

# Impact of Education and Culture on Entrepreneurship<sup>1</sup>

Guzmán Sánchez, Francisco José, Hanyang University and Sang-Myung, Lee<sup>2\*</sup>

*Ph.D. Hanyang University*

*School of Business, Haengdang-dong 17, Seongdong-gu, Seoul, KOREA*

*<sup>2</sup>sanglee@hanyang.ac.kr*

## **Abstract**

*This paper explored the impact of secondary education level and national culture on the entrepreneurial activities. Specifically, we examine how higher education and one dimension of national culture (individualist-collectivist orientation) are related to the ratio of opportunity-entrepreneurship in a country. The research model is developed as: high education and individualism are positive determinants of the entrepreneurial activity, but only when the motivation for starting new ventures is opportunity or improvement and not when people do it for necessity.*

*Our variables were developed with GEM data, World Economic Forum's Global Competitiveness Report and Hofstede's cultural determinants for 57 countries for the years 2009, 2010 and 2011, and we test our hypothesis empirically. In addition to our testing independent variables, we added 3 more control variables, economic freedom, and perception of corruption and property rights, in order to specify our findings.*

*Our analysis proves that higher education and individualism are determinants for superior opportunity entrepreneurial activity. Education levels and individualism, however, do not show the interaction effect. Our results show that, after controlling for other entrepreneurship determinants variables borrowed from the institutional theory of entrepreneurship, education at the tertiary level i.e., university, college, etc., positively affects the choice of individuals to pursue opportunity driven entrepreneurship. Moreover, individualism is also found to positively affect entrepreneurs' choice. We hope this research contribute in expanding our understanding on global entrepreneurship activities.*

**Keywords:** *National Culture, Secondary Education, Entrepreneurship, Individualism, Collectivism*

## **1. Introduction**

A wide variety of research projects have been conducted regarding the determinants of entrepreneurship. Among those, education has been used as an indicator of successful venture creation and permanence. Reynolds *et.al.*, (1999), on the first Global Entrepreneurship Monitor (GEM), rank education as one of the most important characteristics for successful entrepreneurship. Education provides individuals the ability to discover and convert knowledge into productive ends: to see market opportunities and turn them into commercial enterprises (Reynolds *et. al.*, 2000).

---

<sup>1</sup> This paper was supported under the Supporting Business for University Entrepreneurship Center 2016 supervised by Small and Medium Business Administration (SMBA) and Korea Institute of Startup & Entrepreneurship Development.

This paper is extended and developed from authors' previous conference presentation (Guzman and Lee, 2016)

\*Corresponding Author

Even though the general consensus exists regarding the importance of education on the creation of new ventures, countries with high levels of post-secondary education show low levels of start-ups. Conversely, other nations with low levels of education show a rather high rate of new venture creation. This is likely to happen because individuals in some countries, usually in the less developed ones, need to secure their means of life, finding in self-employment and in the establishment of new firms a solution to their difficult economic situation. On the other hand, having high levels of education means that people does not longer need to secure only a way to live or do things out of necessity because it's possible that they have more options from where to choose, *i.e.*, a stable job, a family owned business or the establishment of a new venture, thus educated entrepreneurs seem to be driven not by necessity but by opportunity/ improvement motives when they actually decide to create a new venture.

Nevertheless entrepreneurship is a complex phenomenon that involves a great variety of contexts and factors (Pinillos and Reyes, 2009), the literature has been focusing mainly on the impact of economic variables to it (Wennekers *et. al.*, 2007). It's not until recently that other new explanatory factors, such as culture, have been brought forward (Hofstede, 2004). Cultures could also explain the entrepreneurial attitudes of countries because all persons are involved in a specific external environment that is beyond that person's or a firm's control. (Berger, 1991). In this sense, a country's social organization can support individuals to freely choose their career and also can support them to achieve personal objectives, while some other cultures seem to put more importance on the social stability of the group that the individual belongs to and expect her to act inside their mindsets boundaries.

The main focus of this paper is to assess how education and culture impact on the total entrepreneurial activity of the nations. Though, total entrepreneurial activity is composed of two types of entrepreneurship: opportunity/improvement-driven and necessity-driven entrepreneurship thus the relationship between education and culture and the total entrepreneurial activity of a country has to be analyzed through these two types of entrepreneurship.

