main focus on the characteristics and results of entrepreneurial companies (Terjesen et al., 2016). Within the industry, the focus is on the characteristics of the industry of entrepreneurial companies, small and medium-sized companies, venture capital companies and the informal sector (Terjesen et al., 2016). However, this type of research is limited due to the difficulty of obtaining comparable data and does not present consistent results (Terjesen et al., 2016).

Country-level studies comprise a wide variety of entrepreneurial activities in countries and the cultural, political, environmental, social, technological, ecological and legal dimensions (Terjesen et al., 2016; Lopes & Franco, 2019). Although they provide relevant comparisons, contributing to perceptions regarding the predominance of different types of entrepreneurs in the countries and the institutional contexts in which they operate, they are restricted in relation to information about the resources that stimulate and result from these differences (Ducasse, 2020).

A large part of these studies relate cultural factors to entrepreneurial activity (Terjesen et al., 2016). For example, Mueller and Thomas (2001), in their study involving entrepreneurs from nine different countries in Asia, Europe and North America, claim that some cultures are more favorable to entrepreneurship than others. In another survey, Gupta and C. Fernandez (2009) investigated characteristics associated with Turkish, American and Indian entrepreneurs, and suggest that people in culturally different countries attribute different characteristics or traits to entrepreneurs.

Comparative studies across countries make it possible, in addition to finding similarities and differences, to replicate and generalize the specific results of certain countries to other national contexts (Terjesen et al., 2016). When finding similar patterns of the entrepreneurial phenomenon in different countries, it becomes possible to use the same causes in different situations (Terjesen et al., 2016). In addition, the results of this type of study provide knowledge of the circumstances that promote or hinder the development of entrepreneurial activity in different countries (Terjesen et al., 2016).

2.3. NATIONAL CULTURE AND ENTREPRENEURSHIP

Hofstede et al. (2004) argue that culture is a collective phenomenon and can be defined at several levels: occupational or professional culture, organizational or corporate culture, branch or industry culture, and national culture. Despite being segregated, the levels interact with each other, and differ in relation to the degree of rooting (Hofstede et al., 2004). The national culture, object of study of the present research, is the most profound and enduring level of culture (Hofstede et al., 2004). Due to the borders that often divide groups, regions and societies, it is classified by aspects of local civilization (Hofstede et al., 2004).

Thus, among the various definitions used for culture, we adopt the definition of culture as “the set of values, beliefs, and behaviors which are shared” (Hayton et al., 2002, p. 33), socially or politically. It can also be

seen as a complex fusion of knowledge, laws, costumes, capacities and abilities that people in a society acquire, share, modify and pass to others in their groups (Huggins & Thompson, 2014).

Since entrepreneurship is a human and social action, in which the individual invests a large part of himself, with passion and vigor, solves problems and generates new ideas, in addition to monitoring better opportunities and risks, the influence of culture in this context is clear (Kuratko & Audretsch, 2009; Karadal, Shneikat, Abubakar, & Bhatti, 2020; Novejarque Civera, Pisá Bó, & López-Muñoz, 2020). Different cultures can view entrepreneurship from different perspectives, leading to different levels of entrepreneurial orientation across countries (Hitt, Ireland, Camp, & Sexton, 2001).

The level of entrepreneurship in a given society depends on the capabilities and preferences of the population, as well as the opportunities existing in the environment, according to the eclectic theory of entrepreneurship (Verheul, Wennekers, Audretsch, & Thurik, 2002). This concept reflects the supply and demand for entrepreneurship, which are influenced by the level of economic development, industrial structure, available technology, institutions and demographic factors, as well as by culture (Verheul et al., 2002). This relationship between culture and entrepreneurship is addressed by several theories (Donaldson, 2020), as we detail next.

Davidsson (1995) observes this connection through two perspectives, one based on psychological traits and another on social legitimation or moral approval. The first attributes to a culture with strong entrepreneurial values the development of individuals with entrepreneurial behaviors (Fernández-Serrano, Berbegal, Velasco, & Expósito, 2018). The second, on the other hand, attributes to a society that values and recognizes the entrepreneur socially as a successful individual with a higher social status, and that provides a favorable environment, through tax incentives, higher levels of entrepreneurial activity (Kedmenec & Strašek, 2017).

Hofstede (1984), in turn, identifies four cultural dimensions capable of affecting the behavior of individuals within an organization: power distance, uncertainty avoidance, individualism-collectivism and masculinity-femininity. Low power distance and uncertainty avoidance, and high individualism and masculinity are attributes of cultures that favor the development of entrepreneurship (Hayton et al., 2002).

Another approach is proposed by Schwartz (1999), who suggests a theory composed of seven types of cultural values related to three issues present in all societies (Hechavarria & Reynolds, 2009). The first refers to the nature of the relationship between the individual and the group, similar to the individualism-collectivism dimension of Hofstede (1984) (Schwartz, 1999). The second involves the preservation of society through responsible social behavior, in which individuals must respect rules and fulfill obligations (Schwartz, 1999). And the third, deals with the relationship between humanity and the natural and social world, which can be dominant or balanced (Schwartz, 1999).

In the same vein, Inglehart (2008) identifies two main dimensions of cross-cultural variation that reflect the polarization between traditional and secular-rational values, and between values of survival and self-expression. In contrast to secular-rational values, traditional values are based on religion, obedience to authority and patriotism (Inglehart, 2008). The values of self-expression, in contrast to those of survival, are characterized by gender equality, defense of diversity, engagement in economic and political issues, and concern for the environment (Inglehart, 2008).

Considering the theories about national culture, we observe that entrepreneurs from different countries are not totally similar in terms of personal characteristics, with cultural differences leading different types of individuals to enterprise (Cowling, 2000; García-Rodríguez, Ruiz-Rosa, Gutiérrez-Taño, & Gil-Soto, 2020). In

sum, the reasoning is that the cultural attributes of a place act as a link between the social and economic logic of its society and, in some places, that link can increase development, thereby increasing social welfare (Huggins & Thompson, 2014). In other places it impedes development, not allowing economic growth.

