Chapter 1
Entrepreneurship and National Culture:
How Cultural Differences among Countries Explain Entrepreneurial Activity

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ABSTRACT

The direct relationship between national cultural practice and entrepreneurship activities is analyzed in this chapter, based on the analysis of 44 countries. Datasets from 2012 and 2013 Global Entrepreneurship Monitor (GEM) report are used to characterize three types of entrepreneurship: early-stage entrepreneurial activity (TEA); necessity-driven entrepreneurship (NDE) and opportunity-driven (ODE) entrepreneurship. Data sets on national cultural values are used to analyze five dimensions of Hofstede's work on cultural values (power distance, individualism/collectivism, masculinity/femininity, long/short term orientation, and uncertainty avoidance). For that, the authors use the Values Survey Module 2013, which has been adapted from Hofstede's previous work from 2010 and 2008. The main conclusion is that the three types of entrepreneurship analyzed in this chapter are differently explained by the cultural and expanded models. If the country of origin and the type of economy are useful to explain TEA, they are of no added value to explain necessity-driven or opportunity-driven entrepreneurship.

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INTRODUCTION

Although the importance of entrepreneurship has been clearly recognized since the mid-1980s the economic and financial crisis that has been affecting particularly most of the developed European countries since 2007 has brought this issue to the fore, further encouraging research pertaining the reasons that can foster entrepreneurship.

As a matter of fact, entrepreneurship has a large potential in terms of economic growth, job creation, and regional and national competiveness, i.e. it contributes to improve human wellbeing (Audretsch, 2007; European Commission, 2013).

The relationships between national culture and entrepreneurial activity are well established, as national culture permeates all human business activity: the individual propensity to get involved in new ventures (McGrath, MacMillan, Yang, & Tsai, 1992; Shane, 1993); the way organizations they work for address entrepreneurship; and even the behavior of organizations whose endeavor is to support entrepreneurial activity (Hofstede, 1984). There is a significant body of research relating national culture and entrepreneurship, as we will see.

However there are too many unanswered questions, i.e. extant literature does not provide an unequivocal answer: does and how the type of (national, regional, industrial or individual) culture play a role in what concerns to entrepreneurship?; does national culture influence entrepreneurial orientation, entrepreneurial activity or the creation of contextual conditions fostering or hindering entrepreneurship?; should culture be considered as a dependent variable, an independent variable or a moderator variable? Although this is only a small sample, it enables us to conclude that there are more questions than answers on this issue. Moreover, research is still unclear on how to *measure* entrepreneurship (Gartner & Shane, 1995).

Building on the traditional four Hofstede's (1980) cultural dimensions as well as on the fifth dimension proposed by Hofstede and Bond (1988), on one hand, and on the 2012 and 2013 Global Entrepreneurship Monitor Report (GEM), on the other hand, we aim to find out:

1. The relationship between each of the five cultural dimensions and Total Entrepreneurial Activity (TEA);
2. The relationship between each of the five cultural dimension and the two main motivations (necessity and opportunity) to undertake a new venture;
3. If there is any kind of relationship between the region of origin (countries were aggregated in four clusters) and TEA and necessity-driven and opportunity-driven entrepreneurial activity;
4. Finally, if there is any kind of relationship between the country level of development and entrepreneurial activity measured by TEA and necessity-driven and opportunity-driven new ventures.

The chapter is organized as follows. In the first section we present the literature regarding the concept of entrepreneurship, the role of GEM project, and national culture, highlighting Hofstede's approach. These crucial concepts are the bedrocks from which our hypotheses arise and our empirical study is build.

After presenting the literature review, we address methodological issues. Data is based on secondary data from 2012 and 2013 GEM reports as well as from the Hofstede's dimensions. Data is based on 44 countries, from 4 geographical regions and 2 levels of economic development. From the literature review is was possible to deploy a set of 15 hypotheses (3 for each cultural dimension) which will be analyzed under two distinct scenarios: a basic model, in which only cultural values are used to analyze entrepreneurship rates and an expanded model that incorporates the region of origin as the type of economy, beyond the five cultural dimensions. We finish this section with the presentation of the results we have got. After this

the empirical study was presented and in the last section we present the conclusions, followed by the limitations and suggestions for future research.

ENTREPRENEURSHIP

The Importance of Entrepreneurship

One can say that nowadays it is fashionable all over the world to talk about entrepreneurship. It can often be heard from policy makers, scholars, businessmen and citizens, in general. This is due, mainly, to the financial crisis that has been affecting in a more or lesser degree the majority of the world economies in the last years, putting pressure on the creation of new businesses that foster economic development and job creation.

However entrepreneurship is far from being a new concept. Though Arthur and Hisrisch (2011) and Dornelas (2014), for example, consider Marco Polo as an early example of entrepreneurship and why couldn´t we go still back and classify as an entrepreneurial activity the discovery of how to make and control fire – a basic but of upmost importance activity for the humanity survival and development, with large thousands of years?

The coinage of the word "entrepreneur" is usually attributed to Cantillon in the 18th century (Arthur & Hisrisch, 2011; Hébert & Link, 1989). For Cantillon (1931) the entrepreneur was someone (merchant, farmer, craftsman) that took risks in searching for profit as he buys at certain prices and sells at uncertain prices; he was a speculator, in the words of Gartner and Shane (1995).

For over two centuries and due to its interdisciplinary nature, entrepreneurship has been occupying a prominent place on the research agendas of academics from different disciplines such as anthropology, economics, management, psychology and sociology. Several researchers have made their way across this multifaceted field: Casson (1982), Hawley (1983), Kirzner (1973), Knight (1921), McClelland (1961), Mises (1951), Rotter (1966), Say (1816), Schultz (1980) and Schumpeter (1934).

Psychologists are particularly concerned with the origins of entrepreneurship. They consider that as entrepreneurs have specific personality traits it is important to measure them. For Brockhaus (1982), for instance, entrepreneurs present three distinctive attributes: need for achievement (pointed out by McClelland (1961)), internal locus of control, and risk taking. On the other hand, Cromie (2000) associates seven characteristics with entrepreneurial behavior (entrepreneurs and business owners) that distinguish them from non-entrepreneurs: creativity, tolerance for ambiguity, self-confidence and autonomy in addition to the three Brockhaus' (1982) attributes.

Economists, in their turn, have been more interested in the consequences of entrepreneurship, i.e. its effect on economic wellbeing. In fact, it is usually accepted that entrepreneurship contributes to: economic growth, job creation, economic efficiency improvement and regional disparities reduction.

At first glance the positive relationship between entrepreneurship and economic growth may seem obvious, which might be misleading. In fact this relationship is rather complex, as the Global Entrepreneurship Monitor (GEM) recognizes (Bosma, Acs, Autio, Corduras, & Levie, 2008). If we analyze the last GEM report (Amorós & Bosma, 2014), for instance, we can conclude that the top five more entrepreneurial countries (measured by the TEA), which we will comment in the following section) are Nigeria and Zambia (39.9%), Ecuador (36%), Malawi (28.1%) and Ghana (25.8%), but all of them are countries with very low levels of per capita income. In contrast, the five countries with the lowest TEA are Italy (3.4%), Japan (3.7%), France (4.6%), Belgium (4.9%) and Algeria (4.9%), all of them being high-income countries, Algeria being the exception.

The reason behind the lack of a direct and positive relationship between higher levels of entrepreneurship and gross domestic product (GDP) per capita is the prevalence of one of the two kinds of entrepreneurship – motivated by necessity or by opportunity – that is closely linked with the stage of development of the different countries (concepts that we will return to in the following section). Indeed, as many scholars have concluded (e.g. Acs, 2006; Stam & Van Stel, 2009; Wennekers, Van Stel, Thurik, & Reynolds, 2005), there is a U-shaped relationship between entrepreneurial activity and economic development. However, if we focus on the prevalence of entrepreneurship by opportunity, we can claim that it has a positive influence on economic development, as Acs (2006) states.