## **2. Literature Review and Hypothesis Development**

### **2.1. Education and Entrepreneurship**

Entrepreneurship and education seem to find their crossroads in the process of opportunity discover and consequent intention to exploit that given opportunity. It is because entrepreneurs may recognize opportunities well in advance, or just before they set up their business. Consequently, the perception of opportunities relative to new business starts can take many different paths (Kelley *et. al.*, 2010) but it seems to be highly enhanced by education. This is confirmed by the Global Entrepreneurship Monitor project, which ranks education as one of the most important factors that make a country entrepreneurial, because individuals need a set of skills in order to perceive opportunities and to know how to exploit them. Economic opportunities arise from technical and/or organizational innovations, often through the making of new combinations of resources (Schumpeter 1968) done primarily by the entrepreneur through a small business. Opportunity perception is the most distinctive and fundamental characteristic of entrepreneurial behavior (Kirzner, 1973).

Many researches have proven this idea empirically from the various contexts. Aidis and Mickiewicz (2004) found, after analyzing a sample of 399 small and medium size companies in Lithuania, that the characteristics of the owners of the ventures mattered considerably. Characteristics such as higher education, previous job experience or additional entrepreneurial experience are the differential elements in the possibility of a new business to be created and expanded relatively to those entrepreneurs who start new ventures without the mentioned resources. Opportunity recognition and effective management seem to be both preconditions and necessary inputs in order to assure a sustainable development of the

venture. In the same line, Sexton and Upton (1985) found that human capital, measured by work experience, education and other skills that increase knowledge accumulation are not only important characteristics of entrepreneurial capacity but have a positive influence on both firm creation, survival, growth and entrepreneurial performance (Cooper and Gimeno-Gascon, 1992; Chandler and Hanks, 1998). Peña (2002), through the study of 114 new ventures in Spain intended to analyze the influence of intellectual capital components (education) in new firm survival and growth. Bontis *et. al.*, (2000) suggests the existence of a significant positive relationship of intellectual capital with business performance, regardless of the industry sector. Morris and Pitt (1995) made an interesting research in small townships in the Republic of South Africa in where they also confirmed the positive relationship between entrepreneurship and education. Van der Sluis *et. al.*, (2008) posit that education would enhance managerial ability, which in turn increases the probability of entrepreneurship. Goedhuys and Sleuwaegen (2000) analyzed a database in Cote d'Ivoire and found support to the idea that superior education is one of the determinants of high firm performance in new ventures.

Drucker (1985) noted that the most likely reason for such a large failure rate among new business start-ups is because most people do not know what they are doing. If an entrepreneur is opportunity/improvement motivated, it's possible that she doesn't know what she's doing. In the contrary, necessity driven entrepreneurs are likely to be less fit respective to the processes of venture creation and effective management. Eckhardt and Shane (2003) state that opportunities are discovered when the entrepreneur identifies a match between the world she observes and her unique skills, capabilities and social capital.

The role of the entrepreneur is to discover, evaluate, and exploit entrepreneurial opportunities that is, new products and services, new strategies and organizational forms, new markets, processes and raw materials that did not previously exist (Shane and Venkataraman, 2000). The business opportunity is one that is not expected and an economic opportunity that is not valued but that someone has the knowledge and ability to see it and take advantage of it. They also maintain that individuals' ability to recognize opportunities is dependent on: first, the possession of the prior information necessary to identify an opportunity and second, the cognitive properties necessary to value it. Whether the entrepreneur will be able to see the opportunity in any given situation will depend on her ability to comprehend, analyze and make sense of the feedback received, as well as on her ability to translate this information into the economic language of supply and demand.

Necessity entrepreneurship activity, however, will have no significant relationship or even a negative relationship with economic growth rates. Individuals motivated by necessity are driven to become entrepreneurs due to lack of other employment opportunities. This type of entrepreneurship reflects the "refugee" effect described by Audrestch *et. al.*, (2001). Individuals in this "refugee" position tend to possess fewer endowments of human capital and entrepreneurial capability, as argued by Lucas (1978). In line with Kelley *et. al.*, (2010), who implies that both necessity-driven and improvement/opportunity entrepreneurship activities require a process of idea developing; but that actually the difference is approaching to an idea with the knowledge endowments or without them; with knowledge as the most important resource or without it. In high-income countries, opportunity perception mediates fully the relationship between the level of post-secondary entrepreneurship education and training in a country and its rate of new business activity, including high-growth expectation new business activity (Levie and Auctio, 2008).

The GEM model (Kelley *et. al.*, 2011) suggests that new business activity takes place when those who believe they have the skills, knowledge and motivation to start a business perceive an opportunity to do so. Technical business start-up skills alone are not enough,

an individual must perceive and opportunity before action can be taken. Thus, we can develop the following H1.

