Entrepreneurship and cultural factors. Differences among countries within the same and different regions

María Eugenia Elizundia Cisneros
Universidad Anáhuac México

María Rosa Salamanca Cots
Universidad Anáhuac México

ABSTRACT

This paper examines how two entrepreneurship factors (opportunity and innovation rates), four dimensions (power of distance, uncertainty avoidance, individualism, and long-term orientation) of national culture obtained from the Hofstede framework, and the Doing Business score obtained from World Bank Doing Business (WBDB) database are related to Total Entrepreneurial Activity and Established Businesses, using data from the Global Entrepreneurship Monitor, which provides information on entrepreneurial activity and established business on 62 countries depending on the level of economic development, measured by the Gross Domestic Product per Capita (GDPPC).

Applying a quantitative method, this study tests the effects of cultural factors, opportunity and innovation rates on total entrepreneurial activity and established businesses, depending on the country's income level. The findings indicate that some country's cultural dimensions relate to entrepreneurial activity and established businesses. The effects depend on the level of national wealth of each country.

The results show that cultural variables (collectivism and the avoidance of uncertainty influence entrepreneurial activity. Collectivism tends to increase entrepreneurial activity in countries with low- and medium-income levels, that and the avoidance of uncertainty will decrease total entrepreneurial activity in low- and medium-GDPPC countries. In terms of power of distance, the results reveal that societies in which the power of distance is lower will promote established businesses, especially in high-GDPPC countries. Thus, cultural dimensions are not related to entrepreneurship in the same manner as in countries with differing levels of development.

Keywords: National culture, entrepreneurship, Global Entrepreneurship Monitor, Doing Business, Gross Domestic Product per Capita.

INTRODUCTION

Unemployment and the lack of opportunities worldwide have increased interest in understanding which factors influence new and established businesses in different countries, especially because, in this troubled world, to be an entrepreneur and succeed will be the only way that future generations will have the opportunity to get a job.

There is an important trend associated with encouraging people to start businesses in many economies. However, helping them survive is nearly as important. New businesses create jobs and contribute to dynamism and innovation, but established businesses provide stable employment and exploit the knowledge and social capital accumulated in past experiences (Amorós & Bosma, 2014). Obviously, not all startup efforts will survive, but we need these startups because without them, there is no chance for sustained business activity.

Research has shown that there are substantial differences among countries in each of the two phases (Kelley, Singer, & Harrington, 2015). The question is, why do countries in different regions and with similar development levels present important differences in the degrees of these two stages? (Pinillos & Reyes, 2011; Van Stel, Carree, & Thurik, 2005) Can culture be one of the components that can explain these differences? (Davidsson, 1995; Davidsson & Wiklund, 1997; Fernández-Serrano & Liñán, 2014; Shane, 1993; Wennekers, Thurik, van Stel, & Noorderhaven, 2007).

According to Hofstede (2003), there is supporting evidence that suggests that culture intertwined with economic development can play an important role in explaining the differences in entrepreneurial activities in different countries (Beugelsdijk & Noorderhaven, 2005); (Carree, Van Stel, Thurik, & Wennekers, 2007). How do cultural values interact with entrepreneurial activity? How does the relationship between these two factors influence entrepreneurial and survival rate in similar and different countries? (Fernández-Serrano & Liñán, 2014).

Many studies have focused on one or two cultural dimensions and entrepreneurial activities (Liñán, Fernández, & Romero, 2013). However, culture is a multidimensional phenomenon (Hofstede, 2003; Schwartz, 2008); therefore, analyzing only few dimensions does not reflect the total influence in each stage. Attempts at analyzing several of Hofstede's cultural dimensions together remain scarce (Rauch & Rijsdijk, 2013).

This study will be focused on the Total Entrepreneurship Activity (TEA) and Established Businesses (EST) stages and the influence of opportunity and innovation factors (obtained from the Global Entrepreneurship Monitor [GEM], power of distance, uncertainty avoidance, individualism, long-term orientation (obtained from the Hofstede framework) and the Doing Business (DB) factor from the World Bank score in different regions using Gross Domestic Product Per Capita (GDPPC) as a moderator.

This paper is divided into three sections as follows: first, the theoretical framework of and a review of literature on this topic; next, the methodology used and then present the most relevant results, and finally, the article provides important conclusions and future research lines.

REVIEW OF THE LITERATURE

Definition of Entrepreneurship

For nearly three decades, researchers have been discussing the correct definition of entrepreneurship but, to date (Reynolds, Hay, & Camp, 1999), the definition that follows continues to be considered the most broad and exact of this process:

"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." (p:3).

The birth of a business begins when the individual becomes involved in making the business real, and the new firm comes about, starting its infancy stage. If the new firm begins to pay salaries for more than 3 months, it will enter into its adolescence stage and the individual becomes the owner-manager of a new business (up to 3.5 years). These two phases conform what is called "Total early-stage entrepreneurial activity" or TEA (Monitor, 2018). These nascent and new business entrepreneurs contribute to dynamism, innovation, and create new jobs in an economy.

If these startups survive for more than 42 months, the business will become an "Established Firm". These businesses currently confront the goal of survival and growth (Ooghe & De Prijcker, 2008). This is a very important group because they are the ones that create a greater number of more stable jobs and contribute to economic development.