2.4. HYPOTHESIS DEVELOPMENT

There are several perspectives for the entrepreneurial phenomenon. Hofstede et al. (2004) highlight that from the individual standpoint, one can analyze what are the motivations for a person to start a business. From the market's standpoint, one can analyze laws, organizational environment, and entrepreneurial activity. Last, from a nation's standpoint, culture can help clarifying the motivations of a society.

S. A. Alvarez and Barney (2007), in turn, posit that entrepreneurship can be seen in two ways: discovery and creation. Using the discovery approach, the individual can discover a profitable opportunity and act to generate value from it. The other approach would be to the entrepreneur himself create the opportunity, and consequently, add value to its business. However, both for discovered and created business opportunities, the situation is the result of an action or reaction of an individual. Therefore, it makes sense to associate the behavior of this individual to its culture.

As for the risks involved in entrepreneurial activity, Hofstede et al. (2004) report enterprising individuals are more prone to accept risks than non-enterprising individuals. However, such risk-taking does not come without a previous cost-benefit analysis. The risks that entrepreneurs assess when making decisions are generally related to money, although there are other types of important risks, such as physical, social and ethical. Hofstede et al. (2004) argue that risk perceptions are influenced by the national culture, in addition to that, evidence indicates that some cultures are more risk-tolerant than others (Costa & Mainardes, 2016).

Therefore, what works best for one country may not work in another country (Torres & Augusto, 2019). For instance, Dheer (2017) finds that culture moderates the effect of macro-level factors on entrepreneurship, such as political freedom, corruption, and education, helping explaining the differences observed between countries with similar levels along these dimensions.

In view of this, our study verifies whether there are differences in perceptions regarding aspects of entrepreneurship between entrepreneurs of Portuguese and Spanish culture. There is a scarcity of studies in the area of entrepreneurship with the same approach, and, thus, lack of empirical evidence that relate the aspects of entrepreneurship treated in this study with the Portuguese and Spanish cultures. Despite this, we assume that there must be a relationship. Therefore, we state Hypothesis 1 as follows:

H1: There is a statistically significant difference between the perceptions of entrepreneurs from countries of Portuguese and Spanish cultures regarding: (a) perception of opportunities and (b) risk intolerance.

In sum, perception of opportunities and risk intolerance can indicate the influence of a given national culture on entrepreneurship. Thus, this study, in addition to responding to a call to extend the analysis of culture to the field of language (Terjesen et al., 2016), at the same time, attempts to bridge the gap between individual and macro-level factors as determinants of entrepreneurship (Dheer, 2017), by relating individual characteristics to

culture. Therefore, this research explores empirically if these elements of entrepreneurship behave differently in two close, but distinct, cultures of the Iberian Peninsula.

3. METHODS

3.1. DATA SOURCES

This research uses microdata from the Global Entrepreneurship Monitor (GEM) obtained by the latest surveys publicly available, conducted between 2011 and 2015. This period refers to all years for which there are answers for the variables needed for the study. And, considering this research focus on entrepreneurs, only individuals classified as TEA (Total Early Stage Entrepreneurship) were considered, which comprises the population of working age who started or are managing their own business of up to 42 months old.

The definition of countries' cultural origins was based on language. Therefore, for this research, countries of Portuguese culture were considered those in which Portuguese is the official language, and countries of Spanish culture are those in which the official language is Spanish. All countries that do not speak Portuguese nor Spanish were excluded.

Altogether, the bases from 2011 to 2015 contain 988,708 observations. When keeping only countries with a Portuguese or Spanish cultural background, the sample drops to 313,949 observations. Finally, when keeping only the observations with all the necessary data, the final sample drops to 27,040 observations. The following countries are part of the final sample:

- Spanish culture: Spain, Peru, Mexico, Argentina, Chile, Colombia, Guatemala, El Salvador, Costa Rica, Panama, Venezuela, Bolivia, Ecuador and Uruguay.
- Portuguese culture: Brazil, Angola and Portugal.

3.2. REGRESSION SPECIFICATION

To verify the relationship between entrepreneurs from countries of Portuguese and Spanish culture with aspects of entrepreneurship, we use linear probability models (Jiménez et al., 2012; Wooldridge, 2010, p. 562). The first model has as a dependent variable the perception of opportunities (POpp), which indicates whether the entrepreneur perceives business opportunities in the next six months in the region where he lives.

$$\begin{aligned} POpp = {} & \beta_0 + \beta_1 \cdot NC + \beta_2 \cdot PrevKS + \beta_3 \cdot RInt + \beta_4 \cdot PSoc + \beta_5 \cdot Reason + \beta_6 \\ & \cdot Gender + \beta_7 \cdot Age + \beta_8 \cdot Income + \beta_9 \cdot Schooling + \gamma_1 \cdot PrevKS \\ & \cdot NC + \gamma_2 \cdot RInt \cdot NC + \gamma_3 \cdot PSoc \cdot NC + \gamma_4 \cdot Reason \cdot NC + \gamma_5 \\ & \cdot Gender \cdot NC + \gamma_6 \cdot Age \cdot NC + \gamma_7 \cdot Income \cdot NC + \gamma_8 \cdot Schooling \\ & \cdot NC + \delta_1 \cdot HDI + \delta_2 \cdot EFI + \delta_3 \cdot CPI + \delta_4 \cdot \Delta GDP + \delta_5 \cdot \Delta Pop + \iota_t \\ & + \kappa_i + \epsilon \end{aligned} \quad (1)$$

The second presents risk intolerance (RInt) as a dependent variable. This variable shows whether the individual is afraid to start a new business.