**Hypothesis 1:**

**There is a positive relationship between the level of post-secondary education of a country and opportunity-entrepreneurship.**

## **2.2. Culture and Entrepreneurship**

Despite the importance of education, it alone doesn't have any positive effect on people if it's not accompanied with the correct elements and incentives to make it productive (Easterly, 2000). Moreover, education is likely to be not the only non-economical element that can foster the survival of new ventures after a specific time; in fact, there could be other reasons why countries have similar levels of income and education but a different ratio of entrepreneurial activity (Pinillos and Reyes, 2009). For instance, Wennekers *et al.*, (2007) suggests that the entrepreneurship literature has focused mainly on economic issues to try to understand why some countries have higher start-up rates than others and why some of them have longer venture survival rates. They suggest that there is a general intuition that cultural variables can explain these differences in entrepreneurial activity in different countries, especially in terms of persistence, as cultural aspects are possibly of an even more permanent nature than economic conditions. Reynolds *et al.*, (1999) suggest that no matter how rich a country is in opportunities and how well endowed it is with capacity for business start-ups, the extent to which society regards the pursuit of opportunity as socially legitimate will impact the level of entrepreneurial activity. A set of social and cultural values that legitimize -indeed encourage- new enterprises is a prerequisite of entrepreneurial activity and a defining feature of an entrepreneurial society.

Cultures, by definition, are qualitative, not quantitative. Attempts to attach numbers to various cultures only invite errors and misunderstandings. Every culture consists of people who are different in many ways (Steers and Nardon, 2006) therefore it is a hard task to find a suitable definition of culture and to use it as a determinant variable in a study. Hofstede (1984) explains that culture is the collective programming of the mind, which distinguishes the members of one group or society from those of another. Steers and Nardon (2006) suggest there is a more simple approach to this problem, which will be used in this study: culture is the collection of beliefs, values, behaviors, customs, and attitudes that distinguish the people of one society from those of another.

The cultural differences that exist between countries have been widely studied for many decades and there have been several cultural models of differences attempting to approach the issue in a comprehensive and adequate way (Steers and Nardon, 2006). Among the most important models are the ones developed by Edward Hall (1990), Geert Hofstede (1980), Fons Trompenaars (1998) and Robert House (2004) and his GLOBE associates. Each model has a distinct focus, although there is some overlap in places.

**2.2.1. Cultural Models:** Edward T. Hall focuses principally on how cultures vary in interpersonal communication, but also includes work on personal space and time. He divides his model in the mentioned way stating that countries could be low-context cultures and high-context cultures depending on the amount of context that surrounds the messages; centers of power or centers of community following patterns of behavior in the communication moment such as the distance and physical touch between the interlocutors; and monochronic or polychronic cultures which can be differentiated by the amount of stress that people confers to schedules, deadlines and appointments versus a more relaxed view on the same issues (Steers and Nardon, 2006).

Gert Hofstede developed a model that has become the most widely used approach to studying cultural differences as they relate to business organization and management. His work is based on the assumption that different cultures can be distinguished based on

differences in what they value, thus he created a five-dimension model in order to distinguish cultures: the first dimension is the power distance which refers to the beliefs that people have about the appropriateness of either large or small differences in power and authority among the members of a group or society. His second dimension focuses on the extent to which people are comfortable with uncertainty and ambiguity, which is called uncertainty avoidance. Hofstede's most controversial dimension is what he termed the masculinity-femininity dimension, which explains the differences between cultures in terms of the aggressiveness in pursuing goals by the members of a society and the placement of high value to achievement, decisiveness and assertiveness in contrast with those cultures where communal goals and quality of life are more valued than success and those related values (Steers and Nardon, 2006). The fourth cultural determinant of Hofstede is what he termed long vs. short term orientation which, as its name clearly indicates, emphasizes the importance that cultures give to the fact of working for today compared to working for tomorrow. And the last, and probably Hofstede's academically most used determinant is the individualism-collectivism variable, which explains a society's social organization in terms of self sufficiency, self control and self success in contrast with social welfare and a commonly shared development.

Fons Trompenaars presents a somewhat different model of culture through seven dimensions, the first five focus on relationships among people, while the last two deal with time orientation and relationship with nature. They are universalism vs. particularism (are rules or relationships more important); individualist vs. collectivist (do people derive their identity from within themselves or their group?); specific vs. diffuse (are an individual's various roles compartmentalized or integrated?); neutral vs. affective (are people free to express their emotions or are they restrained?); achievement vs. ascription (how are people accorded respect and social status?); past/present-oriented vs. future-oriented (do people focus on the past or the future?); inner-directed vs. outer-directed (do people control the environment or does it control them?) (Steers and Nardon, 2006).