To better understand de U-shaped relationship, we have to consider the global economy: at one extreme we find lesser developed economies that are usually more entrepreneurial, but their small businesses (often informal self-employment) are mainly driven by necessity, which has rather scarce impact on economic growth; at the opposite extreme we have more developed countries, with high purchasing power, where new opportunities are common leading people to shift from wage work to entrepreneurial activity. The new ventures, mainly motivated by perceived market opportunities, have more room to successfully grow and to create wealth. Entrepreneurial activity usually decreases in the middle of these two extremes of development, as people try to move from self-employment to wage employment assured mostly by the fabric of larger firms that are the major contributors to economic development.

The contribution of small and medium-sized enterprises (SMEs) for employment growth, first showed by Birch (1987) and confirmed by other scholars (e.g. Davidson, Lindmark, & Olofsson, 1994), has been a strong argument for the renewed attention that policy makers had given to entrepreneurship since the mid-1980s. Although, one cannot establish a direct relationship between new entrants and the level of employment mainly by three reasons: time lag effects, rate of failure and the replacement effect.

Obviously the launching of a new firm implies the creation of some direct jobs. However the total impact of the new entrance in the level of employment can take several years, with a time lag that can vary between five and ten years (Baptista, Escária, & Madruga, 2008; Fritsch & Mueller, 2004; Van Stel & Storey, 2004).

Particularly in the case of opportunity-driven entrepreneurship, the one that we consider of outmost importance, new ventures are often based in innovative solutions what naturally causes a large number of failures (Geroski, 1995) and so they have a scarce impact on the level of employment. This is actually one of the reasons why Gartner and Shane (1995) challenge the use of new firm entrants as a measure of the entrepreneurial activity, as they state "entry into business does not necessarily guarantee remaining in business" (Gartner & Shane, 1995, p. 284).

Unless new businesses are targeted for different/new market needs, where they can serve their own customers, the survival of new firms is assured at the expenses of the declining or even market exit of incumbent firms. As such, even if they contribute to a more competitive economy, the net job creation is not very relevant, at least in their early years (Geroski, 1995). If we assume that new firms use more sophisticated processes and technologies that enable them to reach higher levels of efficiency than the incumbent firms, driving them out of business, we must admit that they can even have a negative effect on the level of employment (in a certain way the creative destruction, stated by Schumpeter (1934), as the resources freed up will later be used in improved conditions).

When entrepreneurship consists of successful innovative solutions, it is expected that followers/imitators will boost, which intensifies competition bringing increased market benefits. But besides that, successful entrepreneurs operate also as role

models stimulating new entrepreneurial projects (Wennekers et al., 2005). But even when new entrants target markets already served, they are often accompanied by new or at least more advanced technologies and processes, which forces incumbent companies to catch-up if they want to remain in business. All in all, the global result is, therefore, a more competitive economy.

Particularly in rural and less developed regions, where depopulation is a serious problem, even small entrepreneurial projects can have a disproportionate effect to reverse the phenomenon, due to the jobs directly and indirectly created but also by the mentioned role model and imitation effects and even eventual specific externalities, as Dantas and Valente (2013) had shown.

As we have seen, it not possible to establish direct and positive relationships between entrepreneurship and economic development, because its impact depends on a significant number of contextual variables. But, all in all, and particularly "as more people becomes involved in opportunity entrepreneurship and as more people leave necessity entrepreneurship" (Acs, 2006, p. 2), we can assume – and it is largely recognized – that entrepreneurship, in the medium and long run, has a very positive role in enhancing economic growth, employment, and regional and national competitiveness. In other words, it pushes up general welfare (Audretsch, 2007; European Commission, 2003, 2013; OECD, 2005).

Therefore, it is natural and desirable that policy makers keep trying to foster entrepreneurship, improving its suitable conditions that vary from country to country and almost always embodies cultural changes, and involves long-term commitment (Huggins & Williams, 2011), which is not compatible with the short-term outputs that electoral cycles seem to recommend.

Even if the last three/four decades have shown an increased attention to the potential of entrepreneurship and there is agreement about its results and some of its characteristics (e.g. initiative, risk taking, newness, organizing, creating wealth) we do not have yet a consensual concept of entrepreneurship. In their research Hébert and Link (1989), for instance, have found 12 different concepts of entrepreneurship.

At the general level in which we wish to operate for the purposes of this chapter, and mainly adopting Hindle's (2010) proposal, we define entrepreneurship as the process of evaluating, committing to and achieving, under contextual constraints (one of them being culture), the creation of new value from new knowledge or different combinations of existent knowledge for the benefit of all stakeholders involved.

The Global Entrepreneurship Monitor Project

The Global Entrepreneurship Monitor (GEM) project was created in 1997, as a joint initiative between the Babson College and the London Business School. It aimed at providing a comprehensive description of entrepreneurial activity around the globe and pursued three main objectives (Reynolds, Hay, & Camp, 1999): to measure differences in the level of entrepreneurial activity between countries; to uncover factors leading to appropriate levels of entrepreneurship; and to suggest policies that may enhance the national level of entrepreneurial activity.

The first annual GEM report was launched in 1999, involving ten countries (Canada, Denmark, Finland, France, Germany, Israel, Italy, Japan, United Kingdom and United States), but the number of adherent countries (some of them not in a continuous way) has grown over time reaching its maximum in 2013, with 70 countries, that represent an estimated 75% of the world's population and 90% of the world's total GDP (Amorós & Bosma, 2014). According to the GEM, between 1999 and 2013, they had analyzed 104 economies.

The regular and consistent character of GEM data made their annual issues become a precious tool in the area of entrepreneurship being used by a large number of researchers (Acs, 2006; Pinillos & Reyes, 2011;

Wennekers et al., 2005). In what concerns our work there are three points that we would like to stress, some of them already mentioned, as they will be revisited in the empirical study: the metric they use to measure entrepreneurship, the distinction between necessity-driven entrepreneurship and opportunity-driven entrepreneurship and the aggregation of countries according to their level of development.

To estimate the level of entrepreneurial activity in a harmonized way, which is critical to cross-country comparisons, GEM uses the Total Entrepreneurial Activity Index (later called Total Early-Stage Entrepreneurial Activity) (TEA), that includes individuals between 18 and 64 years that can be considered nascent entrepreneurs or new business owners. Nascent entrepreneurs are the individuals that have taken some action towards creating a new business in the last year and expect to own a share of the same business (they cannot have been paid wages from that business for more than 3 months). New business owners are the individuals that are owners/managers of a new business that had paid them wages for more than 3 months but for less than 42 months.

People may engage in entrepreneurial activities for two main motivations: opportunity or necessity. Being opportunity driven means that someone decides to start a business as one of several alternative career options, i.e. because they perceive a business opportunity unexploited (or underexploited) in the market, with high socio-economical potential impact (growth, job and wealth creation, role model, etc.). It usually corresponds to a matured idea/opportunity, with a planned strategy (Bosma et al., 2008). In the necessity-driven entrepreneurship someone chooses to start his/her own business (sometimes merely self-employment) because he/she has no better choice to work (he/she is unemployed or has an unsatisfying job). Often this is the only chance available to assure oneself and/or family survival and the project normally consists on some sort of independent work or a straight imitation of already existent businesses. Accordingly, its socio-economic impact is weak.

However, in what pertains to economic development, the challenge is not to achieve high rates in necessity and/or opportunity-driven entrepreneurship. As Bosma et al. (2008) points out, developing countries reach higher levels in both measures. The point is the prevalence of opportunity entrepreneurship over necessity entrepreneurship. That is why since the 2004 issue GEM has started to use the "opportunity-necessity ratio as a composite indicator of entrepreneurial activity and economic development" (Acs, 2006: 99, p. 99).

According to Reynolds et al. (1999, p. 3), entrepreneurship is "any attempt at new business or new venture creation, such as self-employment, a new business organization, or the expansion of an existing business, by an individual, a team of individuals, or an established business." We understand the rationale of that definition, as they intended to cover entrepreneurship worldwide.