$$RInt = \beta_0 + \beta_1 \cdot NC + \beta_2 \cdot PrevKS + \beta_3 \cdot PSoc + \beta_4 \cdot Reason + \beta_5 \cdot Gender + \beta_6 \cdot Age + \beta_7 \cdot Income + \beta_8 \cdot Schooling + \gamma_1 \cdot PrevKS \cdot NC + \gamma_2 \cdot PSoc \cdot NC + \gamma_3 \cdot Reason \cdot NC + \gamma_4 \cdot Gender \cdot NC + \gamma_5 \cdot Age \cdot NC + \gamma_6 \cdot Income \cdot NC + \gamma_7 \cdot Schooling \cdot NC + \delta_1 \cdot HDI + \delta_2 \cdot EFI + \delta_3 \cdot CPI + \delta_4 \cdot \Delta GDP + \delta_5 \cdot \Delta Pop + + \iota_t + \kappa_i + \epsilon \quad (2)$$

The dependent variables, perception of opportunities and risk intolerance, are dummies that indicate the perception of the entrepreneur in relation to each of these aspects. The models relate each of these dependent variables to the national culture, other entrepreneurial aspects (previous knowledge and skills, risk intolerance, perception of society and reason to enterprise) and a set of controls (Hayton et al., 2002; Hofstede et al., 2004). Risk intolerance acts as a dependent variable in one model and as an explanatory variable for perceived opportunities in the other. In addition to verifying the individual effect of each factor, the models also assess the interaction between the national culture variable and the other independent variables and controls to identify possible differential effects between the two cultures. Finally, the models consider factors at the country level (Human Development Index, Economic Freedom Index (Fraser), Corruption Perception Index, GDP Delta and Population Delta), as well as country and year fixed effects. Table 1 contains the definition of the variables and controls used in the models.

Variable	Description	Definition
NC	National Culture (Portuguese)	Refers to the respondent's country of origin, defined as 0 for countries of Spanish culture and 1 for countries of Portuguese culture, classified according to their official language. Originally, it is the "country" variable of GEM (Global Entrepreneurship Monitor).
POpp	Perception of Opportunities	Indicates whether the individual perceives business opportunities in the next six months in the region in which he or she lives, set to 0 for "No" and 1 for "Yes". Originally, it is the GEM "opport" variable that contains the answer to the question "Qi2. In the next six months, will there be good opportunities for starting a business in the area where you live?"
PrevKS	Previous Knowledge and Skills	Indicates whether the individual has the necessary skills to start a new business, set to 0 for "No" and 1 for "Yes". Originally, it is the GEM "suskill" variable that contains the answer to the question "Qi3. Do you have the knowledge, skill and experience required to start a new business?"
RInt	Risk Intolerance	Indicates whether the individual is afraid to start a new business, set to 0 for "No" and 1 for "Yes". Originally, it is the GEM "fearfail" variable that contains the answer to the question "Qi4. Would you fear of failure would prevent you from starting a business?"
PSoc	Perception of Society	Measures the perceptions of the individual on how the society sees the entrepreneurs. This variable is the arithmetic mean of four Yes (1) / No (0) questions related to the perception of the local society regarding status, career, living standards and successful businesses. They are derived from the GEM variables "equalinc", "nbgoodc", "nbstatus" and "nbmedia".
Reason	Reason to Enterprise	It indicates the individual's reason to enterprise and measures the duality of opportunity versus need. It was coded as two dummies, since the original GEM variable "teayywhy" is defined as 0 (purely opportunity), 1 (partly opportunity, partly need) or 2 (purely need). The "purely opportunity" effect is absorbed by the constant.
Gender	Gender	Sets 0 for male and 1 for female. It is the "gender" variable of the GEM. The literature indicates that entrepreneurship is more common among men (Kerr et al., 2018).
Age	Age	Age of the respondent in years. It is the "age" variable of GEM. Kautonen (2008) states that the older group of 50-64 years old has a business start-up rate of approximately half of the younger group of 20-49 years old.
Income	Income	Income tercile of the respondent. The original GEM variable "gemhhinc" was coded as two dummies, with the effect of the lower tercile being

		absorbed by the constant. The results of Fairlie and Krashinsky (2012) indicate that the business initiation rate increases with the amount of assets that the entrepreneur has.
Schooling	Schooling	Highest schooling level attained by the respondent. The original GEM "uneduc" variable was coded as six dummies. The effect of having only pre-primary education is absorbed by the constant, with dummies for the other levels up to master's degree or more advanced. Machado, Faia and Domingues (2016) find that schooling is positively related to the alertness level of opportunities to enterprise.
HDI	Human Development Index	Human Development Index of the respondent's country. It is a measure of a country's average performance with respect to education, expectations and standard of living (United Nations Development Programme, 2019). Its value ranges from 0 (low human development) to 1 (high human development). Source: United Nations Development Programme (2019).
EFI	Economic Freedom Index	Economic Freedom Index of the country to which the interviewee belongs. It measures the extent to which a nation's institutions and policies are consistent with the protection of individuals and their property, and the freedom to make their own economic decisions (Fraser Institute, 2019). This index can vary from 0 (low) to 10 (high). Source: Fraser Institute (2019).
CPI	Corruption Perception Index	Corruption Perception Index of the respondent's country. Evaluation on a scale of 0, for the country perceived as highly corrupt, to 100, for the country perceived as very healthy. Source: Transparency International (2019).
GDP	Delta(GDP)	Annual change in Gross Domestic Product (GDP) per capita in the respondent's country. This study used real GDP. Source: World Bank (2020b).
Pop	Delta(Population)	Annual change in the population of the respondent's country. Source: World Bank (2020c).
ι	Year fixed effect	Based on the year the survey was administered. Originally, it is the GEM variable "yrsurv".
κ	Country fixed effect	Based on the respondent's country. Originally, it is the GEM “country” variable. The dummy for Portugal is not included to avoid multicollinearity with the NC variable.

Table 1: Definition of interest and control variables.
Source: Authors.
Note: Regarding the national culture variable, the choice of dummy 0 for Spanish culture and 1 for Portuguese culture was made at random. There is no justification for such a choice, since in the present research there is no intention to indicate the presence or absence of the national culture, but the distinction between the two cultures.