The Global Leadership and Organizational Behavior Effectiveness (GLOBE) identified nine cultural dimensions: power distance (degree to which people expect power to be distributed equally), uncertainty avoidance (extent to which people rely on norms, rules, and procedures to reduce unpredictability of future events), humane orientation (refers to the extent to which people reward fairness, altruism, and generosity), institutional collectivism (extent to which society encourages collective distribution of resources and collective action), in-group collectivism (extent to which individuals express pride, loyalty, and cohesiveness in their organizations and families), assertiveness (the degree to which people are assertive, confrontational, and aggressive in relationships with others), gender egalitarianism (degree to which gender differences are minimized), future orientation (extent to which people engage in future-oriented behaviors such as planning, investing, and delayed gratification), and performance orientation (degree to which high performance is encouraged and rewarded) (Steers and Nardon, 2006).

In spite of the high quality of these cultural models, Steers and Nardon (2006) found that it is complicate to walk through a jungle of theories and models. With this motivation in mind they developed "the big five" cultural dimensions. They include: relationship with the environment (mastery versus harmony), social organization (individualism versus collectivism), power distribution (hierarchical versus egalitarian), rule orientation (rule-based versus relationship based), time orientation (monochronic versus polychronic).

Among all the determinants and variables that each of the research streams have identified and named, probably the most influential on the economic arena is the individualism and collectivism determinant, initially developed by Hofstede (1980) but completed and asserted by the other researchers.

**2.2.2. Individualism, Collectivism and Entrepreneurship:** Theory and research generally considered individualism and collectivism as two contrasting points on a continuum (Triandis, 1993; Schwartz, 1990). This view is based on the "presumed conflict between personal interests and in-groups interests" (Schwartz, 1990:40).

Hofstede, who was the first developer of the individualism-collectivism scale, discussed two key findings on the links between individualism-collectivism levels and growth (1991:76). First, he suggests that increases in economic wealth give rise to individualism, not vice versa: wealth provides individualistic choices -one's own room or car, for example. Hofstede, at the country level, also found what Morris *et. al.*, (1993) discovered within firms: too much of either individualism or collectivism tends to slow economic growth.

Individualist countries may foster development of an individual's self-concept and self-confidence. There is also likely to be a greater sense of personal responsibility for performance outcomes, while interpersonal competition may generate a steady stream of ideas for innovative change. However there is also likely to be an emphasis on personal gain, selfishness, and expediency, traits that seem to be entrepreneurship supportive. Furthermore, high levels of personal stress are likely a by-product of this type of environment, and interpersonal conflict may be encouraged (Morris *et. al.*, 1994). Collectivism offers the advantage of more harmonious relationships among individuals. In this type of culture, greater synergies may occur from the combined efforts of people with diverse skills, while individuals may enjoy a network of social support. Alternatively, there is likely to be a loss of one's self to the group or organizational persona, and a greater level of emotional dependence on the organization. Individuals may have a greater tendency to "free ride" on the efforts of others, while outcomes may represent compromises among the differing interests participating in a task (Morris *et. al.*, 1994).

If entrepreneurship is an activity that requires a set of moves in order to exploit an opportunity (Stevenson *et. al.*, 1989), there must necessarily exist a process of opportunity searching and discovery; the development of a business concept, the assessment and acquisition of the necessary resources, the implementation of the concept and the management and harvesting of the venture (Morris *et. al.*, 1994) thus, individuals engaged in entrepreneurial activities must know how to deal with the activities described above and must have the cultural and personal traits that encourage and motivate them to successfully fulfill those activities. In this section I propose the social organization of a country -individualism or collectivism- can also contribute to the entrepreneurial activity through the opportunity seeking and exploitation behavior.

Based on this, Moore (1986) and Gartner (1985) have suggested that, of all the elements necessary for successful entrepreneurship, the independent entrepreneur is the most critical and that individualism may help explain the amount of new business start-up activity in a society. Entrepreneurship depends on new business forms built around the integration of individualism (Morris *et. al.*, 1994). Individualist countries will produce strong incentives for entrepreneurial behavior (Maidique, 1980; Quinn, 1985; Reich, 1987; Rosenbaum *et. al.*, 1980). Morris *et. al.*, (1994) states that in both the U.S. and South Africa, it appears that entrepreneurship declines the more collectivism is emphasized. Lee *et. al.*, (2013) suggested that collectivism, as well as other cultural traits; intensify the imitation behavior and moderates personal innovativeness while individualism reinforces personal and product innovativeness. People in individualist cultures are more likely to seek information on their own from direct and formal sources; they view themselves as independent decision makers and are somewhat separated from the social context (Kim, 2008). In collectivist societies, most people do not evaluate an innovation on the basis of self-assessment but rather on a subjective evaluation conveyed from other-like-minded individuals who have already adopted the innovation. People in collectivist societies place a great importance on "we" rather than on the individual "I" (Lee *et. al.*, 2013). Pinillos and Reyes (2009) concluded that the relationship between