However, we did not adopt it because from our point of view it is too inclusive. We have to applaud every effort that people take to improve their lives – a survival imperative, sometimes – but calling entrepreneur someone that has decided to sell door to door the eggs of their own hens is somewhat excessive. That is why we appreciated particularly that since 2008 GEM has started to analyze entrepreneurship according to the stage of development of the participant countries.

At the 2008 issue, following Porter, Sachs and McArthur (2002), GEM has begun to group the participant countries into three blocks: factor-driven, efficiency-driven and innovation-driven countries (Bosma et. al., 2008), as "countries face very different challenges and priorities as they move from resource-based to knowledge-based economies" (Porter et al., 2002, p. 17), which is also reflected in the kind of entrepreneurship they pursue. In Table 1 we present the distribution of the GEM 2013 participant countries by block.

Factor-driven countries can be described as relying mostly in the primary factors of production: exploitation of the land, extraction

Table 1. GEM economies by economic development level

Factor-Driven Economies	Efficiency-Driven Economies	Innovation-Driven Economies
Algeria, Angola, Botswana, Ghana, India, Iran, Libya, Malawi, Nigeria, Philippines, Uganda, Vietnam, and Zambia.	Argentina, Barbados, Bosnia and Herzegovina, Brazil, Chile, China,Colombia, Croatia, Ecuador, Estonia, Guatemala, Hungary, Latvia, Lithuania, Jamaica, Macedonia, Malaysia, Mexico, Namibia, Panama, Peru, Poland, Romania, Russian Federation, Slovak Republic, South Africa, Suriname, Thailand, Turkey and Uruguay.	Belgium, Canada, Czech Republic, Finland, France, Germany, Greece, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Netherlands, Norway, Portugal, Puerto Rico,Singapore, Slovenia, Spain, Sweden, Switzerland, Taiwan, Trinidad and Tobago, United Kingdom and USA.

Source: Data retrieved from Amorós & Bosma (2014).

of natural resources, manufacturing of basic goods and unskilled labor that, mostly, live in the countryside. Because the economy is not able to assure their basic needs, many people have to bet in the self-employment (usually small manufacturing or service firms). The decision is taken mainly for survival reasons, i.e., what is particularly at stake in necessity-driven entrepreneurship. At best, firms produce commodities (often for companies located in more developed countries) and compete on price (Porter et al., 2002).

As the development proceeds begins the transition to the second stage: efficiency-driven countries. As a result of capital accumulation, foreign direct investment and government support, the average firm size should increase, its production becomes more sophisticated, and the economy is integrated more and more in global markets. We will see the decreasing of self-employment, as the returns to wage work become more attractive relative to entrepreneurial activity (Acs, 2006). However, technology keeps coming mainly from abroad, even if companies are more and more able to assimilate and even improve on it (Porter et al., 2002). Productive efficiency is by and large the source of competitiveness and to enhance it can be useful to outsource some activities giving rise to business opportunities from which entrepreneurs can take advantage.

The shift from one phase of development to the next is always difficult, as it implies significant changes at the macro and microeconomic levels. But this one – the transition from efficiency-driven to innovation-driven economies – is the hardest, according to Porter et al. (2002). It needs a strong involvement of public authorities in order to foster public and private research and development (R&D), higher education, the development of capital markets and the emergence of new technology-based firms. In this context entrepreneurial activity will increase and the new ventures – mainly small and flexible firms that provide high value-added products and/or services – will have a positive impact on economic development.

The transition also implies a change in management practices. Companies do not need, particularly, to reach economies of scale, as in the last stage, but it is critical to assure a permanent stock of ideas to renew existent products and to launch new ones. As we used to say (Dantas, 2011), now they are more and more driven by brain power and less by muscular strength.

Production capacity is available everywhere and often at very attractive prices. This means that more than investing in hardware they need to invest in *brainware*. And more than workers companies need partners, people willing to take up the cudgels of the company. What we want to stress is that things do not happen by chance. If companies wish to take the best from their

human capital, they have to delegate authority, to empower their employees, to tear down hierarchical barriers and to review the compensation schemes. But they need also to take advantage from their environment: to foster networking, to promote alliances, to increase their competencies to compete but without forgetting the large potential of coopetition.

In what concerns the management teams the question is, often, a need of organizational culture change, issue where nice words are common but not enough; leaders have to transmit consistently, through their everyday practice, the desired behavior.

At national level, as we will see in the remaining of the chapter, acting on culture – bringing it into line with entrepreneurship – is a crucial challenge, but it is very difficult to achieve. However, to get there one day, we have to take the first step and it is never too late to start the great crusade.

NATIONAL CULTURE

Over the last years we have been witnessing an unequivocal strengthening of globalization, understood as the growing economic interdependence between countries achieved through the increasing flows of goods, services, capital and knowledge (Govindarajan & Gupta, 2001).

If we think about globalization and also look at the increasing trends towards some behavioral homogenization (e.g. food, clothing, leisure), we may be tempted to conclude that we are in a process of a cultural convergence, which would be totally misleading. Actually what has been changing is the surface, the visible tip of the iceberg (e.g. symbols, fashion, consumer goods). The deepest manifestations of culture – values – have a stable nature over time, as Hofstede (1980, 2003) claims and confirmed by other researchers (e.g. Inglehart & Welzel, 2005; Kirkman, Lowe, & Gibson, 2006; Sondergaard, 1994).

Aware of the existence of distinct behavior standards between countries, many researchers have been analyzing cross-cultural differences for the last decades (Hall, 1976; Hofstede, 1980; House, Hanges, Javidan, Dorfman, & Gupta, 2004; Kluckhohn & Strodtbeck, 1961; Laurent, 1983; Schwartz, 1994; Trompenaars, 1993).

While it is true that the use of the nation as unit of analysis can be called into question as border regions can be more similar between them than for example within their own countries (we admit, for example, that Galicia region, in Spain, is more similar with the Northern of Portugal than with Catalonia), and even in the same country there seems to be strongly differences (Flemish and Walloonians, in Belgium, or Irish and English, in United Kingdom, are probably two examples where rather different cultures exist). Au and Cheung (2004), for example, demonstrate that intra-cultural variation exists and can have explanatory power over and above the cultural meaning proposed by Hofstede (1980). However, nations matter, as Williams and McGuire (2010) point out, because their governments establish the policies that frame the entrepreneurial activity.

According to Kluckhohn (1951), culture is for society what memory is for people. As such, society tends to transmit to future generations the "solutions" (a set of basic common values) that have worked in the past that will shape their behaviors (Inglehart, 1997). So individuals naturally build organizations according to their values and institutions and organizations themselves reflect the dominant values within their culture (Hofstede, 1984).

In what concerns entrepreneurship, the role of culture can be twofold: it can foster (or hinder) entrepreneurial activity as it contributes (or not) for creating a supportive environment (e.g. the way entrepreneurs are socially recognized and supported by public organizations), which will promote the entrepreneurial spirit even within people less sensitive to new ventures; and as a way to transmit entrepreneurial values, that is, culture

can lead to the increase of individuals showing traits more closely aligned with entrepreneurial activity (Krueger, 2000).

Even though the definition of culture is not consensual yet (Boggs, 2004), we adopt the definition proposed by Hofstede (1980, 2003), that has been built on Kluckhohn (1951) and Kroeber and Parsons (1958), and that Triandis (2004, p. 89) has considered that "had become the standard against which new work on cultural differences is validated". For Hofstede (2001, p. 9), culture is the "collective programming of the mind that distinguishes the members of one group or category of people from others" and causes them to display more or less the same behavior in similar situations.