In addition, it is important to know the type of entrepreneurial activity in which countries are engaged. Less-developed countries present a high rate of entrepreneurial activity but one that is especially motivated by necessity and relatively lower rates of entrepreneurship motivated by opportunity (Larroulet & Couyoumdjian, 2009). As economies develop, the rate of new business startups decreases as a growing number of people find stable jobs, but this rate increases again in highly developed economies where there are relatively low levels of entrepreneurship motivated by necessity and high levels of entrepreneurship motivated by opportunity (Carree, Stel, Thurik, & Wennekers, 2002; Thurik & Wennekers, 2004; Wennekers, Van Wennekers, Thurik & Reynolds, 2005; Carree et al., 2007). This study will focus only on businesses motivated by the opportunity factor because these are those that contribute more to the economy.

Entrepreneurship and Opportunity

Shane (2000) defines entrepreneurship as the study of sources of opportunities. Not all entrepreneurial activity is induced by the same motives. Opportunity entrepreneurs represent the voluntary nature of participation and expect to either earn more money or be more independent, as opposed to maintaining income (Zoltan & Storey, 2004). These entrepreneurs enter these new businesses with a more solid basis and in an area of their expertise in which they detect the opportunity. These factors lead to a longer survival rate and higher growth and are those that contribute to economic development (Wennekers et al., 2005).

Entrepreneurship and Innovation

Entrepreneurship and innovation are positively related with each other and interact to help an organization to flourish. Their combination is vital to organizational success in today's dynamic and changing environment (Zhao, 2005).

Nearly all entrepreneurs embrace innovation. It is the result of new ideas for attempting to resolve different things and attempting to find new methods and technologies for doing the same thing (Pahnke, Katila, & Eisenhardt, 2015). The problem is that it is a very difficult process and it is thought that entrepreneurs with a more diverse knowledge structure will create and select newer ideas than those with access to a narrower knowledge structure (Xu, 2011). Also, new firms and established ones need to create and accelerate innovation to protect themselves from imitation (Teece, Pisano, & Shuen, 1997).

Culture

Culture shapes the development of different personalities and motivates individuals in a society to engage in behaviors that other do not have (Pinillos and Reyes, 2011; Mueller and Thomas, 2001). It is the collective programming of the mind that distinguishes the members of one group of persons from another and consists of patterns of ideas and especially their attached values, which are conserved and passed down from generation to generation (Hofstede, 1984; 2011). Hofstede's cultural dimensions are very useful for identifying key aspects of culture related to the potential for entrepreneurial activity (Mueller, Thomas, & Jaeger, 2002).

Hofstede (1984, 2001, & 2011) found cultural differences along the following dimensions: power distance; uncertainty avoidance; individualism, and long-term orientation. Power distance is the extent to which one accepts that power in institutions and organizations is distributed unequally. Uncertainty avoidance refers to the level of stress in a society in the face of an unknown future. Individualism–collectivism refers to the degree of integration of individuals into primary groups. Long-short term orientation refers to that some societies take a long-term view of life while others have a traditional short-term outlook.

Entrepreneurship and cultural factors

The link between culture and entrepreneurship has been studied for decades (Schumpeter, 2013; McClelland, 1967; Weber, 2009). Some of these studies suggest that entrepreneurs share a common set of values regardless of the culture (McGrath, MacMillan & Scheinberg, 1992), while other studies support the idea that some cultural factors will affect entrepreneurship activity (Busenitz & Lau, 1996). Gartner (1989) established that, since entrepreneurship is a set of activities initiated by an entrepreneur, cultural practices, as a set of how things are done, are important for entrepreneurship activities.

The study of Davidsson (1995) considers that culture can influence entrepreneurship in two ways. First, a national culture of support leads to social legitimacy, making the entrepreneurial career more valued and socially recognized, rendering a favorable environment. Second, a culture that shares more entrepreneurial values and patterns of thinking would lead more individuals to exhibit psychological traits and attitudes consistent with the entrepreneurial spirit (Fernández-Serrano & Liñán, 2014).

Other studies demonstrate that the relationship between cultural factors and entrepreneurship are not permanent and that they change as the level of development increases (Shane, Venkataraman, & MacMillan, 1995; Tung, Walls, & Frese, 2007). Zhao, Li, & Rauch (2012) argue that national wealth (measured as GDPPC) as a moderator variable may act on the effects of culture on entrepreneurship. Thus, depending on the wealth of a country, culture may exert a positive or negative effect on entrepreneurial activities.

Entrepreneurship and individualism–collectivism

Some researchers have found empirical evidence that supports the idea that individualism favors the creation of new companies because individualism is associated with the motivation to achieve and pursue personal goals (McGrath et al., 1992; Wennekers et al., 2007). Contrariwise, other authors suggest that a higher degree of collectivism is positively related to entrepreneurial activity (Hunt and Levie, 2003), because collectivism provides support and social resources and a protective environment that minimizes the uncertainty associated with business creation (Stewart, 1989).

As it notes herein, there are no simple relationships among entrepreneurship, individualism, and collectivism. Some authors argue that this relationship can depend on the level of wealth of each country (Zhao et al., 2012).

Entrepreneurship and future orientation

Higher long-term orientation has been positively associated with entrepreneurial activity. Cultures with high long-term orientation anticipate potential future opportunities in a changing environment and tend to engage in future-oriented behaviors such as planning, investing in the future, and saving. Countries with a great future orientation possess a strong capacity and willingness to visualize possible contingencies in the future, seek to achieve higher goals, develop strategies to meet their future aspirations, and are expected to have a higher quality of entrepreneurial activity (House, Hanges, Javidan, Dorfman & Gupta, 2004).