individualism and entrepreneurial activity (whether the motivation is necessity or opportunity) is statistically significant and that the relationship is positive for the relatively rich countries and negative for the relative poor ones. These results are in line with our ideas because usually relatively underdeveloped countries score high on the collectivist trait, and their opportunity/improvement entrepreneurship motivations are lower than in developed nations, usually individualists, thus we posit that:

**Hypothesis 2:**

**There is a positive relationship between the level of individualism of a country and opportunity-entrepreneurship.**

**Hypothesis 3:**

**There is a positive interaction of the level of tertiary education and individualism of a country and opportunity-entrepreneurship.**

### **3. Research Method**

#### **3.1. Data Collection**

For empirical test, we adopted a Global Entrepreneurship Monitor (GEM) report in which were included 54 countries. The GEM was set up in 1997 as a joint research initiative of Babson College in Wellesley (USA) and the London Business School. A pilot data collection study in six participating countries (Canada, Denmark, Finland, Germany, UK and USA) took place in 1998. Since 1999, a global GEM report has been published each year until 2011 study in which were included 54 countries. The participant countries cover all continents and include developing nations, highly developed countries and transition economies (Sternberg and Wennekers, 2005). GEM is a research project devoted to filling some of the most important gaps in the international data on entrepreneurship, as well as to analyzing these data. To this purpose, GEM developed a unique data collection strategy aimed at several data sources. Each of these data is collected for each year in each GEM country.

#### **3.2. Operationalization and Method**

Our right-side variable “*Opportunity-Improvement Entrepreneurship*” has been developed from the GEM data for the available countries during 2009, 2010 and 2011. Opportunity entrepreneurship is defined as the percentage of those involved in total early-stage entrepreneurial activity (TEA) of a country, who is, first, claim to be driven by opportunity, as opposed to finding no other option for work; and second, indicate the main driver for being involved in this opportunity is being independent or increasing their income, rather than just maintaining it. In contrast, Kelly et al, defined that a necessity-driven entrepreneurship is the percentage of those involved in total early-stage entrepreneurial activity (TEA) that are involved in entrepreneurship because they had no other option for work (Kelley et. al., 2010). GEM measure a specific country's entrepreneurial activity and this is what we call TEA: total entrepreneurial activity. Dependent variable Opportunity entrepreneurship is assessed as a ratio of one to another. Following Kelley et. al., (2011) who states that entrepreneurs in factor-driven economies tend to be equally driven by necessity and opportunity-driven motives but that necessity gradually decreases as a motivator, while opportunity-driven entrepreneurship increases as countries also augment their wages; we have assessed the ratio as follows:

$$o/n = o/o+n$$

In short, "o" is the rate of opportunity-entrepreneurship, "n" the rate of necessity-entrepreneurship and "o+n" the expected increase of opportunity/improvement entrepreneurship over necessity type as economies develop following Kelley et. al.,

(2011)'s definition. Through this, we can assume that innovation driven countries tend to be economically developed from this measure.

Economically developed countries tend to have higher levels of education and individualism, consequently higher levels of opportunity-driven entrepreneurship than necessity-driven. It's worth to note that innovation-driven countries do not necessarily have higher rates of TEA, however. In fact, they show the lowest rates while factor-driven countries (less developed ones) tend to show the highest rates of TEA. It is in this paradox where our dependent variable works: in factor-driven countries, even though they have the highest TEA rates, opportunity-motivated entrepreneurship is the lowest and necessity-motivated type ranks the highest.

Our first independent variable, "*education level of a country*", has been assessed as the tertiary education penetration rate for each country published by the World Economic Forum's Global Competitiveness Report. The World Economic Forum is an independent organization committed to improving the state of the world by engaging business, political, academic and other leaders of society to shape global, regional and industry agendas (Schwab, 2009).

The second independent variable has been pulled from Hofstede (1980) cultural determinants study. As mentioned before, Hofstede's model has become the most widely used approach to studying cultural differences as they relate to business organizations and management (Steers & Nardon, 2006). Data for this variable is also a scale one, with values ranging from 0 less individualist to 100 most individualists.