The cultural dimensions that Hofstede (1980) has developed has been extensively used by many researchers (Gupta, Turban, Wasti, & Sidkar, 2009; Lee & Peterson, 2000; Mueller & Thomas 2001; Pinillos & Reyes, 2011; Shane 1993; Shinnar, Giacomin, & Janssen, 2012), what has led Marino, Strandholm, Steensma and Weaver (2002) and Hayton and Cacciotti (2013) to consider Hoftede's (1980) work to be the most widely accepted among entrepreneurship and management scholars.

CULTURAL DIMENSIONS OF HOFSTEDE AND ENTREPRENEURSHIP

The seminal research of Hofstede (1980) aimed at finding differences in values between individuals in their work context. The sample consisted in employees from IBM's offices and subsidiaries from 50 countries and 3 regions (Eastern Africa, Western Africa and Arab Countries). Initially his research led to four dimensions (uncertainty avoidance, individualism/collectivism, power distance and masculinity/femininity). In 1988 has been added one fifth dimension (long-term/short-term orientation) (Hofstede & Bond, 1988), although this one was primarily designed to Asian/eastern countries.

These dimensions are used as our framework in what concerns the impact of national culture on entrepreneurship and will be commented in the remaining section. However, it is henceforth important to stress that the results presented by Hofstede (1980) are average values. Accordingly, we must be cautious and remember that in every society cultural heterogeneity is common.

Uncertainty Avoidance

Uncertainty avoidance refers to a society's tolerance for uncertainty and ambiguity (Hofstede, 1980, 2003). In cultures ranking high in uncertainty avoidance members "want to have structure, to know precisely how they are supposed to behave and what is going to happen next. Predictability of events is highly valued." (Triandis, 2004, p. 92). However, entrepreneurship faces, by its own nature, high uncertainty (Kirzner, 1997; Knight, 1921), which increases as ventures are more innovative, i.e., are driven by opportunity.

The need for predictability results in bureaucratic societies with a large amount of rules and procedural requirements, and a large number of institutions which approvals are needed to create a new venture, what discourage the entrepreneurial activity (Baughn & Neupert, 2003; Lee & Peterson, 2000; Shinnar et al., 2012). Besides, "customers prefer established products and services, and investors invest in ventures that reduce risk" (Rauch, Frese, Wang, Unger, Lozada, Kupcha, & Spirina, 2013, p. 736).

Moreover, high uncertainty avoiding societies do not appreciate deviants. As Hofstede (1984, p. 96) pointed out, in uncertainty avoidance societies "what or who is different is considered dangerous. Such societies have a low level of social tolerance", which once again hinders entrepreneurship and innovation, as Hayton, George and Zahra (2002) suggest.

Clearly, there are situations that differ socially and economically. In developed countries with high GDP per capita income where the level of

uncertainty avoidance is also high it can be stated that economic development is the outcome of a structured economic planning leading to decreased risk. Meanwhile, in countries with low level of economic development it might be rewarding for entrepreneur to take risks to generate their own jobs. As such, the following hypothesis is proposed:

H1a: The higher the uncertainty avoidance index, the lower the entrepreneurial activity measured by the TEA rate.

Necessity-driven entrepreneurs are the outcome of low level supply of jobs. Furthermore, the lack of social security entitlements pushes people to start their own jobs. In uncertainty avoidance countries necessity-driven entrepreneurs might be explained by the lack of better options to work. Thus, we propose the following hypothesis:

H1b: The higher the uncertainty avoidance index, the higher the entrepreneurial activity measured by the necessity-driven entrepreneurship (as a percentage of TEA rate).

In innovation-driven economies, startups as opportunities might be associated to the willingness to earn more money or to seek independence. Thus, we propose the following hypothesis:

H1c: The higher the uncertainty avoidance index, the lower the entrepreneurial activity measured by the opportunity-driven entrepreneurship (as a percentage of TEA rate).

It must be clearly stated that despite the lack of previous studies relating uncertainty avoidance with necessity-driven and opportunity-driven entrepreneurship it was our decision to deploy hypotheses H1b and H1c, even running the risk of being slightly speculative. Our thinking was based on the fact that as necessity-driven entrepreneurship is spurred by survival their rates are going to be higher than those of opportunity-driven entrepreneurship.

Individualism vs. Collectivism

According to Hofstede (2001), individualism can be defined as a preference for a loosely-knit social framework in which individuals are expected to take care of only themselves and their immediate families. Its opposite, collectivism, represents a preference for a tightly-knit framework in society in which individuals can expect their relatives or members of a particular in-group to look after them in exchange for unquestioning loyalty.

This individualism/collectivism dichotomy is one of the most widely studied cultural dimensions (Smith & Bond, 1993). Greenfield (2000) considers it to be the foundation of cultural differences.

Individualists are autonomous and independent from their in-groups, they place a greater emphasis on self-interest, personal goals and personal achievement, while collectivists are mainly concerned with relationships, what make them subordinate their personal goals for the sake of the larger collective to which they belong (Ramamoorthy & Carroll, 1998; Triandis, 2001).

Collectivists rely on cooperation to achieve their results and they prefer methods of conflict resolution that do not destroy relationships, whereas for individualists their own goals and rights are first and they are willing to go to court to settle disputes (Leung, 1997).

Returning to the influence of this dimension (individualism/collectivism) on entrepreneurship, following several researchers (Gupta et al., 2009; Hofstede, 1980; Lee & Peterson, 2000; McGrath, MacMillan, Yang, & Tsai, 1992; Morris, Avila, & Allen, 1993; Mueller & Thomas, 2001), it is possible to claim that individualism is more conducive to entrepreneurship, as it values characteristics as individual achievement, independence, and autonomy. However, there are in fact two different situations, according the motivation to undertake new ventures already mentioned, i.e. necessity-driven and opportunity-driven.

In the former case the main challenge the potential entrepreneur has to face is to get resources to implement and launch his project. The fact is that the integration into strong, cohesive in-groups (family, race, religion, etc.), i.e. collectivism, makes it easier to raise the needed resources, as collectivists, by definition, are sensitive to serve their group's interest (Tiessen, 1997).

In the case of opportunity-driven entrepreneurship – where innovation, defined in wider terms, as proposed by the OECD (2005), has a main role – we have to consider at least two different phases (Glynn, 1996): invention (or ideation, in a broader sense) and implementation. Moreover, some authors (Cooper, 2001; Lynne, Morone, & Paulson, 1997) propose five phases.

Collectivists, as they care with group goals, will propose ideas that do not compromise relationships, the group's harmony, the status quo, while individualists, much more concerned with their own objectives, will more often present breakthrough ideas, that are probably riskier but with a stronger impact on the economy when they succeed. Individualist cultures are the breeding ground for champions' emergence (Shane, Venkataraman, & Macmillan, 1995).

If we understand the entrepreneurial process including these two phases it is possible to support the complementarily of individualism and collectivism, as defends Tiessen (1997). However, invention/ideation does not have to be achieved by the entrepreneur. As Hindle (2010, p. 611) points out "though entrepreneurs can be the creators of starting-point new knowledge, they do not have to be. Entrepreneurs do not have to be inventors." The entrepreneurial role is mainly to recognize, validate and implement the invention/idea, whatever its source, being the implementation the harder task. And implementation is clearly a collective issue (Tushman & Anderson, 2004).

Pinillos and Reyes (2011) concluded that the relationship between individualism/collectivism and entrepreneurial activity is moderated by the level of economic development, that is, in developing countries collectivist are more prone to create their own business, due to their need for achievement and affiliation, while in developed countries the need for achievement and to attain their own goals make individualists to engage in new firms' creation, i.e. "both orientations can contribute to firm creation" (Pinillos & Reyes, 2011, p. 33), according to the level of development.

In brief, taking into account the previous discussion and bearing in mind that implementation is the step that needs to be handled more carefully, which can be facilitated by close relationships within the group (e.g. access to funding and support networks) we propose the next hypothesis:

H2a: Total Entrepreneurial Activity (TEA) is positively associated with collectivism.