In the case of discrete binary dependent variables, Logit or Probit models are more commonly used. However, as the main focus of the analysis is interactions, the use of linear probability models offers an additional advantage (Jiménez, Ongena, Peydró, & Saurina, 2012). The estimated coefficients are directly interpretable and standard errors do not require corrections, unlike non-linear models (Jiménez et al., 2012; Wooldridge, 2010, p. 563). Furthermore, as Wooldridge (2010, sec. 15.2) shows, linear probability models estimated by OLS produce consistent and even unbiased estimators of the coefficients, and the heteroskedasticity problem is easily dealt with robust standard errors.

4. ANALYSIS AND DISCUSSION OF RESULTS

Table 2 presents the descriptive stats. The sample is composed mostly of Spanish culture respondents, with Portuguese culture respondents representing about 15% of the total. Most perceive opportunities in their region and report previous knowledge and skills and risk tolerance. Women are a slight minority (about 44%), and the respondents are relatively young, exhibiting relatively high income and schooling. In general, the countries in the sample have high HDI (United Nations Development Programme, 2019a), moderate Economic Freedom Index (Fraser Institute, 2018), and Perception of Corruption Index just below the midpoint (Transparency International, 2019b).

TABLE 2: DESCRIPTIVE STATISTICS

Variable	Mean	SD	Min	P25	P50	P75	Max
National Culture	0.1524	0.3594	0	0	0	0	1
Perception of Opportunities	0.6494	0.4772	0	0	1	1	1
Previous Knowledge and Skills	0.8407	0.3660	0	1	1	1	1
Risk Intolerance	0.2687	0.4433	0	0	0	1	1
Perception of Society	0.7023	0.2808	0	.5	.75	1	1
Reason to Enterprise	0.7447	0.8446	0	0	0	2	2
Gender	0.4446	0.4969	0	0	0	1	1
Age	37.4088	11.9327	18	28	36	45	90
Income	1.2304	0.8071	0	1	1	2	2
Schooling	3.1206	1.4171	0	2	3	4	6
Human Development Index	0.7705	0.0655	.547	.736	.752	.828	.885
Economic Freedom Index	6.9429	0.8120	3.64	6.29	6.9	7.61	7.93
Coruption Perception Index	46.4246	16.0448	19	34	38	62	74
Delta(GDP)	0.0234	0.0226	-.0435	.0110	.0210	.0384	.0632
Delta(Population)	0.0101	0.0061	-.0053	.0089	.0098	.0118	.0361

Source: Authors.

Notes: N = 27,040. Mean is the arithmetic mean, SD is the standard deviation, Min is the minimum value, PXX is percentile XX, Max is the maximum value. National Culture is 1 for Portuguese culture countries and 0 for Spanish. Perception of Opportunities is 1 if the individual perceives business opportunities within the next 6 months in the region he lives. Previous Knowledge and Skills is 1 if the individual assumes that he has the necessary skills to start a new business. Risk Intolerance is 1 if an individual is fears starting a new business. Perception of Society is the arithmetic mean of four Yes (1) / No (0) questions related to the perceptions of the local society regarding status, career, standards of living, and news on successful businesses. Reason to Enterprise is 0 (purely opportunity), 1 (partially opportunity) or 2 (purely necessity). Gender is 1 if the entrepreneur is female. Age is the age of the respondent in years. Income is 0 (lower income tercile), 1 (middle income tercile), 2 (higher income tercile). Schooling is 0 (pre-primary education), 1 (1st stage of basic education), 2 (2nd stage of basic education), 3 (upper secondary education), 4 (post-secondary non-tertiary education), 5 (1st stage of tertiary education), 6 (2nd stage of tertiary education). Human Development Index ranges from 0 (low) to 1 (high). Economic Freedom Index ranges from 0 (low) to 10 (high). Corruption Perception Index is rated from 0 (highly corrupt) to 100 (very healthy). Delta (GDP) is the annual change in GDP (real) per capita. Delta (Population) is the annual variation of the population.

The correlation matrix on Table 3 does not indicate any serious collinearity problem between variables, since all of them are well below 0.8 in absolute terms. Table 4, on the other hand, indicates that individuals of

Spanish and Portuguese culture differ in all measured dimensions, except in the aspect of reason to enterprise. Spanish culture individuals perceive more opportunities, claim to have more previous knowledge and skills, and are more risk tolerant. Portuguese culture individuals report that their societies perceive entrepreneurs more positively. In addition, it exhibits a higher proportion of women and younger individuals, but with lower income and schooling. Finally, Spanish culture countries have better rates of human development and economic freedom, but a worse rate of perceived corruption. These differences give a first indication that different cultures are related to different entrepreneur profiles.

TABLE 3: CORRELATION MATRIX

	National Culture	Perception of Opportunities	Previous Knowledge and Skills	Risk Intolerance	Perception of Society	Reason to Enterprise	Gender	Age
National Culture	1.0000							
Perception of Opportunities	-0.0236***	1.0000						
Previous Knowledge and Skills	-0.0828***	0.0783***	1.0000					
Risk Intolerance	0.0542***	-0.0911***	-0.1687***	1.0000				
Perception of Society	0.2185***	0.1494***	0.0193***	0.0308***	1.0000			
Reason to Enterprise	-0.0045	-0.0903***	-0.0506***	0.0854***	0.0316***	1.0000		
Gender	0.0524***	-0.0118*	-0.0622***	0.0503***	0.0404***	0.0899***	1.0000	
Age	-0.0582***	-0.0410***	0.0550***	0.0119*	0.0214***	0.0928***	-0.0073	1.0000
Income	-0.1084***	0.0525***	0.0717***	-0.0578***	-0.0935***	-0.2022***	-0.1614***	-0.0166***
Schooling	-0.1925***	-0.0050	0.1057***	-0.0557***	-0.2047***	-0.1700***	-0.0911***	-0.0766***
Human Development Index	-0.2533***	-0.1160***	0.0518***	-0.0359***	-0.1751***	-0.0201***	-0.0396***	0.1320***
Economic Freedom Index	-0.4101***	-0.0158***	0.0381***	-0.0482***	-0.1187***	-0.0539***	-0.0357***	0.0592***
Coruption Perception Index	-0.1440***	-0.0741***	0.0430***	-0.0449***	-0.1050***	-0.0599***	-0.0239***	0.1213***
Delta(GDP)	-0.2317***	0.1607***	0.0023	-0.0470***	0.0443***	-0.0028	-0.0006	-0.0221***
Delta(Population)	0.0311***	0.1347***	-0.0322***	-0.0040	0.1160***	-0.0136**	0.0389***	-0.0638***