We also adopted couple of different control variables, because we believe that the relationship between the level of education of a country and the level of individualism to the opportunity -motivated type of entrepreneurship has to be influenced by some other economic factors that are present in the environment of the entrepreneur. In this research we have considered that economic freedom, corruption levels and protection of property rights should be controlled in order to more effectively assess the relationship between our variables. Those ideas are from William Baumol's (1990) theory of productive and unproductive entrepreneurship. When institutions provide for secure property rights, a fair and balanced judicial system, contract enforcement, and effective constitutional limits on government's ability to transfer wealth through taxation and regulation, it reduces the profitability of unproductive political and legal entrepreneurship. Under this incentive structure, creative individuals are more likely to engage in the creation of new wealth through productive market entrepreneurship (Sobel, 2008). Economic freedom control variable and protection of property rights are assessed from the Heritage Foundation's Index of Economic Freedom for the respective years. Corruption levels have been obtained from the Transparency's International Corruption Perception Index for the same years.

Multiple regression analysis was carried out after controlling for the effects that the economic freedom, perception of corruption and protection of property rights protection and the interaction effect between education and individualism have on it.

#### **4. Results**

Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity, and there were no problem.

Using only control variables input into the regression, we tested the impact of control variables on opportunity-entrepreneurship in Model 1 (Table 1). Regression results show and as it can be noted, only the corruption perception in our sample affects positively and strongly the rate of opportunity- entrepreneurship versus necessity (45%  $p < .05$ ). The remaining two control variables, economic freedom and property right, do not show any significance on the analysis not even without the effect of the independent variables.

We added independent variables in Model 2 and 3, and both results show that there is significant positive relationship. In model 4 where the expected impact of the independent variables, we checked the relative impact of those two independent variables. As shown, tertiary education level explains a considerable good proportion of the variation of opportunity driven entrepreneurship over necessity-driven type in our sample. The result scores 31% and significant at the  $p < .05$  level; thus supporting Hypothesis 1.

<Table 1<sup>2</sup>>

Variable	opp/nec: Regression Results			
	Model 1	Model 2	Model 3	Model 4
LNFreedom	<b>-.100</b> (.247)	<b>-.028</b> (.237)	<b>.107</b> (.239)	<b>.109</b> (.241)
LNCorruption	<b>.451*</b> (.073)	<b>.251</b> (.075)	<b>.073</b> (.080)	<b>.062</b> (.081)
LNProperty	<b>.278</b> (.069)	<b>.298</b> (.066)	<b>.197</b> (.065)	<b>.197</b> (.066)
LNEducation		<b>.291*</b> (.027)	<b>.269*</b> (.027)	<b>.309*</b> (.034)
Individualism			<b>.267*</b> (.001)	<b>.246*</b> (.001)
LNedu*Indiv				<b>.058</b> (.002)
R	.611	.664	.694	.695
R sq.	.374	.440	.481	.483
R sq change	.374	.066	.041	.002

\* p < .05  
 \*\* p < .01  
 \*\*\* p < .001  
 Standard errors are in parentheses

The results for individualism and its expected impact on the opportunity versus necessity entrepreneurship in our sample also show a strong and significant result, 25%  $p < .05$ , supporting Hypothesis 2, however showing a slightly less weight than tertiary education levels.

Our hypothesis 3 which expect the positive correlation of the interaction effect between education and individualism is not supported in our analysis.

## 5. Discussions

As our results confirm, there is a positive influence between the higher education level of a country and the choice of individuals for opportunity entrepreneurship over the necessity type. This goes in line with the commonly held idea that education is worth it and that as years pass, people actually have discovered and truly believed that it is wiser to postpone the engagement into activities that provide economic rents than not being part of a formal education processes. As Drucker (1992), the guru of entrepreneurship on the 20th century confirms, the necessity of education and its impact on the entrepreneurship levels of the nations is a question that nobody asks anymore and the tools and mental processes that it provides to people are fundamental for the development of high impact and quality entrepreneurial processes. In this study we didn't analyze the impact that specific entrepreneurship education at higher levels has on the entrepreneurial perceptions and activities of the nations, however, that is likely to be another interesting topic that can shed more light to the highly important matter of educating people in order to promote economic development through the creation of new and sustainable ventures.

Our results also confirm and support the idea that higher levels of individualism of a society make citizens more prone to engage into entrepreneurial activities. As confirmed by Hofstede (1984) the majority of developed countries score high on the individualism side of the matrix, while the majority of low income ones show high levels of collectivism. This author also confirms that it is economic development what fosters

<sup>2</sup> Guzman and Lee, 2016

individualism, not the other way around as commonly thought. These are the reasons why even though developed countries nowadays show lower levels of total entrepreneurial activities than developing countries; actually those with low levels of entrepreneurial activity are better distributed onto the opportunity/improvement motivation than to the necessity side. People in developed countries tend to start business because they have the knowledge and ability to perceive opportunities and know how to work in order to get to the desired objectives, plus that the economical circumstances and the positive relationship between economic level and individualism (Hofstede, 2004) foster the creation of new business.