In innovation-driven economies it is expected that the percentage of necessity-driven entrepreneurs to be lower than in efficiency-driven economies. Regarding the country of origin, it is expected more developed economies to have a lower level of necessity-driven entrepreneurship.

H2b: Necessity-driven entrepreneurship is positively associated with collectivism.

H2c: Opportunity-driven entrepreneurship is positively associated with collectivism.

As occurred in the previous dimension, the lack of previous studies hinders a more elaborate description of hypotheses H2b and H2c. As we are dealing with individualist-collectivist cultures, we would like to state that in collectivist societies strong ties play a crucial role in supporting entrepreneurship financing activities as well in the deployment of the new business. As such we consider both H2b and H2c as having both positive outcomes.

Power Distance

According to Hofstede (1980, 2003), power distance is the degree to which the less powerful members of a society accept and expect that power is distributed unequally, that is, it relates to the way each society manages the inequalities among their people.

In low power distance cultures we can see that formal power is less important, organizations are more decentralized, flatter, communication is more fluent across functional areas and even with external organizations. The management style is usually participative and status differences are considered undesirable (Hofstede, 1984). Authority is not something to be taken for granted, as individuals question their superiors when they believe it to be appropriate (Gudykunst, 1997; Shane et al., 1995).

In high power distance cultures organizations tend to exhibit strong decision making hierarchies and maintain tight control mechanisms. Individuals are expected to be deferential and obedient to their hierarchical superiors (Shane, 1993) and do not believe in proposing initiatives (Hofstede, 1991; Sagie & Aycan, 2003). Power differences are translated into visible differences in status that contribute to the superior's authority that subordinates have to respect (Hofstede, 1984).

The relationship between power distance and entrepreneurial activity is far from being consensual. Some researchers (Kreiser, Marino, Dickson, & Weaver, 2010; Lee & Peterson, 2000) state that societies ranking lower in power distance would be less entrepreneurial, while others (Busenitz & Lau, 1996; McGrath, MacMillan, Yang, & Tsai, 1992) contend that power distance can foster entrepreneurial activity.

On the positive side, as societies with high power distance indexes preserve the status quo and tend to resist to change (Hofstede, 1991) there is little acceptance for individual initiatives (Rauch et al., 2013), what can be discouraging for creative employees. Besides, as in this kind of societies upward social mobility is difficult, entrepreneurship can be understood as the only way to improve one's independence and power position (Busenitz & Lau, 1996; McGrath, MacMillan, & Scheinberg, 1992; Zhao, Rauch, & Frese, 2010). Thus, in both situations high power distance can foster employees to create their own ventures (Etzioni, 1987).

Moreover, as Nakata and Sivakumar (1996) point out, companies in high power distance cultures can be more successful in the process of implementation of new internal ventures, as their centralization makes easier the adherence to institutionalized practices for the implementation of new projects and their control.

On the negative side, as companies in cultures ranking high in power distance have rigid hierarchies, there is little incentive for innovation (Rauch et al., 2013) and so they do not take advantage of the potential of their creative people, what can lead to a shortage of ideas. Besides, in high power distance countries resources are not distributed fairly, which reduces the probabilities of potential entrepreneurs of disadvantaged groups to take advantage of potential profitable opportunities (Zhao et al., 2010).

In innovation-driven economies it is expected the percentage of necessity-driven entrepreneurs to be lower than in efficiency-driven economies. Regarding the country of origin, it is expected that more developed countries to have lower levels of necessity-driven entrepreneurs.

The reasons behind the positive relationship between necessity-driven entrepreneurship and power distance are the same as referred before. On the other hand, power distance might be influential for entrepreneurs in high power distance societies to be unsatisfied with their current position and deploy all necessary means to start their own business. Accordingly, it was decided to positively relate power distance index with opportunity-driven entrepreneurship rates.

The previous discussions give rise to the following hypotheses:

H3a: The higher the power distance index, the higher the TEA rate.

H3b: The higher the power distance index, the higher the necessity-driven entrepreneurship rate.

H3c: The higher the power distance index, the higher the opportunity-driven entrepreneurship rate.

Masculinity vs. Femininity

According to Hofstede (2001), in feminine societies gender roles overlap (men and women should be modest, tender and concerned with the quality of life) while in masculine societies social gender roles are clearly distinct: men are supposed to be assertive, tough and focused in material success and women are supposed to be modest, tender and concerned with the quality of life.

In masculine societies the task is the absolute priority. They are performance-oriented, more concerned with the career. Thus competitiveness is appreciated. In turn, in feminine societies making a career is less important. They are more concerned to reach welfare society (Hofstede, 1984).

Although we consider laudable the values (modesty, solidarity, social justice) associated with femininity – particularly in the troubled times we live in – we defend that the entrepreneurial activity is much more consistent with the aspirations pursued by masculine societies (achievement, assertiveness, material success), which is in line with many researchers (Gupta et al., 2009; Lee & Peterson, 2000; McGrath, MacMillan, Yang, & Tsai, 1992). Given the importance of achievement and material success in the creation of new businesses regardless being necessity-driven or opportunity-driven entrepreneurs or innovation-driven or efficiency-driven economies, we propose the following hypothesis:

H4a: The Total Entrepreneurial Activity (TEA) is positively associated with masculinity.

H4b: Necessity-driven entrepreneurship is positively associated with masculinity.

H4c: Opportunity-driven entrepreneurship is positively associated with masculinity.

Long-Term vs. Short-Term Orientation

The fifth cultural dimension, long-term orientation (LTO) and its opposite short-term orientation (STO) dimension, first labeled Confucian work dynamism, as some of the values are related with Confucius's ideas, has its origin in the research developed by the Chinese Culture Connection (1987), a team of 24 researchers, one of them being Michael Bond.

Because the questionnaire used by Hofstede (1980) was developed by western researchers and influenced by their own culture, this team prepared, first, a list of basic Chinese values (CVS), and then administered a questionnaire survey in 22 countries. They found again four dimensions, but contrary to expectations, they did not find any dimension related to uncertainty avoidance. The fourth dimension included, on one hand, a long-term orientation (LTO): persistence, ordering relationships by status and observing this order, thrift and having a sense of shame values and, on the other hand, a short-term orientation (STO) based on personal steadiness and stability, protecting your face, respect for tradition and reciprocating of greetings, favors and gifts (Hofstede & Bond, 1988).

This dimension has been adopted in Hofstede's subsequent works. Through replications and extensions, it has already covered some dozens of countries. However, while the four initial abovementioned Hofstede's (1980) dimensions have been extensively used in empirical studies (we just have mentioned a few), the LTO-STO dimension has not received much attention so far.

We admit that LTO makes organizations more conservative, as Sharma, Chrisman and Chua (1997) argue, which may inhibit them to address riskier projects, but a certain amount of prudence

is always welcome as a way to sustainability and growth. This more preventive behavior allows organizations to understand the tradeoffs among possible choices, which is important as entrepreneurial activities have often a chaotic, unpredictable character (Kanter, 1983), and is much more in line with the absence of immediate results that characterizes entrepreneurship (Hisrich, Peter, & Shepherd, 2008).

Zahra, Hayton and Salvato (2004), who analyze the entrepreneurship in the family firm context, defend that time orientation is reflected in the choice of the control system, and LTO favors strategic controls while STO cultures have preference for financial controls. They conclude that there is a positive association between strategic controls, as a proxy for LTO, and entrepreneurship, which indicates the importance of a long-term cultural orientation for entrepreneurial activity. Busenitz and Lau (1996) also assume that LTO is positively associated with entrepreneurship, position also stated by Hofstede (1993) in what pertains to China.

Despite the scarcity of empirical research relating objectively LTO-STO with the entrepreneurial activity, in view of the previous arguments and assuming that the values espoused by LTO cultures – thrift, perseverance toward results, and a willingness to subordinate oneself for a purpose – are very important for entrepreneurship, we propose our last hypothesis:

H5a: The Total Entrepreneurial Activity (TEA) is positively associated with LTO.