Source: Authors.

Notes: N = 27,040. Pearson correlation matrix. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. National Culture is 1 for Portuguese culture countries and 0 for Spanish. Perception of Opportunities is 1 if the individual perceives business opportunities within the next 6 months in the region he lives. Previous Knowledge and Skills is 1 if the individual assumes that he has the necessary skills to start a new business. Risk Intolerance is 1 if an individual is fears starting a new business. Perception of Society is the arithmetic mean of four Yes (1) / No (0) questions related to the perceptions of the local society regarding status, career, standards of living, and news on successful businesses. Reason to Enterprise is 0 (purely opportunity), 1 (partially opportunity) or 2 (purely necessity). Gender is 1 if the entrepreneur is female. Age is the age of the respondent in years. Income is 0 (lower income tercile), 1 (middle income tercile), 2 (higher income tercile). Schooling is 0 (pre-primary education), 1 (1st stage of basic education), 2 (2nd stage of basic education), 3 (upper secondary education), 4 (post-secondary non-tertiary education), 5 (1st stage of tertiary education), 6 (2nd stage of tertiary education). Human Development Index ranges from 0 (low) to 1 (high). Economic Freedom Index ranges from 0 (low) to 10 (high). Corruption Perception Index is rated from 0 (highly corrupt) to 100 (very healthy). Delta (GDP) is the annual change in GDP (real) per capita. Delta (Population) is the annual variation of the population.

TABLE 3: CORRELATION MATRIX (Continuation)

	Income	Schooling	Human Development Index	Economic Freedom Index	Coruption Perception Index	Delta(GDP)	Delta(Population)
Income	1.0000						
Schooling	0.3630***	1.0000					
Human Development Index	0.0479***	0.2154***	1.0000				
Economic Freedom Index	0.0850***	0.1482***	0.4070***	1.0000			
Coruption Perception Index	0.0675***	0.1719***	0.7393***	0.6846***	1.0000		
Delta(GDP)	0.0869***	0.0334***	-0.2026***	0.1678***	-0.1021***	1.0000	
Delta(Population)	-0.0287***	-0.1530***	-0.7158***	-0.3451***	-0.4998***	0.1013***	1.0000

Source: Authors.

Notes: N = 27,040. Pearson correlation matrix. * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. National Culture is 1 for Portuguese culture countries and 0 for Spanish. Perception of Opportunities is 1 if the individual perceives business opportunities within the next 6 months in the region he lives. Previous Knowledge and Skills is 1 if the individual assumes that he has the necessary skills to start a new business. Risk Intolerance is 1 if an individual is fears starting a new business. Perception of Society is the arithmetic mean of four Yes (1) / No (0) questions related to the perceptions of the local society regarding status, career, standards of living, and news on successful businesses. Reason to Enterprise is 0 (purely opportunity), 1 (partially opportunity) or 2 (purely necessity). Gender is 1 if the entrepreneur is female. Age is the age of the respondent in years. Income is 0 (lower income tercile), 1 (middle income tercile), 2 (higher income tercile). Schooling is 0 (pre-primary education), 1 (1st stage of basic education), 2 (2nd stage of basic education), 3 (upper secondary education), 4 (post-secondary non-tertiary education), 5 (1st stage of tertiary education), 6 (2nd stage of tertiary education). Human Development Index ranges from 0 (low) to 1 (high). Economic Freedom Index ranges from 0 (low) to 10 (high). Corruption Perception Index is rated from 0 (highly corrupt) to 100 (very healthy). Delta (GDP) is the annual change in GDP (real) per capita. Delta (Population) is the annual variation of the population.

TABLE 4: DIFFERENCES IN MEANS TEST

Variable	Mean (ES)	Mean (PT)	Diff.	SE
Perception of Opportunities	0.6542	0.6229	0.0313***	0.0082
Previous Knowledge and Skills	0.8535	0.7692	0.0843***	0.0070
Risk Intolerance	0.2586	0.3254	-0.0668***	0.0079
Perception of Society	0.6763	0.8470	-0.1707***	0.0039
Reason to Enterprise	0.7463	0.7357	0.0106	0.0151
Gender	0.4335	0.5059	-0.0724***	0.0084
Age	37.7034	35.7700	1.9335***	0.1920
Income	1.2675	1.0240	0.2435***	0.0141
Schooling	3.2363	2.4773	0.7590***	0.0236
Human Development Index	0.7776	0.7314	0.0462***	0.0010
Economic Freedom Index	7.0841	6.1576	0.9265***	0.0092
Corruption Perception Index	47.4045	40.9750	6.4295***	0.1681
Delta(GDP)	0.0256	0.0110	0.0145***	0.0003
Delta(Population)	0.0100	0.0106	-0.0005***	0.0001

Source: Authors.