Our study cannot be free from some limitations. First of all as considered by Steers and Nardon (2006) engaging into a specific classification of cultures is a hard thing to do and usually leaves some important aspects out of consideration. However, in social sciences we have to deal with this kind of situations and try to minimize the effects as much as possible, which was something done in this work. Also, we analyzed the relationship between higher education and the opportunity or necessity entrepreneurship choice. The literature (Reynolds *et. al.*, 1999 for instance) suggests that the relationship is more important for the secondary level education than for the high education level. We decided to use high education level as our study variable in order to contribute to the Strategic Management literature with a new aspect of education. Another limitation for this research is the number of countries that have available information. Even though 57 is a number with which we can work, a bigger sample translates into more accurate results. However, the limitation comes from the "still young" Global Entrepreneurship Monitor that started in 1999 and included only 7 developed countries. Since then, the data flow especially for factor or efficiency countries, hasn't been steady, thus some countries show information for some years but not reporting data anymore, thus we had to eliminate them.

In short, our results show that, after controlling for other entrepreneurship determinants variables borrowed from the institutional theory of entrepreneurship, education at the tertiary level *i.e.*, university, college, *etc.*, positively affects the choice of individuals to pursue opportunity driven entrepreneurship. Moreover, individualism is also found to positively affect entrepreneurs' choice. We hope this research contribute in expanding our understanding on global entrepreneurship activities.

## References

- [1] P. Reynolds, M. Hay and M. Camp, "Global Entrepreneurship Monitor 1999 Executive Report", Kauffman Center for Entrepreneurial Leadership, (1999).
- [2] P. Reynolds, M. Hay, W. Bygrave, M. Camp and E. Autio, "Global Entrepreneurship Monitor 2000 Executive Report", Kauffman Center for Entrepreneurship Leadership, (2000).
- [3] M. J. Pinillos and L. Reyes, "Relationship between individualist-collectivist culture and entrepreneurial activity: evidence from Global Entrepreneurship Monitor data", *Small Business Economics*, vol. 37, (2009), pp. 23-37.
- [4] S. Wennekers, R. Thurik, A. V. Stel and N. Noorderhaven, "Uncertainty avoidance and the rate of business ownership across 21 OECD countries, 1976-2004" *Journal of Evolutive Economics*, vol. 17, (2007), pp. 133-160.
- [5] G. Hofstede, "Personality and Culture Revisited: Linking Traits and Dimensions of Culture", *Cross-Cultural Research*, vol. 38, no. 1, (2004), pp. 52-88.
- [6] B. Berger, "The culture of entrepreneurship", San Francisco, CA: ICS Press, (1991).
- [7] D. Kelley, N. Bosma and J. Amorós, "Global Entrepreneurship Monitor, 2010 Global Report", Global Entrepreneurship Association (GERA), (2010).
- [8] J. A. Schumpeter, "The Theory of Economic Development", Cambridge, MA: Harvard University Press, (1968).
- [9] I. Kirzner, "Competition and Entrepreneurshi", Chicago: University of Chicago Press, (1973).
- [10] R. Aidis and T. Mickiewicz, "Entrepreneurs, expectations and business expansion: Lessons from Lithuania", *Europe-Asia Studies*, vol. 58, no. 6, (2006), pp. 855-880.
- [11] D. Sexton and N. Upton, "Entrepreneurship Education: Suggestions for Increasing Effectiveness", *Journal of Small Business Management*, vol. 22, no. 4, (1984), pp. 18-25.