H5b: Necessity-driven entrepreneurship is negatively associated with LTO.

H5c: Opportunity-driven entrepreneurship is positively associated with LTO.

DATA AND METHODOLOGY

We based the analysis on 44 countries data for both cultural practice (taken from http://www.geerthofstede.eu/culture, based on the Values Survey Module 2013) and entrepreneurship activity (taken from the series reports of GEM (Amorós & Bosma, 2014; Xavier, Kelley, Kew, Herrington, & Vorderwülbecke, 2013).

The countries analyzed are presented on Table 2. We tried to enlarge the sample as much as possible. Accordingly, we tried to match data available from cultural surveys with those from entrepreneurial studies. As the GEM 2013 survey (Amorós & Bosma, 2014) did not have data available from countries as El Salvador, Austria, Denmark and Turkey, we decided to use the GEM 2012 data (Xavier et al., 2013).

Simulations for two different scenarios were prepared in this study: a basic cultural model and an expanded model. In the former we introduced

Table 2. Countries analyzed by type of economy and geographic region

	Efficiency-Driven Economies	Innovation-Driven Economies
Latin America & Caribbean	Argentina, Brazil, Chile, Colombia, Mexico, Peru, Uruguay, El Salvador*	Trinidad and Tobago
Asia Pacific & South Asia	China, Malaysia, Thailand	Japan, Korea, Singapore,Taiwan
Former Easter European Economies	Croatia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovak Republic, Russian Federation	Slovenia
Western Economies	Turkey*	Austria*, Belgium, Denmark*, Finland, France, Germany, Greece, Ireland, Italy, Netherlands, Portugal, Spain, Sweden, United Kingdom, Norway, Switzerland, USA

Source: Data retrieved from Amorós and Bosma (2014). *Data retrieved from Xavier et al. (2013).

as independent variables the five cultural variables presented earlier: power distance index (PDI); individualism/collectivism (IDV); masculinity/femininity (MAS); long/short term orientation (LTO) and uncertainty avoidance index (UAI). In the expanded model in addition to these five cultural variables we introduced two variables addressing the type of economy (ECON) and geographic origin (COUNTRY).

The variable Type of Economy aims to capture the differences between efficiency-driven countries (EDE) and innovation-driven countries (IDE). The variable used is an ordinal one, differentiating

1. Factor-driven,
2. Efficiency-driven, and
3. Innovation-driven countries.

Due to the lack of data on cultural practices from factor-driven countries this subsample was very small. Accordingly, it was decided not to include factor-driven countries in this study.

The geographical origin tries to capture some differences that are related to cultural and economic backgrounds, but that are not easily explained by any of them individually. We used categorical/ordinal scale, differentiating

1. Latin America,
2. Asian/Pacific,
3. Eastern European, and
4. Western European countries.

The main reason behind this choice stems on relative homogeneity. Clearly, Latin American, Asian and European countries are very relatively more culturally homogeneous within their groups than between them. Furthermore, in order to capture certain historical ideological/economical perspectives we decided to separate Eastern from Western economies. Once again, we realize that previous studies dealing with these particularities are scarce. Nevertheless, in order not to be speculative we decided to pose no hypotheses. Nevertheless, we will first analyze how different they are and introduce this variable in the expanded model to complement our knowledge regarding the more usually analyzed variable: the type of economy. Once again, our thinking was based on the fact that the geographical origin might complement cultural variables and differences on the type of economies.

To measure entrepreneurship, we used three different metrics that capture different motivations to start a business based on 2012 and 2013 GEM data (Amorós & Bosma, 2014; Xavier et al., 2013): early-stage entrepreneurial activity (TEA); necessity-driven entrepreneurship (NDE) and opportunity-driven entrepreneurship (ODE). It is important to clarify the following aspect: historically, opportunity-driven entrepreneurship has been extensively mentioned and addressed in GEM reports. In the 2013 GEM report (Amorós & Bosma, 2014) used the term improvement-driven opportunity entrepreneurship, encompassing a wider, more inclusive perspective, to refer to opportunity-driven entrepreneurship. In this study we still use the more wide known term.

Total early-stage Entrepreneurial Activity (TEA) includes individuals in the process of starting a business and those running new businesses less than 3 ½ years old. It is measured as a percentage of the adult population (Amorós & Bosma, 2014). It is clear that higher rates of TEA are not necessarily positively related with economic development (Amorós & Bosma, 2014).

There are differences across countries as TEA rates tend to be the highest on factor-driven economies and tend to decline with increasing GDP levels (Amorós & Bosma, 2014), although as referred to previously, the TEA rate can increase in innovation-driven economies. The same applies in the differences found between Latin American countries and Europe.

Individual drivers influence motivations to start new firms, which differ vastly across countries. Within the GEM framework individual drivers are categorized in two different types:

Table 3. Descriptive statistics and correlations among variables

	Mean	Standard Deviation	Skewness	Kurtosis	PDI	IDV	MAS	UAI	LTO	TEA	NDE	ODE
PDI	56.52	20.694	0.070	-0.231	1							
IDV	47.36	23.389	0.142	-1.350	-.0596 (0.000)	1						
MAS	47.50	22.807	0.165	-0.267	0.162 (0.293)	0.030 (0.849)	1					
UAI	69.16	23.433	-0.748	-0.274	0.309 (0.041)	-0.278 (0.067)	0.078 (0.614)	1				
LTO	52.12	24.016	0.190	-1.081	0.050 (0.745)	0.169 (0.272)	0.097 (0.531)	-0.085 (0.583)	1			
TEA	10.525	5.4162	1.015	0.498	0.136 (0.377)	-0.485 (0.001)	-0.036 (0.819)	0.072 (0.644)	-0.495 (0.001)	1		
NDE	22.305	10.7825	0.445	-0.261	0.559 (0.000)	-0.259 (0.090)	0.225 (0.142)	0.462 (0.002)	0.212 (0.167)	-0.040 (0.795)	1	
ODE	49.214	13.6421	-0.164	-0.680	-0.284 (0.062)	0.073 (0.638)	-0.371 (0.013)	-0.447 (0.002)	0.006 (0.969)	0.038 (0.808)	-0.463 (0.002)	1

necessity-driven motives and opportunity-driven motives. A necessity-driven entrepreneur is someone who wants to start a new business because there are no better options in the job market. On the other hand, an opportunity-driven entrepreneur is someone who is driven by the opportunity to earn more money or be more independent, as opposed to the need to earn some income (Amorós & Bosma, 2014).

Methodologically diverse tools and techniques were used. Initially, descriptive data analysis was used for all cultural variables as well as for the variables identifying national entrepreneurial characteristics. Descriptive statistics and correlations of the studied variables are displayed in Table 3.

The normality of all items is assured taking into account skewness and kurtosis values. For all of the items examined, the skewness and kurtosis values were below the Curran, West and Finch (1996) absolute thresholds of 2.0 and 7.0, respectively. The correct procedure for comparing k means, two by two, is called ANOVA or Analysis of Variances (Marôco, 2007). It was used to compare if the mean values of the variables under analysis are statistically different, when considering the type of economy and country of origin. To this end, we used the Levene test to confirm the homogeneity of variances, which is presented in Table 4 for the type of economy as factor and Table 6 for country of origin as factor.

Regression analysis may be used to model the functional relationship between at least two variables (Marôco, 2007). In this case we used the multiple linear regression analysis to test the relationship between the dependent variable and the set of explanatory variables for both the cultural model and the expanded model.

Table 4. Homogeneity of variances test by type of economy

	Levene Statistic	Sig.
PDI	1.598	(0.213)
IDV	2.110	(0.154)
MAS	2.322	(0.135)
UAI	3.259	(0.078)
LTO	0.121	(0.729)
TEA	3.413	(0.072)
NDE	0.300	(0.587)
ODE	0.074	(0.788)

Note: Values between parentheses are probabilities (pvalues).