To the contrary, future orientation implies that one thinks about the future because one is concerned about it and avoids uncertainty (Ashkanasy, Gupta, Mayfield & Trevor-Roberts, 2004). Therefore, future orientation may sometimes be negatively related to entrepreneurship, because people might be too concerned about future problems to engage in uncertain efforts (Zhao et al., 2012).

Entrepreneurial activity and uncertainty avoidance

This dimension deals with the tolerance of a society for ambiguity. It indicates to what extent a culture feels uncomfortable or comfortable in unstructured situations. The members avoid uncertainty and seek to minimize the possibility of such situations through strict codes of conduct, laws, and rules (Hofstede 2011)

Cultures with high uncertainty avoidance desire to increase the predictability of future events which they are not normally required encounter in the daily activities of their lives (Dorfman, Javidan, Hanges, Dastmalchian & House, 2012). Cultures valuing uncertainty avoidance seek other sources to provide consistency and security, including

strong government (Sully, De Luque, & Javidan, 2004). These practices suggest that high uncertainty-avoidant countries provide little support for entrepreneurship (Hayton, George & Zahra, 2002). The studies of Mueller et al. (2002) and Shane et al. (1995) found indirect support for the idea that cultures with low uncertainty avoidance are positively associated with entrepreneurial activity.

Entrepreneurial activity and the power of distance

High power-distance countries tend to distribute resources unequally. Thus, it is difficult to take advantage of profitable opportunities and reduces access to resources, skills, and information for potential entrepreneurs in a lower position (Zhao et al., 2012).

Power distance can affect entrepreneurial activity positively because the only way to be independent is to be an entrepreneur. Entrepreneurship can be employed as a tool to struggle for independence and increase power position (Zhao et al., 2012).

Some theories argue that entrepreneurial activity should be higher in low power-distance countries (Hayton et al., 2002; Zhao et al., 2012).

Doing Business

The Doing Business Report is a World Bank publication that measures entrepreneurial activity for each country participating in the study (190 economies). What are their regulations that promote business activity and those that constrain it? They indicate business regulatory costs and can be utilized to analyze the specific regulations that enhancing or constraining investment, productivity, and growth.

Economies are ranked on their facility of doing business, from 1–190. A high score refers to the regulatory environment that promotes the starting and operation of a new business ("Score-Ranking," 2019).

Economic development, cultural factors, and entrepreneurship

There has been a call to study the match between culture and other variables in predicting entrepreneurship (Tung et al., 2007; Shane et al., 1995). In this respect, several studies show that the relationships between cultural factors and entrepreneurship are not permanent and change as the level of development increases. In the study of Wennekers et al. (2005), the authors conclude that, in the relationship between the level of development and entrepreneurial activity, there may exist ‘‘interaction effects in the sense that the level of economic development influences the effects of various other determinants’’. Thus, the fact that the relationship between culture and entrepreneurial activity must be analyzed within the framework of the level of development.

In the study of Zhao et al. (2012), the authors refer to a match between culture and national wealth. They argue that national wealth (measured as GDPPC) is a moderator variable and may activate the effects of culture on entrepreneurship.

The Pinillos and Reyes (2011) study found that the relationship between individualism–collectivism and entrepreneurial activity depends on the level of economic development. Thus, in medium- or low-income countries, high entrepreneurship coexists with a collectivist culture (Wennekers et al., 2007). In turn, in developed countries, higher individualism is associated with an increase in entrepreneurial activity (Busenitz and Lau,

1996; Mueller et al., 2002). Consequently, the current analysis attempts to determine whether a country's individualist–collectivist culture will affect its entrepreneurship differently depending on its level of development (Pinillos and Reyes, 2011).

Furthermore, Wennekers et al. (2007) found empirical evidence that the relationship between uncertainty avoidance and the level of business ownership depends upon the level of economic development (measured by GDPPC). Regarding the relationship among future orientation, entrepreneurship, and economic development, some patterns have been found. To produce high-growth entrepreneurship in a certain society, only future orientation is sufficient; the former also requires a stable and expectable environment to support it. In developed countries, there is a strong institutional environment and a clear policy; this makes future orientation work well. However, in developing countries, the institutional environment is weak, the government changes its policy often; therefore, it is difficult for entrepreneurs to develop high-growth businesses through some future-oriented behaviors (Zhao et al., 2012).

METHODOLOGY

The Global Entrepreneurial Monitor (GEM) project is one of the most important studies on entrepreneurial activity worldwide. Two of the most renowned institutions in the area of business and entrepreneurship initiated this project in the year 1999: Babson College (USA), and London Business School (UK), seeking to form a homogeneous database for all participating countries in order to compare entrepreneurial activity between them and analyze the role of entrepreneurship in their economic growth. It has been more than 20 years since this initiative began, starting with 10 countries. To date, >100 economies of nations throughout the world have been involved in the initiative (Monitor, 2018).

Data on TEA, Established Businesses, Opportunity Rate, and Innovation was obtained from the Global Entrepreneurship Monitor Report (2019) for a sample of 62 countries divided into three groups: low; medium, and high income, employing the World Bank definition.

Regarding cultural dimensions, the numerical values measured for power distance, uncertainty avoidance, individualism, and long-term orientation were taken from Hofstede (2011). These dimensions are interval scales between 0 and 100. For example, a higher value for the IDV (Individualism) dimension indicates countries with individualist cultures, while lower values indicate collectivist cultures.