- [12] I. Peña, "Intellectual capital and business start-up success", *Journal of Intellectual Capital*, vol 3, no. 2, (2002), pp. 180-198.
- [13] N. Bontis, W. C. C. Keow and S. Richardson, "Intellectual capital and business performance in Malaysian industries", *Journal of Intellectual Capital*, vol .1, no. 1, (2000), pp. 85-100.
- [14] M. Morris and L. Pitt, "Informal Sector Activity as Entrepreneurship: Insights from a South African Township", *Journal of Small Business Management*, (1995), pp. 78-86
- [15] J. V. D. Sluis and M. V. Praag, "Education and Entrepreneurship Selection and Performance: A Review of the Empirical Literature" *Journal of Economic Surveys*, vol. 22, no. 5, (2008), pp. 795-841.
- [16] M. Goedhuys and L. Sleuwaegen, "Entrepreneurship and Growth of Entrepreneurial firms in Cote d'Ivoire", *Journal of Development Studies*, vol. 36, no. 3, (2000), pp. 123-145.
- [17] P. Drucker, "Innovation and Entrepreneurship", New York: Harper & Row, (1995).
- [18] J. T. Eckhardt and S. A. Shane, "Opportunities and Entrepreneurship", *Journal of Management*, vol. 29, no. 3, (2003), pp. 333-349.
- [19] S. Shane and S. Venkataraman, "The Promise of Entrepreneurship as a Field of Research", *The Academy of Management Review*, vol. 25, no. 1, (2000), pp. 217-226.
- [20] D. Audrestch and R. Thurik, "What's New About the New Economy? Sources of Growth in the Managed and Entrepreneurial Economies", *Industrial and Corporate Change*, vol. 10, no. 1, (2001), pp. 267-315.
- [21] R. E. Lucas, "On the Size Distribution of Business Firms", *The Bell Journal of Economics*, vol. 9, no. 2, (1978), pp. 508-523.
- [22] J. Levie and E. Auctio, "A theoretical Grounding and Test of the GEM Model", *Small Business Economy*, vol. 31, (2008), pp. 235-263.
- [23] K. Donna, S. Singer and M. Herrington, "Global Entrepreneurship Monitor, Global Report", Global Entrepreneurship Research Association, (GERA), (2011).
- [24] W. Easterly, "The Elusive Quest for Growth", The MIT Press. Cambridge, Massachusetts, (2001).
- [25] M. J. Pinillos and L. Reyes, "Relationship between individualist-collectivist culture and entrepreneurial activity: evidence from Global Entrepreneurship Monitor data", *Small Business Economics*, vol. 37, (2009), pp. 23-37.
- [26] R. Steers and L. Nardon, "Managing in the Global Economy", M.E. Sharpe New York, (2006).
- [27] F. Trompenaars and C. H. Turner, "Riding the Waves of Culture: Understanding Cultural Diversity in Global Business", London: McGraw-Hill, (1998).
- [28] R. House, P. Hanges, M. Javidan, P. Dorfman and V. Gupta, "Culture, Leadership and Organizations: The GLOBE Study of 63 Societies", Thousand Oaks, CA: Sage, (2004).
- [29] G. Hofstede, "Culture's Consequences: International Differences in Work-Related Values", Beverly Hills, CA: Sage, (1980).
- [30] H. C. Triandis, "Individualism and Collectivism", Boulder, CO: Westview Press, (1993).
- [31] S. Schwartz, "Individualism-Collectivism: Critique and Proposed Refinements", *Journal of Cross-Cultural Psychology*, vol. 21, no. 2, (1990), pp. 139-157.
- [32] Morris (1993).
- [33] M. Morris, D. Davis and J. Allen, "Fostering Corporate Entrepreneurship: Cross-Cultural Comparisons of the Importance of Individualism versus Collectivism", *Journal of International Business Studies*, vol. 25, no. 1, (1994), pp. 65-89.
- [34] H. H. Stevenson and J. C. Jarillo, "A Paradigm of Entrepreneurship", *Strategic Management Journal*, vol. 11, (1989), pp. 17-27.
- [35] C. Moore, "Understanding Entrepreneurial Behavior", *Academy of Management best papers*, 46th. Annual Meeting, Academy of Management, Chicago, (1986).
- [36] S. G. Lee, S. Trimi and C. Kim, "The Impact of Cultural Differences on Technology Adoption", *Journal of World Business*, vol. 48, (2013), pp. 20-29.
- [37] M. J. Pinillos and L. Reyes, "Relationship between individualist-collectivist culture and entrepreneurial activity: evidence from Global Entrepreneurship Monitor data", *Small Business Economics*, vol. 37, (2009), pp. 23-37.
- [38] R. Sternberg and S. Wennekers, "Determinants and effects of new business creation using global entrepreneurship monitor data", *Small Business Economics*, vol. 24, (2005), pp.193-203
- [39] W. Baumol, "Entrepreneurship: Productive, Unproductive and Destructive", *Journal of Political Economy*, vol. 98, no. 5, (1990), pp. 893-921.
- [40] R. Sobel, "Thesting Baumol: Institutional Quality and the Productivity of Entrepreneurship", *Journal of Business Venturing*, vol. 23, (2008), pp. 641-655.
- [41] G. Sanchez and S. Lee, "Education, Culture and Entrepreneurship", *Advanced Science and Technology Letters*, vol. 126, (2016), pp. 17-22.