Notes: N(ES)=22,919; N(PT)=4,121. t test for difference in means assuming different variances. * p < 0,1, ** p < 0,05, *** p < 0,01. National Culture is 1 for Portuguese culture countries and 0 for Spanish. Perception of Opportunities is 1 if the individual perceives business opportunities within the next 6 months in the region he lives. Previous Knowledge and Skills is 1 if the individual assumes that he has the necessary skills to start a new business. Risk Intolerance is 1 if an individual is fears starting a new business. Perception of Society is the arithmetic mean of four Yes (1) / No (0) questions related to the perceptions of the local society regarding status, career, standards of living, and news on successful businesses. Reason to Enterprise is 0 (purely opportunity), 1 (partially opportunity) or 2 (purely necessity). Gender is 1 if the entrepreneur is female. Age is the age of the respondent in years. Income is 0 (lower income tercile), 1 (middle income tercile), 2 (higher income tercile). Schooling is 0 (pre-primary education), 1 (1st stage of basic education), 2 (2nd stage of basic education), 3 (upper secondary education), 4 (post-secondary non-tertiary education), 5 (1st stage of tertiary education), 6 (2nd stage of tertiary education). Human Development Index ranges from 0 (low) to 1 (high). Economic Freedom Index ranges from 0 (low) to 10 (high). Corruption Perception Index is rated from 0 (highly corrupt) to 100 (very healthy). Delta (GDP) is the annual change in GDP (real) per capita. Delta (Population) is the annual variation of the population.

4.1. RESULT OF LINEAR PROBABILITY MODELS

Table 5 shows the estimates of the linear probability models. Results indicate that the two cultures are distinct. Culture apparently influences the perception of entrepreneurs from Portuguese and Spanish speaking countries regarding aspects of entrepreneurship, supporting our hypothesis. Next, we detail and discuss the results.

TABLE 5: ESTIMATES OF LINEAR PROBABILITY MODELS

Model	(1)	(2)
Dependent variable	Perception of Opportunities	Risk Intolerance
National Culture		
Portuguese Culture	-0.0315	0.1569**
	(-0.4054)	(2.1497)
Aspects of entrepreneurship		
Previous Knowledge and Skills	0.0704***	-0.1756***
	(7.8133)	(-19.4509)
Risk Intolerance	-0.0781***	

	(-11.0029)	
Perception of Society	0.2334***	0.0458***
	(20.8567)	(4.3735)
Reason to Enterprise		
Partly opportunity motive	-0.0285***	0.0096
	(-3.6970)	(1.3112)
Totally necessity motive	-0.0795***	0.0713***
	(-10.2472)	(9.5025)
Interactions: Portuguese Culture x Aspects of entrepreneurship		
Portuguese Culture x Previous Knowledge and Skills	0.0923***	-0.0978***
	(4.3980)	(-4.7873)
Portuguese Culture x Risk Intolerance	0.0479***	
	(2.6892)	
Portuguese Culture x Perception of Society	0.0011	0.0008
	(0.0300)	(0.0221)
Portuguese Culture x Partly opportunity motive	-0.0008	0.0019
	(-0.0303)	(0.0790)
Portuguese Culture x Totally necessity motive	0.0209	-0.0035
	(1.1026)	(-0.1919)
Controls		
Female	0.0026	0.0210***
	(0.4280)	(3.5566)
Age	-0.0017***	0.0005*
	(-6.4522)	(1.8881)
Income:		
Mid tercile income	0.0314***	-0.0012
	(3.5844)	(-0.1383)
Top tercile income	0.0539***	-0.0074
	(6.2700)	(-0.9103)
Schooling:		
Primary education or first stage of basic education	0.0133	-0.0442**
	(0.6425)	(-2.0617)
Lower secondary or second stage of basic education	-0.0062	-0.0608***
	(-0.3096)	(-2.9272)
(Upper) secondary education	-0.0228	-0.0694***
	(-1.1864)	(-3.4840)
Post-secondary non-tertiary education	-0.0380*	-0.0747***
	(-1.8597)	(-3.5754)
First stage of tertiary education	-0.0239	-0.0528**
	(-1.1870)	(-2.5551)
Second stage of tertiary education	-0.0290	-0.0326
	(-1.0492)	(-1.2081)
Interactions: Portuguese Culture x Controls		
Portuguese Culture x Female	-0.0339**	0.0292*
	(-2.0980)	(1.8918)
Portuguese Culture x Age	0.0014**	0.0001
	(1.9611)	(0.1165)
Portuguese Culture x Mid tercile income	-0.0394*	-0.0242
	(-1.8699)	(-1.1931)
Portuguese Culture x Top tercile income	-0.0243	-0.0337*
	(-1.1470)	(-1.6485)

Portuguese Culture x Primary education or first stage of basic education	0.0013	0.0542
	(0.0344)	(1.5013)
Portuguese Culture x Lower secondary or second stage of basic education	-0.0138	0.0661*
	(-0.3701)	(1.8237)
Portuguese Culture x (Upper) secondary education	0.0352	0.0736**
	(1.0354)	(2.2329)
Portuguese Culture x Post-secondary non-tertiary education	0.0475	0.1578*
	(0.7143)	(1.8940)
Portuguese Culture x First stage of tertiary education	0.0345	0.0512
	(0.8638)	(1.3518)
Portuguese Culture x Second stage of tertiary education	0.0000	0.0000
	(.)	(.)
Country controls		
Human Development Index	0.1150	3.1036***
	(0.1357)	(3.9114)
Economic Freeedom Index	0.0739**	-0.1087***
	(2.5730)	(-4.1228)
Corruption Perception Index	-0.0162***	0.0063**
	(-5.8873)	(2.4507)
Delta(GDP)	1.8481***	-0.3177
	(8.3417)	(-1.5485)
Delta(Population)	6.2572	-6.4823*
	(1.6063)	(-1.7171)
Constant	0.5523	-1.7918***
	(0.7416)	(-2.6083)
Year fixed effects	Yes	Yes
Country fixed effects	Yes	Yes
Adjusted R^2	0.094	0.050
AIC	34103.5024	31410.9244
BIC	34554.7814	31845.7932

Source: Authors.