Data on business regulations was taken from the World Bank Doing Business (WBDB) database ("Doing Business," 2019).

Variable Definition

GDPPC	Level of economic development. Measured by the Gross Domestic Product Per Capita
Total Entrepreneurial Activity	Percentage of the population aged 18-64 years who are either a nascent entrepreneur or new business owner-manager.
Established Business Rate (EST)	Percentage of the population aged 18-64 years who are currently an owner-manager of an established business, i.e., owning and managing a running business that has paid salaries, wages, or any other payments to the owners for more than 42 months
Opportunity Rate (TEAOPP)	Percentage of the population aged 19-64 years (individuals involved in any stage of entrepreneurial activity excluded) who see good opportunities to start a firm in the area where they live
Innovation Rate (INNO)	Percentage of those involved in TEA who indicate that their product or service is new to at least some customers AND that few/no businesses offer the same product
Power of Distance (PDI)	Dimension associated with the different solutions to the basic problem of human inequality
Uncertainty Avoidance (UAI)	Dimension associated with the stress level in a society of an unknown future
Individualism (IDV)	Dimension associated with the integration of individuals into primary groups
Long-Term Orientation (LTO)	Dimension associated with the choice of focus for people's efforts: the future or today.
Doing Business (DB)	Score of an economy's ease of doing business (0-100)

Hypothesis

Based on our review of the literature, we propose the following Hypotheses:

H1: Opportunity, innovation, cultural factors, and Doing Business scores have an influence on TEA in Low- and Middle-income Countries

H2: Opportunity, innovation, cultural factors, and Doing Business scores have an influence on Established Businesses in Low- and Middle-income Countries

H3: Opportunity, innovation, cultural factors, and Doing Business scores have an influence on TEA in High-income Countries

H4: Opportunity, innovation, cultural factors, and Doing Business scores have an influence on Established Businesses in High-income Countries.

Model

The empirical analysis will be divided into two phases. First, descriptive statistics and the Pearson correlation were employed in order to verify whether there was a significant relationship between the dependent variables and the factors proposed.

Second, hierarchical multiple regression analysis was utilized to test hypotheses and the interaction effect among cultural factors, the Doing Business (DB) score, and economic development on entrepreneurial activity and established businesses.

Table 1 (Appendix) presents the descriptive statistics and Pearson correlations among the variables considering all 62 countries. As can be observed in the correlation among the entrepreneurship variables, opportunity has a positive high correlation (0.416**< 0.01) with TEA.

In addition, Table 1 (Appendix) provides some strong correlations between cultural factors and TEA: there is a positive relation with PDI (0.272*< 0.05), and a negative correlation with IDV (-0.429**< 0.01), LTO (-0.348**< 0.01), GPO (-0.448**< 0-01), and DB (-0.519**< 0.01).

Also, in Table 1 (Appendix), shows that the sole variable presenting an important negative correlation (-0.294<0.05) in the Established Business group is the Doing business Score.

RESULTS

A moderation analysis for the regression with the Gross Domestic Product Per Capita (GDPPC) was employed as moderator. Thus, the study analyzed the effect of cultural factors on Entrepreneurial Activity (TEA) and Established businesses (EST) depending on the level of economic development. To avoid multicollinearity, we centered the variables.

For the hierarchical analysis for TEA and EST, first was introduced GDPPC. Second, Doing Business (DB) was introduced. Third, the four cultural variables were included. In addition, in the last step, was performed a regression analysis considering the interaction effect between GDPPC and each cultural variable, in order to know how cultural dimensions, exert an influence TEA and EST, depending on income level.

TEA, Cultural Factors, and GDPPC

The results of the first hierarchical regression for hypotheses with total entrepreneurial activity as the dependent variable are presented in Table 2 (Appendix). A total of four regression models were utilized to test the hypotheses (H1 and H3) concerning the effect of opportunity, innovation, and cultural factors on entrepreneurial activity. The first one of these models was employed for the effect of GDPPC alone (Model 1), the second for the effect of GDPPC and DB (Model 2), and Models 3 and 4 were utilized for the effects of cultural and entrepreneurial variables. GDPPC and DB were included as control variables.

In all instances, Variance Inflation Factors (VIF) and correlation values indicate that multicollinearity does not comprise a problem in these regressions. The highest VIF was

2.27, this observed for the variable individualism–collectivism in Model 3 and, in the correlations, we did not observe any value above 0.7.

In the output summary, the R^2 value in Model 1 is 0.127; 12.7% of variance is in the dependent variable, which is explained by the GDPPC. In Model 2, R^2 is 0.283, the R^2 change in Model 2 is 15.6% with the control variable (DB). The coefficient is negative and highly significant (-0.453, ρ <0.001).

Model 3 includes the four cultural dimensions as explanatory variables. With an R^2 of 0.381; therefore, these variables explain 38.1% of TEA, with an F of 5.650. These results offer support for hypotheses H1 and H3 when cultural factors are included.

The coefficients comprise the contribution of each independent variable. On examining significance, there are only two cultural variables that make a unique statistical contribution. The coefficient for individualism is negative, indicating that entrepreneurial activity is greater in collective than in individualistic cultures (-0.339, ρ <0.05). Also, the coefficient for uncertainty avoidance is negative, indicating that entrepreneurial activity is greater in low cultures with uncertainty avoidance than in high uncertainty- avoidance cultures (-0.238, ρ <0.05). However, the results demonstrate no effect of the Long-Term Orientation and Power-Distance variables in entrepreneurial activity.