Table 5. ANOVA results and averages by type of economy

Variables	Average		Standard Deviation		F	Sig.
	EDE	IDE	EDE	IDE		
PDI	66.52	47.39	16.479	20.187	11.723	(0.001)
IDV	37.29	56.57	18.789	23.723	8.814	(0.005)
MAS	44.19	50.52	18.996	25.858	0.843	(0.364)
UAI	77.14	61.87	18.279	25.556	5.109	(0.029)
LTO	46.58	57.18	23.101	24.208	2.200	(0.146)
TEA	13.643	7.678	5.4634	3.5285	18.834	(0.000)
NDE	26.371	18.591	10.6615	9.6800	6.438	(0.015)
ODE	45.543	52.565	12.5059	14.0345	3.047	(0.088)

Note: Values between parentheses are probabilities (pvalues).

RESULTS

As shown in Table 4 the homogeneity of variances test shows that the variances of the efficiency-driven and innovation-driven economics are not statistically different. The means for the cultural variables (PDI, IDV, MAS, LTO and UAI) and entrepreneurship variables (TEA, NDE and IPO) are shown in Table 5.

It is possible to conclude that power distance index, individualism/collectivism, uncertainty avoidance, TEA e necessity entrepreneurial activity (as % of TEA), for a 5% significance level, are statistically different in efficiency-driven economies and innovation-driven economies.

Table 6. Homogeneity of variances test by country of origin

	Levene Statistic	Sig.
PDI	2.995	(0.042)
IDV	1.483	(0.234)
MAS	1.843	(0.155)
UAI	4.566	(0.008)
LTO	3.466	(0.025)
TEA	3.089	(0.038)
NDE	0.988	(0.408)
ODE	0.849	(0.476)

Note: Values between parentheses are probabilities (pvalues).

On the other hand it is possible to claim that innovation-driven economies are characterized by low power distance, more collectivist orientation, lower uncertainty avoidance, lower TEA and lower necessity entrepreneurial activities *vis-à-vis* efficiency-driven economies.

Clearly, there are differences between the variances of the variables analyzed, most likely due to the small size of subsamples that represent the country of origin. However, in view of what is shown in Table 7 and Currant et al.'s (1996) proposal, we can claim the normality of the sample under analysis.

With regards to Table 7, for a 5% significance level, there are differences between the averages of power distance index, individualism/collectivism, uncertainty avoidance index, long term orientation, TEA and necessity-driven entrepreneurial activity. After applying the Scheffé Post hoc test it is possible to claim that:

- Western economies are different from Latin American, Asian/Pacific and Eastern European countries in what concerns to power distance index;
- Latin American and Asian/Pacific countries (much more individualistic) are statistically different from Eastern and Western countries (more collectivists) in what concerns to individualism;

Table 7. ANOVA results and averages by country of origin

Variables	Average				F	Sig.
	LA	A&SEA	Eas Ec	Wes Ec		
PDI	63.00	70.00	66.70	42.39	6.901	(0.001)
IDV	26.33	23.86	51.10	64.94	18.122	(0.000)
MAS	49.33	53.86	44.70	45.67	0.275	(0.843)
UAI	82.67	54.86	76.70	63.78	2.855	(0.049)
LTO	24.01	73.19	64.56	51.06	12.074	(0.000)
TEA	18.67	9.69	9.72	7.23	23.411	(0.000)
NDE	20.44	24.23	31.92	17.14	5.505	(0.003)
ODE	46.83	56.27	42.75	51.25	1.673	(0.188)

Note: Values between parentheses are probabilities (pvalues).

- In what pertains to uncertainty, the post hoc test returned no statistical differences among the types of countries;
- Latin American countries are very short term oriented when compared to Asian/ Pacific, Eastern and Western European countries;
- Latin American countries have a larger TEA rate when compared to Asian/Pacific, Eastern and Western European countries;
- Latin American and Asian/Pacific countries are statistically different from Eastern and Western economies in what pertains to necessity-driven entrepreneurial activities.

Clearly, as can be seen, there is some heterogeneity in the sample, both in independent and dependent variables.

Multiple regression models are based, as mentioned above, on the cultural base model and on the cultural expanded model, which includes the type of economy and the country of origin. The simplified models were run taking into account only statistically significant variables. Table 8 shows both models with TEA as dependent variable. As can be seen, only individualism and LTO are statistically significant in the cultural model. However, in the expanded model power distance index, LTO, type of economy and country of origin are statistically significant, all of them with negative coefficients. On the other hand, individualism, masculinity and uncertainty avoidance are not statistically significant.

Based on the abovementioned hypotheses, it is possible to validate only two of the five cultural values introduced in the multiple regression analysis: short-term orientation and individualism, H5a and H2a, respectively, for the cultural simplified model, and low power distance and short-term orientation, H3a and H5a, respectively, for the extended model. Furthermore, it is important to refer that the coefficients of the significant variables are very close to zero, which means that their explanatory power is reduced.

After removing non-statistically significant variables and comparing the cultural simplified model with the expanded simplified model it is possible to conclude that the expanded simplified model is much more robust as the determination coefficient explains 68.6% of the TEA variability.

As a conclusion it is possible to claim that larger values of TEA can be explained by lower levels of power distance, by short-term orientation, by efficiency-driven economies and by Latin American and Asian/Pacific economies. This clearly reflects that motivations to start a business are more stringent in less-developed countries because there were no better options for work rather than because entrepreneurs spotted brand new startup opportunities.

Table 8. Regression models for TEA

	Cultural Model	Cultural Simplified Model	Expanded Model	Expanded Simplified Model
(Constant)	23.652 (0.000)	20.052 (0.000)	36.002 (0.000)	32.294 (0.000)
PDI	-0.036 (0.397)		-0.074 (0.037)	-0.065 (0.027)
IDV	-0.120 (0.002)	-0.096 (0.001)	-0.031 (0.409)	
MAS	0.011 (0.709)		0.010 (0.674)	
UAI	-0.016 (0.601)		-0.026 (0.262)	
LTO	-0.093 (0.003)	-0.096 (0.002)	-0.057 (0.014)	-0.057 (0.013)
ECON			-3.457 (0.018)	-2.820 (0.028)
COUNTRY			-2.390 (0.002)	-2.831 (0.000)
R^2	[0.429]	[0.411]	[0.700]	[0.686]
F test	[5.718]	[14.291]	[12.027]	[21.305]
p value	(0.000)	(0.000)	(0.000)	(0.000)

Note: Values between parentheses are probabilities (pvalues).

Table 9 shows both cultural and expanded models having necessity-driven entrepreneurship as dependent variable. It is possible to witness that in both models power distance index and uncertainty avoidance are the only statistically significant variables. Moreover, in the expanded model neither the type of the economy nor the country of origin are statistically significant.

It means that the type of economy and the country of origin are not of any added value to the cultural model. On the other hand, power distance index and uncertainty are both positive. Based on the abovementioned hypotheses, it is possible to validate H1b and H3b.

As can be noticed, based only on two variables, power distance index and uncertainty avoidance, the model explains 40.5% of necessity-driven entrepreneurship.

In this way necessity-driven entrepreneurship can be understood as one of the ways to improve one's independence or one of the ways out for disadvantaged groups pushed away of poverty into the creation of the new incomes. It can be argued that the positive uncertainty avoidance index is the result not of the predictability of bureaucratic societies but of the willingness of necessity-driven entrepreneurs to cope with the odds of dealing with the lack of better options for work and low levels of social security entitlements, which push them into necessity-driven entrepreneurship.