Notes: N=27,040. Estimates of the linear probability models of equations (1) and (2). t stats in parentheses. * p < 0.1, ** p < 0.05, *** p < 0.01. National Culture is 1 for Portuguese culture countries and 0 for Spanish. Perception of Opportunities is 1 if the individual perceives business opportunities within the next 6 months in the region he lives. Previous Knowledge and Skills is 1 if the individual assumes that he has the necessary skills to start a new business. Risk Intolerance is 1 if an individual is fears starting a new business. Perception of Society is the arithmetic mean of four Yes (1) / No (0) questions related to the perceptions of the local society regarding status, career, standards of living, and news on successful businesses. Reason to Enterprise is 0 (purely opportunity), 1 (partially opportunity) or 2 (purely necessity). Gender is 1 if the entrepreneur is female. Age is the age of the respondent in years. Income is 0 (lower income tercile), 1 (middle income tercile), 2 (higher income tercile). Schooling is 0 (pre-primary education), 1 (1st stage of basic education), 2 (2nd stage of basic education), 3 (upper secondary education), 4 (post-secondary non-tertiary education), 5 (1st stage of tertiary education), 6 (2nd stage of tertiary education). Human Development Index ranges from 0 (low) to 1 (high). Economic Freedom Index ranges from 0 (low) to 10 (high). Corruption Perception Index is rated from 0 (highly corrupt) to 100 (very healthy). Delta (GDP) is the annual change in GDP (real) per capita. Delta (Population) is the annual variation of the population. AIC is the Akaike Information Criterion. BIC is the Bayesian Information Criterion.

4.2. ANALYSIS OF THE INTERACTION BETWEEN NATIONAL CULTURE AND ASPECTS OF ENTREPRENEURSHIP

The results of the interactions between national culture and aspects of entrepreneurship show the differential effects between Portuguese and Spanish cultures. Thus, we show the distinctions between the two cultures, meeting the objective proposed in this work.

Results of Model 1 show that culture significantly affects the perception of opportunities when it interacts with aspects of previous knowledge and skills and risk intolerance, although we do not measure a direct effect of national culture per se. The direct relations between aspects of entrepreneurship and perception of opportunity are as expected: more previous knowledge and better perception of society increase the likelihood of perceiving an opportunity, whereas more risk intolerance and entrepreneurship by necessity decrease the likelihood.

With regard to the interaction between culture and the aspect of previous knowledge and skills, respondents from Portuguese culture countries who have previous skills and experiences are more likely to perceive opportunities than an equivalent individual from Spanish culture countries, reinforcing the direct effect of previous knowledge. Likewise, the findings of Santos and Caetano (2015) indicate that, despite the fact that the Portuguese perceive less business opportunities than the average of the European Union countries, Portugal is the country with the greatest belief in the population that they have skills and necessary knowledge to open a business. This result is relevant, as the previous skills that a person acquires increase confidence in accepting challenges (Acs, Audretsch, Braunerhjelm, & Carlsson, 2012), feeling more prepared to recognize opportunities that are sometimes imperceptible to the eyes of others (Lecuna et al., 2017).

As for the interaction between culture and risk intolerance, the results reveal that individuals from Portuguese culture countries who are risk intolerant are more likely to perceive opportunities than those equivalent persons belonging to Spanish culture countries, partially counterbalancing the direct negative relation between risk intolerance and perception of opportunities. According to Wennberg, Pathak and Autio (2013), the negative effects of fear of failing to start a new business are lower in environments with high levels of institutional collectivism. As Portuguese culture is more collectivist than Spanish culture (Hofstede Insights, 2020), it tends to offer more structure and support to its members, which can mitigate the negative effects of fear of failure and motivate entrepreneurial behavior (Cacciotti, Hayton, Mitchell, & Giazitzoglu, 2016). This reinforces the findings by Costa and Mainardes (2016), which indicate that different cultures see risks differently.

Another argument to explain this effect is based on Higgins' (1998) regulatory focus theory. This theory holds that individuals develop a strategic orientation based on the self-regulation of their behavior (Higgins, 1998). This orientation is formed in childhood, through interactions with close people, and becomes consistent throughout adult life (Hmieleski & Baron, 2008). Individuals who self-regulate through a focus on promotion are motivated to seek gains and achievements and, thus, are more inclined to explore a perceived opportunity (Hmieleski & Baron, 2008). Therefore, it can be assumed that individuals of Portuguese culture developed self-regulation with a focus on promotion and therefore, as risky as the enterprise may be, they are more willing to explore it.

Results from Model 2 indicate a direct effect of the national culture on risk intolerance, suggesting that individuals of Portuguese culture are more likely to be risk intolerant than those of Spanish culture. In this model, previous knowledge lowers the likelihood of risk intolerance, while entrepreneurship by necessity increases it, as one would expect. Interestingly, a better perception of society increases the likelihood of risk intolerance.

However, an indirect effect from the interaction between culture and previous knowledge and skills signals that in Portuguese culture countries, previous knowledge and skills have an even greater effect of reducing risk intolerance, partially offsetting the contrary effect of the direct relation.

Therefore, the knowledge and skills previously acquired seem to be relevant in the formation of self-confidence and, therefore, in the perception of risks. The lower the level of information and skills, the lower the self-confidence, so the perception that a given situation is risky will be increased (Humbert & Brindley, 2015). This result highlights the importance of adequately training entrepreneurs, as it can lower barriers to start an enterprise.

In sum, results indicate that national culture can influence the perception of entrepreneurs both through direct and indirect channels. The indirect channels indicate that national culture can change the relation between aspects of entrepreneurship and the entrepreneur's perceptions. These results corroborate the idea that national culture can influence individual perception (Hayton et al., 2002; Hayton & Cacciotti, 2013), thus affecting the development of entrepreneurship and, consequently, the economic performance of a nation.