In Model 4, was included the four cultural variables, and two entrepreneurial variables: opportunity and innovation. This model also offers support for hypotheses H1 and H3, with an R^2 of 0.557 explaining 55.7% of TEA, with an F of 8.342 when was included the two entrepreneurial variables. In this case, individualism and opportunity contributed to explaining the entrepreneurial activity. For opportunity, there is a significant positive coefficient (0.457, ρ <0.001), inferring that entrepreneurial activity is greater in societies where greater opportunity exists for new businesses. Also, as a cultural factor, there is a negative coefficient, but it was not very significant (-0.268, ρ <0.05), indicating that entrepreneurial activity is greater in collective than in individualistic cultures. However, in this model, when was included opportunity and innovation, the effect of uncertainty avoidance on entrepreneurial orientation was no longer significant.

Established Business, Cultural Factors, and GDPPC

The results of the second hierarchical regression for hypotheses (H2 and H4) with EST as the dependent variable are presented at Table 3 (Appendix). Also, four regression models were employed to test the hypotheses (H2 and H4) concerning the effect of opportunity, innovation, and cultural factors on EST. The first of these is for the effect of GDPPC alone (Model 1), the second for the effect of GDPPC and DB (Model 2), and Models 3 and 4 are for the effects of cultural and entrepreneurial variables, considering GDPPC and DB as control variables.

In all instances, VIF and correlation values indicated that multicollinearity does not comprise a problem in these regressions. The highest VIF was 2.267, this observed for the variable individualism–collectivism in Model 4.

In the output summary, the R^2 value in Model 2 was 0.101, and 10.1% of the variance in established businesses is explained by the GDPPC and DB, but is not significant. Next, the four cultural dimensions (Model 3) were included as explanatory variables. The model shows an R^2 of 0.233; thus, these variables explained 23.3% of EST, with an F-statistic of 2.789. The results offer support for hypotheses H2 and H4 when cultural factors are included. Examining the significance of each coefficient, it can be

observed that there is only one cultural variable that rendered a statistical contribution. The coefficient for power of distance was negative, indicating that businesses will last longer when power of distance is lower (-0.361, ρ <0.05). However, the results demonstrated no effect of the variables of long-term orientation, individualistic, and uncertainty avoidance on EST.

For Model 4, when included opportunity and innovation. This model also offers support for hypotheses H2 and H4, with an R^2 of 0.294, explaining 29.4% of EST, with an F-statistic of 2.752 when included the two entrepreneurial variables.

In this case, power of distance and opportunity contribute to explaining EST. For opportunity, with a positive coefficient (0.278, ρ <0.05), revealing that EST are greater in societies where more opportunity exists. As to power of distance as a cultural factor, there is a negative coefficient (-0.371, ρ <0.05), indicating that Established Businesses will be fewer in societies in which power of distance is higher.

Interaction Effects

As mentioned previously, there is a relationship between cultural factors and GDPPC in entrepreneurial activity and established businesses depending on the level of economic development. The manner in which was proceeded to test these was to include a term of interaction between cultural dimensions and income per capita, because there are differences in the form of the relationship, in other words, the slope. Therefore, it was categorized countries considering low-, medium-, and high-income levels (Aiken & West, 1991; Gignac, 2008).

The results of the interaction between the GDPPC moderators and each cultural variable in predicting TEA and EST are depicted in Tables 4 and 5 (Appendix). Model 1 includes GDPPC, individualism–collectivism, and the interaction between these variables. The following models include the same relationships, but the cultural variables include long-term orientation (Model 2), power of distance (Model 3), and uncertainty avoidance (Model 4). Also, it was plotted the interaction effects (Figures 1 and 2) (Appendix), and found the effects between the "moderator" GDPPC and some cultural dimensions in predicting entrepreneurial activities.

Effects on the levels of entrepreneurial activity and established businesses differed according to the country's level of development. The cultural variables (individualism–collectivism, long-term orientation, and power of distance) affected TEA depending on the level of economic development (Hypotheses 1and 2). In addition, individualism–collectivism affected EST, also depending on the level of economic development (Hypotheses 3 and 4).

As shown in Table 4 (Appendix), the interaction effect increased the adjusted R^2 for the four cultural dimensions. Interaction was positive for individualism and long-term orientation, and negative for power of distance and uncertainty avoidance.

First, interaction between GPPPC and individualism–collectivism was significant in predicting TEA (ß = 0.496, ρ <0.001; R^2 = 0.391, ρ <0.001). Meaning that a high degree of collectivism leads to a higher TEA in low (R^2 = 0.629)- and medium (R^2 = 0.604)-income countries, but there is a weak relationship with high GDPPC countries (R^2 = 0.123) (Figure 1.1) (Appendix).

Second, the interaction between power of distance and GDPPC was also significant in predicting TEA (ß = -0.340, ρ <0.05; R^2 = 0.218, ρ <0.01). Figure 1.3 (Appendix) shows

that a high level of power of distance led to a higher TEA level in low (R^2 = 0.396)- and medium (R^2 = 0.356)-income countries, but there was a weak positive relation in high (R^2 = 0.0100)-income GDPPC countries.