Finally, Table 10 displays information regarding how both the cultural model and the expanded model explain opportunity-driven entrepreneurship. As occurred in the previous situations, the cultural model and the expanded model return the same result. This clearly means that neither the type of economy nor the country

Table 9. Regression models for necessity-driven entrepreneurship

	Cultural Model	Cultural Simplified Model	Expanded Model	Expanded Simplified Model
(Constant)	-11.489 (0.156)	-1.435 (0.764)	3.648 (0.764)	-1.435 (0.764)
PDI	0.249 (0.004)	0.040 (0.001)	0.192 (0.033)	0.040 (0.001)
IDV	0.040 (0.574)		-0.033 (0.721)	
MAS	0.047 (0.422)		0.091 (0.147)	
UAI	0.160 (0.009)	0.1147 (0.016)	0.132 (0.030)	0.1147 (0.016)
LTO	0.087 (0.124)		0.091 (0.117)	
ECON			-6.286 (0.084)	
COUNTRY			2.479 (0.188)	
R^2	[0.469]	[0.405]	[0.515]	[0.405]
F test	[6.701]	[13.972]	[5.464]	[13.972]
p value	(0.000)	(0.000)	(0.000)	(0.000)

Note: Values between parentheses are probabilities (pvalues).

Table 10. Regression models for opportunity-driven entrepreneurship

	Cultural Model	Cultural Simplified Model	Expanded Model	Expanded Simplified Model
(Constant)	84.978 (0.000)	75.735 (0.000)	63.967 (0.001)	75.735 (0.000)
PDI	-0.137 (0.239)		-0.055 (0.652)	
IDV	-0.093 (0.359)		0.019 (0.884)	
MAS	-0.182 (0.031)	-0.202 (0.013)	-0.247 (0.007)	-0.202 (0.013)
UAI	-0.233 (0.007)	-0.245 (0.002)	-0.193 (0.025)	-0.245 (0.002)
LTO	0.022 (0.777)		0.018 (0.819)	
ECON			9.005 (0.078)	
COUNTRY			-3.740 (0.159)	
R^2	[0.339]	[0.313]	[0.400]	[0.313]
F test	[3.900]	[9.338]	[3.435]	[9.338]
p value	(0.006)	(0.000)	(0.006)	(0.000)

Note: Values between parentheses are probabilities (pvalues).

of the origin contribute to the cultural model. On the other hand, only masculinity and uncertainty avoidance index are statistically significant at a 5% level, being both negative. The model, based only on two variables, femininity and uncertainty avoidance, explains 31.3% of the opportunity-driven entrepreneurship. Based on the abovementioned hypotheses, it is possible to validate only one of the hypothesis: H1c. Clearly, as masculinity is statistically significant but negative H4c should be rephrased and explained.

It can be argued that opportunity-driven entrepreneurship is the result of the search of cooperation, relationships and quality of life that feminine cultures strive for. Moreover, optimistic, opportunity-driven entrepreneurs are not only open to new ideas but also influenced by high uncertainty avoidance societies in which reduction risk activities, as the development of training, business plan support activities ideas and business incubators, underpin a vast array of programs that help would-be entrepreneurs in their new ventures decision process.

CONCLUSION

It is clear that the prevalence of entrepreneurial activities differs among countries and that cultural characteristics, the type of the economy and the country of origin are differently influential.

The first general conclusion of this chapter is that of the three expanded models just the one that analyzes the TEA includes variables as the type of economy and the country of origin. This model explains 68.6% of the variability of TEA. Moreover, the expanded model fails to add explanatory power to necessity-driven or opportunity-driven entrepreneurship. This means that although there are huge variations among countries in terms of cultural values, necessity-driven or opportunity-driven entrepreneurship have similar characteristics across innovation or efficiency-driven economies, as well as across different countries of origin.

The second general conclusion is that cultural simplified models, based on the determination coefficient, manage to explain 40% of TEA and necessity-driven entrepreneurship and around 30% of opportunity-driven entrepreneurship. Nevertheless, different cultural variables can be used to explain different types of entrepreneurship. While individualism and long-term orientation are of added value to explain TEA, (high) power distance and (high) uncertainty avoidance help to explain necessity-driven entrepreneurship. Finally, femininity and (low) uncertainty avoidance are of added value to explain opportunity-driven entrepreneurship. This is a clear indication that we are dealing with different types of entrepreneurship, but also with different explanatory characteristics that are more stringent than the type of the economy or the country origin.

If the main motivation to conduct this study was underpinned on the willingness to deepen the knowledge regarding the relationship between the role of culture on entrepreneurship, it is clear that both the role of culture and the different types of entrepreneurship is much more complex than originally thought. Moreover, although some types of entrepreneurial activity can be explained by some cultural variables, in general, new research combining national wealth differences and dynamic perspectives need to be researched in the future.

LIMITATIONS

As usual, this study has several limitations. The first one is that it uses data from GEM 2012 and 2013 reports due to asymmetric information regarding four countries. Although this is not a severe limitation it may influence some outputs (for example, Trinidad and Tobago in 2012 was an efficiency-driven economy in 2013 it is an innovation-driven economy).

The second limitation is related with the unbalanced size of the country of origin, where for example Latin America is composed by nine countries, Asia by seven countries whereas Western economies encompass eighteen countries. A third limitation is related with the lack of information on cultural values from factor-driven economies. It may be interesting to analyze how they contribute to differentiate necessity-driven from opportunity driven entrepreneurs, especially from the type of economy point of view.

Finally, this study uses a typical cross-section analysis that produces a static perspective of the culture-entrepreneurship relationship.

FUTURE RESEARCH DIRECTIONS

In order to circumvent the abovementioned limitations it would be of added value to try to analyze how culture and entrepreneurship interrelate from a dynamic perspective point of view. In this respect, time series analysis would be an interesting tool to try to explain how some countries have changed their cultural background and how it influences their entrepreneurial evolution.

Another interesting research avenue would be for example to analyze how the total early-stage entrepreneurship activity, necessity-driven entrepreneurship and opportunity-driven entrepreneurship mediate the relationship between cultural characteristics and gross domestic product per capita of a country. Moreover, it could also be interesting to analyze how factor-driven, efficiency-driven or innovation driven economies can be used as mediators between cultural grounds and entrepreneurial activities, as it is clear that the type of economy is not necessarily an antecedent of entrepreneurship. Furthermore, as cultural values might be overridden by heavy institutional contexts (namely, strict legislation and generous social security entitlements) it would be advisable to include the individual's decision making process to complement previous research.

Another research strand that could complement the present study could be the introduction of other cultural dimensions, as used in the GLOBE study (House et al., 2004) that include variables as performance orientation, future orientation, assertiveness, societal collectivism, in-group collectivism, gender egalitarianism, humane orientation power distance and uncertainty avoidance. The main advantage would be to use different cultural values as cultural practices, which would deal with different/narrower concepts and practices not embraced in this study.

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KEY TERMS AND DEFINITIONS

Contextual Conditions: A set of political, social, economic and cultural dimensions that characterize a country or a region.

Culture: The collective programming of the mind that distinguishes the members of one group or category of people from others and causes them to display more or less the same behavior in similar situations.

Entrepreneur: Someone who identifies an opportunity and gather the necessary resources, which through action, creates and implements new projects.

Entrepreneurial Orientation: A multidimensional construct, applied at the organizational level, which characterizes firm's entrepreneurial behavior and includes one or several of these five dimensions: risk-taking, innovativeness, pro-activeness, competitive aggressiveness, autonomy.

Entrepreneurship: The process of evaluating, committing to and achieving, under contextual constraints, the creation of new value from new knowledge or different combinations of existent knowledge for the benefit of all stakeholders.

Necessity-Driven Entrepreneur: Someone who started a business because there were no better options for work, rather than because he/she saw the startup as an opportunity.

Opportunity-Driven Entrepreneurs: Also known as improvement-driven opportunity entrepreneurs in the GEM 2013 report, are defined as those opportunity-driven entrepreneurs who sought to either earn more money or be more independent, as opposed to maintain income.

Total Early-Stage Entrepreneurial Activity (TEA) Rate: The prevalence rate of individuals in the working age population who are actively involved in business start-ups, either in the phase of starting a new firm (nascent entrepreneurs), or in the phase spanning 42 months after the birth of the firm (owner- manager of new firms).