4.3. ANALYSIS OF CONTROLS

Regarding the controls, women from Portuguese culture countries are less likely to perceive opportunities and tend to be more risk intolerant than those of Spanish culture. In addition, older people from Portuguese culture countries are more likely to perceive opportunities than those from Spanish culture countries. Finally, the results regarding income and schooling. Individuals with intermediate income from Portuguese culture countries are less likely to perceive opportunities than those from Spanish culture countries. Those who have a high level of income from Portuguese culture countries are more likely to be risk tolerant than those of Spanish culture, unlike respondents with intermediate schooling (second stage of basic education up to post-secondary non-tertiary education).

As for country controls, countries with a higher HDI are more risk intolerant and, as expected, those with higher Economic Freedom Index perceive more opportunities and are more risk tolerant. Interestingly, those with better perception of corruption perceive fewer opportunities and are more risk intolerant. According to Amorós, Borraz and Veiga (2016), transparency is associated with entrepreneurship by necessity.

Finally, it is important to note the low values of R2 (0.094 and 0.050) of the two models. This result was already expected, since other studies in the same line of research (Laskovaia et al., 2017; Stuetzer et al., 2014; Wu, 2007) display a similar behavior. Other factors such as labor availability and unemployment, tax and government regulations also influence the way individuals in a country are actively involved in business activities (Wu, 2007), as well as their perceptions of entrepreneurship.

Taken together, the results point to important cultural and demographic differences, which can help to understand the dynamics of entrepreneurship and adapt the guidelines for their development. Thus, cultural knowledge becomes a competitive advantage (George et al., 2016), so that a nation, knowing the circumstances that promote or hinder the development of its entrepreneurial activity, is able to build a more favorable environment according to the profile of entrepreneurs in their country, even adopting successful initiatives from countries with the same cultural context (Kerr et al., 2018).

5. CONCLUSIONS

Our study's goal is to verify if the national culture influences the perception of aspects of entrepreneurship (perception of opportunities and risk intolerance) of entrepreneurs from Portuguese and Spanish speaking countries. The first model, with perception of opportunities as the dependent variable, shows no direct effect, but indicates that individuals from Portuguese culture who have previous knowledge and skills are more likely to perceive opportunities than their peers from Spanish culture countries, reinforcing the direct effect of previous knowledge. This same model also shows that individuals belonging to countries of Portuguese culture who have some degree of risk intolerance also have an increased perception of opportunities, partially counterbalancing the direct negative relation between risk intolerance an perception of opportunities. As for the second model, of risk intolerance as the dependent variable, the results point to a direct effect of the national culture, suggesting that individuals of Portuguese culture are more likely to be risk intolerant than those of Spanish culture. However, there is an indirect effect indicating in Portuguese culture countries, previous knowledge and skills have an even greater effect of reducing risk intolerance, partially offsetting the contrary effect of the direct relation. In conjunction, both models highlight the importance of adequate training to lower barriers to start an enterprise, even partially compensating for undesired aspects of a national culture.

Although the results are statistically strong, caution must be exercised in drawing general conclusions. The main limitation of this study is the database. The data refer to the 2011-2015 period and is somewhat old, even though it is the most recent made available by GEM (GEM, 2018). It is possible that with more recent data the results present some differences. Another point of attention is the unbalance between Portuguese and Spanish culture observations. After cleansing the data by excluding non-Portuguese and non-Spanish culture countries and rows with missing data, the Spanish are almost six times as numerous as Portuguese culture individuals. The proportion of Spanish to Portuguese speakers in the world is roughly 2:1 (Babbel, 2017; Instituto Cervantes, 2017), meaning that Portuguese culture individuals may be underrepresented. An indication of this is the absence of important Portuguese-speaking countries, such as Mozambique. However, there is no easy way to overcome this limitation, since these are the data provided by GEM. The reach of this research relies on this organization providing the data and these limitations reduce the generalizability of the results. Even so, the evidence indicates that national cultures tend to play an important role in the development of a nation's entrepreneurship.

Theoretical implications of this study relate mainly to the connection between two important themes for nations, national culture and entrepreneurship. This connection has been lacking, both from the entrepreneurship and cultural studies literatures (Acs et al., 2012; Hayton et al., 2002; Hayton & Cacciotti, 2013; Hofstede et al., 2004; Huggins & Thompson, 2014). This observation of the cultural differences in the perceptions of subjects related to the act of enterprising broadens the knowledge both on entrepreneurship and culture, facilitating the understanding of both phenomena, which are naturally complex. Therefore, the main theoretical contribution of this research is uncovering that common themes within entrepreneurship, such as perception of opportunities and risk intolerance, can consider cultural aspects. It indicates that studies carried under only one culture have limited comprehensiveness and generalizability, since national cultures tend to alter individuals' perceptions related to entrepreneurship, as pointed out by the results.

Regarding practical and managerial implications, it is worth that highlighting differences in perceptions between distinct but close cultures can help the development of more targeted public policies aimed at promoting entrepreneurship. Examples of this are programs that enable access to financial resources, information, training and consultancy, which speed up and reduce the bureaucracy in the process of starting a new business, and which exempt investments in R&D from taxes (Jacquemin & Janssen, 2015).

Furthermore, differences in perceptions across cultures indicates that successful initiatives in a given country may not show the same effectiveness in other countries. Recognizing differences on how individuals from different national cultures think point that proper stimulation of local entrepreneurship demands adjustments to the approach according to the targeted culture. Simply importing programs from other nations for fostering entrepreneurship possibly will not work if the national culture is not considered.

Future research could add more recent data, measuring differences as time passes. Another suggestion is to extend the analysis to other distinct cultures, like the Asian or Anglo-Saxon ones, since this study encompasses two naturally close cultures, which share a common Latin ancestry. Last, other studies can extend the number of variables analyzed, using GEM itself, as long as there is data available, or other databases covering entrepreneurship such as the Doing Business database (World Bank, 2020a). All in all, studies connecting national cultures to entrepreneurship can be important subsidies in making decisions to foster entrepreneurship in different nations.

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