Third, interaction was not significant between GDPPC and two cultural variables (long-term orientation and uncertainty avoidance) in predicting TEA. Nonetheless, Figure 1.2 (Appendix) showed that a high degree of long-term orientation led to a lower level of TEA in medium (R^2 = 0.465)-income countries, but there was a weak negative relation in low (R^2 = 0.100)- and high (R^2 = 0.187)-income GDPPC countries. These results supported Hypothesis 1 for some cultural variables, but it did not support Hypothesis 3 concerning cultural dimensions.

For established businesses, Table 5 (Appendix) presents that the interaction effect increased the adjusted R^2 for the four cultural dimensions. Interaction was positive for individualism–collectivism and long-term orientation and negative for power of distance and uncertainty avoidance.

The interaction between GDPPC and individualism–collectivism was significant in predicting EST (ß = 0.412, ρ <0.01; R^2 = 0.202, ρ <0.01). The results revealed that a high degree of collectivism led to a higher EST in low (R^2 = 0.653)- and medium (R^2 = 0.245)-income countries, but there is a weak relationship with high-income GDPPC countries (R^2 = 0.089) (Figure 2.1) (Appendix).

And, the interaction was not significant between GDPPC and the rest of the cultural variables (long-term orientation, power of distance, and uncertainty avoidance) in predicting EST. These results supported Hypothesis 2 for some cultural variables, but did not support Hypothesis 4 regarding cultural dimensions.

CONCLUSIONS

As established, entrepreneurial activities differ widely among countries depending on the level of economic development and even between countries with the same income level. For this reason, this study proposed the existence of other variables, such as cultural factors, which can explain these differences.

Culture is a very complex entity and it tends to change slowly through the years. Several studies have been carried out to find out how cultural factors influence entrepreneurship. As Jaén, Fernández-Serrano & Liñán (2013) suggest, certain cultural values promote greater entrepreneurial intent in its inhabitants.

However, the present study was carried out directly using four cultural factors and two entrepreneurship variables, in order to analyze their impact on entrepreneurial activity and established businesses, employing GDPPC and DB as moderators. The results show that some cultural factors are good predictors for entrepreneurship, established businesses, and development.

The current study is important because it provides empirical evidence supporting the following conclusions:

First, the country's level of development moderates the relationship between culture and entrepreneurial activity. The findings show that entrepreneurial activity is greater in collective cultures, and countries with low and medium incomes tend to be more collectivist than high-income countries. These results are congruent with those reported by Hunt and Levie (2003), suggesting that a higher degree of collectivism is positively related with entrepreneurial activity because collectivism provides support and social resources and

a protective environment that minimizes the uncertainty associated with creating business (Stewart, 1989). Thus, in medium- or low-income countries, high entrepreneurship tends to coexist with a collectivist culture (Zhao et al., 2012; Pinillos and Reyes, 2011; Wennekers et al., 2007).

Also, entrepreneurial activity is lower in countries where uncertainty avoidance is higher, and this occurs in countries in which the national wealth is lower. This result is consistent with those of Wennekers et al. (2007), whose authors state that the relationship between uncertainty avoidance and the level of business ownership depends on the level of economic development.

In the case of long-term orientation and power of distance, these were not significant in terms of their effect on entrepreneurial activity. Not only is long-term orientation and/or power of distance important, but also it is necessary to analyze the environment of the country in which business is carried out, including the country's stability and expectations.

Second, in addition, the country's level of development moderates the relationship between culture and established businesses. In this case, only power of distance was significant. Established businesses will last longer in cultures that are lower in power of distance, because there is greater involvement and participation by all employees in business decisions.

Third, no significant relations among collectivism–individualism, long-term orientation, and uncertainty avoidance. In this case, it is important to analyze, in addition to cultural factors, other variables that may be related to the rate of established businesses. These will comprise the legal and economic aspects in each country that exert an impact on the performance of the business.

Finally, the results show that the opportunity that exists within a country to be an entrepreneur is positively related with its entrepreneurial activity and established businesses. Therefore, it would be convenient for future investigation to improve with regard to data on the country's economic and legal factors that offer the most opportunities for starting a business and for it to last.

This investigation has important implications that can be very useful for companies intent on starting a business in another country of in order to seek how to manage cultural differences and the benefit of entrepreneurships in the medium and long term. Also, cultures tend to move very slowly, and countries should attempt to move in the direction of seeking to create businesses that will prevail in the long term.

Although it was provided valuable insights concerning the effects of cultural factors, depending on the levels of economic development, entrepreneurial activity, and established businesses, this study has some limitations. The first limitation lies in the number of low-income-level countries included in the sample. These are not sufficient, this due to the lack of available information. Therefore, future investigation could improve data-collection techniques, such as obtaining data from other sources.

Another limitation was that the cultural-factor period considered was not the same as the entrepreneurship variables. However, cultures tend to change, but these changes are miniscule and slow, and it has been demonstrated that countries continue to maintain their traditions and convictions over time. Also, Hofstede's cultural dimensions entertain empirical evidence of their relevance and importance.

Through this investigation, it was established that cultural variables exert an effect entrepreneurial activity; however, there is future research that can be conducted. First,

another investigative line would be to consider other cultural variables, such as those included in the theory of basic human values, developed by Schwartz (2208). Additionally, one can investigate the effect, not only of cultural factors, but also of the legal and economic aspects that affect the way of doing business, according to the income level of each country. The third proposal would be to separate the countries by continent and find the relationship of cultural factors and aspects of entrepreneurship.

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APPENDIX

Table 1. Means, Standard Deviations (SD), and Pearson correlations

Variable	Mean	SD	N	GDP	TEA	EST	OPP	INNO
GDP	25,659	23,806	62	1	-.357**			
TEA	13.14	7.45	62	-.357**	1			
EST	8.19	5.34	62	-0.247	.548**	1		
OPP	45.46	15.35	62	0.23	.416**	0.182	1	
INNO	25.93	9.31	62	.439**	0.027	-0.134	0.246	1

**Correlation is significant at the 0.01 level (2-tailed);
*Correlation is significant at the 0.05 level (2-tailed).

Variable	Mean	SD	N	PDI	IDV	UAI	LTO	DB
PDI	61.56	20.86	62	1				
IDV	42.05	23.28	62	-.686**	1			
UAI	67.26	21.62	62	0.208	-.258*	1		
LTO	43.26	24.63	62	-0.2	0.235	-0.067	1	
DB	71.77	9.07	62	-.370**	.453**	-0.143	.550**	1

**Correlation is significant at the 0.01 level (2-tailed);
*Correlation is significant at the 0.05 level (2-tailed).

Table 2. Results of the hierarchical regression analysis

Dependent variable	TEA			
	Model 1	Model 2	Model 3	Model 4
	β	β	β	β
GDPPC	-0.357**	-0.134	-0.05	-0.245
DB		-0.453***	-0.356*	-0.384**
PDI			-0.088	-0.064
IDV			-0.339*	-0.268*
UAI			-0.238*	-0.06
LTO			-0.092	0.077
OPP				0.457***
INNO				0.132
R	0.357	0.532	0.618	0.747
R^2	0.127**	0.283***	0.381***	0.557***
Adjusted R^2	0.113	0.259	0.314	0.491
F-statistic	8.743	11.635	5.650	8.342

Standardized β shown.

*ρ <0.05; **ρ <0.01; ***ρ <0.001.

Table 3. Results of hierarchical regression analysis

Dependent variable	**ESTABLISHED**			
	Model 1	**Model 2**	**Model 3**	**Model 4**
	β	**β**	**β**	**β**
GDPPC	-0.247*	-0.135	-0.173	-0.212
DB		-0.228	-0.324*	-0.350*
PDI			-0.361*	-0.371*
IDV			-0.326	-0.285
UAI			-0.196	-0.107
LTO			0.184	0.278
OPP				0.278*
INNO				-0.118
R	0.247	0.317	0.483	0.542
R^2	0.061	0.101*	0.233*	0.294**
Adjusted R^2	0.045	0.070	0.150	0.187
F-statistic	3.899	3.296	2.789	2.752

Standardized β shown.

*ρ <0.05; **p <0.01; ***ρ <0.001.

Table 4. Results of hierarchical regression analysis

Dependent variable	**TEA**			
	Model 1	**Model 2**	**Model 3**	**Model 4**
	β (IDV)	**β (LTO)**	**β (PDI)**	**β (UAI)**
GDPPC	-0.357**	-0.357**	-0.357**	-0.357**
R	0.357	0.357	0.357	0.357
R^2	0.127**	0.127**	0.127**	0.127**
Adjusted R^2	0.113	0.113	0.113	0.113
F-statistic	8.743	8.743	8.743	8.743
GDPPC	-0.170	-0.286*	-0.295*	-0.381**
Cultural variable	-0.334*	-0.274*	0.116	-0.161
R	0.452	0.444	0.370	0.391
R^2	0.204***	0.197**	0.137*	0.153**
Adjusted R^2	0.177	0.170	0.108	0.124
F-statistic	7.555	7.237	4.677	5.314
GDPPC	-0.383**	-0.299*	-0.423**	-0.394**
Cultural variable	-0.382**	-0.268*	0.200	-0.167
Interaction	0.496***	0.121	-0.340*	-0.037
R	0.625	0.460	0.467	0.392
R^2	0.391***	0.212**	0.218**	0.154*
Adjusted R^2	0.359	0.171	0.177	0.110
F-statistic	12.397	5.184	5.378	3.514

Standardized β shown.

*ρ <0.05; **ρ <0.01; ***ρ <0.001.

Table 5. Results of hierarchical regression analysis

Dependent variable	**EST**			
	Model 1	Model 2	Model 3	Model 4
	β (IDV)	β (LTO)	β (PDI)	β (UAI)
GDPPC	-0.247"	-0.247"	-0.247"	-0.247"
R	0.247	0.247	0.247	0.247
R^2	0.061"	0.061"	0.061"	0.061"
Adjusted R^2	0.045	0.045	0.045	0.045
F-statistic	3.899	3.899	3.899	3.899
GDPPC	-0.173	-0.256"	-0.345*	-0.272*
Cultural variable	-0.132	0.035	-0.186	-0.168
R	0.270	0.249	0.293	0.298
R^2	0.073"	0.062	0.086"	0.089"
Adjusted R^2	0.042	0.030	0.055	0.058
F-statistic	2.322	1.956	2.774	2.866
GDPPC	-0.350*	-0.272*	-0.406*	-0.260"
Cultural variable	-0.172	0.042	-0.146	-0.163
Interaction	0.412**	0.144	-0.161	-0.034
R	0.449	0.288	0.323	0.299
R^2	0.202**	0.083	0.104"	0.090
Adjusted R^2	0.160	0.035	0.058	0.042
F-statistic	4.884	1.743	2.245	1.901

Standardized β shown.

***ρ <0.001; **ρ <0.01; *ρ <0.05; "ρ <0.10.

Figure 1. Relationships Between Cultural Dimensions and Entrepreneurial Activity, with GDPPC as Moderator

Figure 1.1. Collectivism–individualism and GDPPC on total entrepreneurial activity.

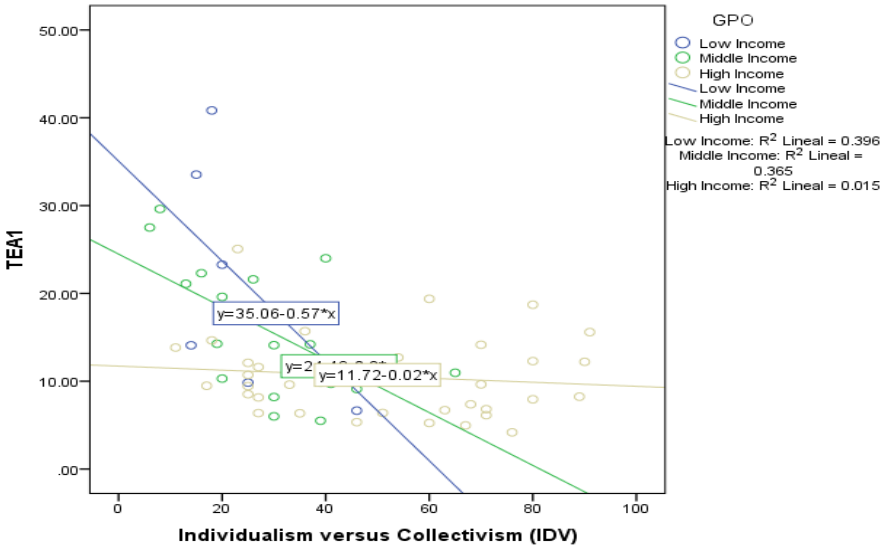

Figure 1.2. Effect of long-term orientation and GDPPC on total entrepreneurial activity.

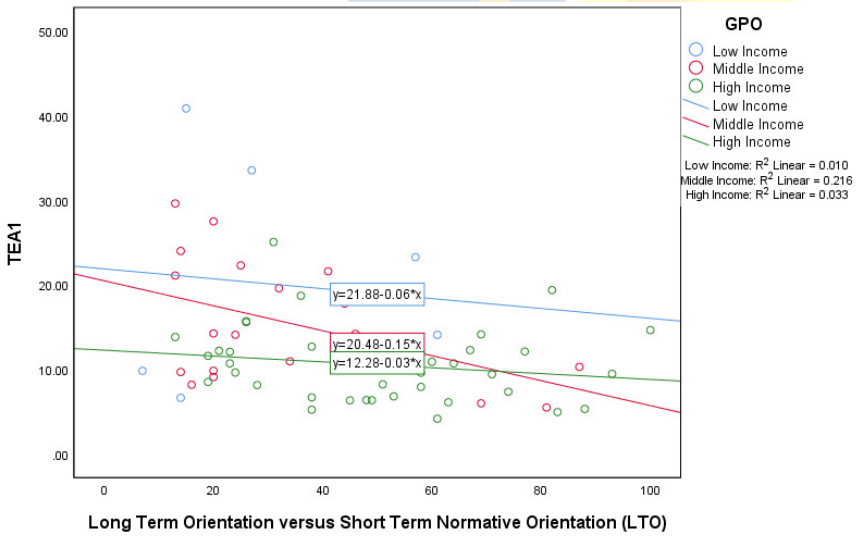

Figure 1.3. Effect of power of distance and GDPPC on total entrepreneurial activity.

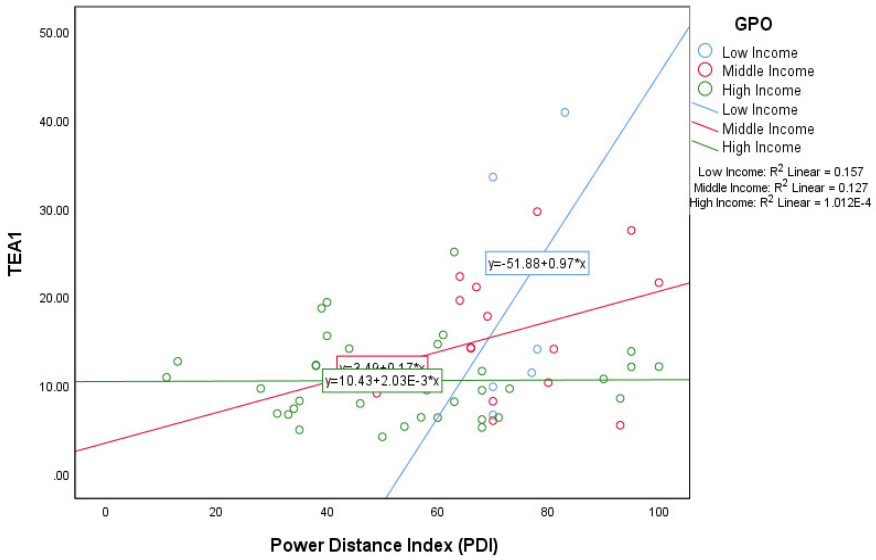

Figure 2. Relationships between Cultural Dimensions and Established Businesses with GDPPC as moderator.

Figure 2.1. Collectivism–individualism and GDPPC on established businesses.