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The Effect of Institutional Dimensions and Cultural Dimensions on the Level of Entrepreneurial Activity Across Countries

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FLORIDA INTERNATIONAL UNIVERSITY

Miami, Florida

THE EFFECT OF INSTITUTIONAL DIMENSIONS AND CULTURAL
DIMENSIONS ON THE LEVEL OF ENTREPRENEURIAL ACTIVITY ACROSS
COUNTRIES

A dissertation submitted in partial fulfillment of

the requirements for the degree of

DOCTOR OF PHILOSOPHY

in

BUSINESS ADMINISTRATION

by

Jung Hoon Kim

2018

To: Dean Joanne Li
College of Business

This dissertation, written by Jung Hoon Kim, and entitled The Effect of Institutional Dimensions and Cultural Dimensions on the Level of Entrepreneurial Activity Across Countries, having been approved in respect to style and intellectual content, is referred to you for judgment.

We have read this dissertation and recommend that it be approved.

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The dissertation of Jung Hoon Kim is approved.

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Vice President for Research and Economic Development
and Dean of the University Graduate School

Florida International University, 2018

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DEDICATION

I dedicate this dissertation to my parents and wife. Without their unconditional support, patience, encouragement, tremendous sacrifice, and love, the completion of this work would not have been possible. Thank you for always believing in me.

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I wish to thank the members of my committee for their support, patience, words of encouragement, and sharing their knowledge. This work would not have been possible without the support, dedication, patience, and feedback of Dr. Von Glinow, the chair of my committee. Her time commitment and guidance have been instrumental in the completion of this dissertation. Also, I would like to thank Dr. Kundu, Dr. Parente, and Dr. Cheng for providing me with endless encouragement and guiding me through all the stages of this dissertation.

ABSTRACT OF THE DISSERTATION

THE EFFECT OF INSTITUTIONAL DIMENSIONS AND CULTURAL
DIMENSIONS ON THE LEVEL OF ENTREPRENEURIAL ACTIVITY ACROSS
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by

Jung Hoon Kim

Florida International University, 2018

Miami, Florida

Professor Mary Ann Von Glinow, Major Professor

Entrepreneurship research is becoming more critical to policymakers and scholars around the world. However, few scholars have explored the effect of national culture or institutions on the entrepreneurial activity using cross-national data. Furthermore, most previous scholars have been limited to formal institutions as a theoretical structure to explore the entrepreneurial activity across countries. It is crucial to include formal, informal institutions and culture to better understand about how much or why entrepreneurial activity differs across countries.

To fill this gap, this study investigates how national culture and institutions impact the level of entrepreneurial activity across 30 countries using cross-national dataset from the World Bank Dataset, the GEM report, and Hofstede's cultural dimensions during the 5-year period from 2009 to 2013. Moreover, this study used two distinct measures of the level of entrepreneurial activity as dependent variables (i.e., the rate of new start-up companies and Total Entrepreneurial Activity).

The results showed that individualism, uncertainty avoidance, power distance, and long-term orientation are essential for explaining the level of entrepreneurial activity across countries. However, the results indicated that only one of the regulative dimensions (i.e., the number of start-up procedures) was significantly related to the level of entrepreneurial activity. Therefore, the finding of this study concludes that national culture may play more important roles than institutions regarding the level of entrepreneurial activity across countries.

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CHAPTER 1

INTRODUCTION

Entrepreneurship research is getting increased attention from scholars and policymakers since it is a crucial source of economic growth, development, innovation, increasing employment, and improving human wellbeing for nations (Ahlstrom & Bruton; 2002; Audretsch, 2007; Dantas, Moreira, & Valente, 2015; Giamartino, McDougall, & Bird, 1993; Wennekers & Thurik, 1999; Simón-Moya, Revuelto-Taboada, & Guerrero, 2014).

Entrepreneurship is a complicated phenomenon that includes various contexts and factors (Pinillos & Reyes, 2011). Entrepreneurial activity can be found in different countries, but entrepreneurship researchers seem to agree that significant differences across countries in the rate of entrepreneurial activity can be observed and remain constant over time (Verheul, Wennekers, Audretsch, & Thurik, 2002; Van Stel, Carree, & Thurik, 2005; Uhlaner & Thurik, 2007; Urbano & Alvarez, 2014; Pinillos & Reyes, 2011; Dantas, Moreira, & Valente, 2015).

For instance, entrepreneurial activity rates in the United States are more than two times higher than in Germany and about three times higher than in Japan (Bosma & Levie, 2010). Entrepreneurship scholars have addressed the reasons why entrepreneurial activity rates vary across countries because of different national cultures, institutions, the level of economic development, social contexts and other factors (Hayton, George, & Zahra, 2002; Bruton, Ahlstrom, & Obloj, 2008; Valdez & Richardson, 2013; Casson, 1995; Luthans, Stajkovic, & Ibrayeva, 2000).

However, in previous entrepreneurship literature, most scholars tend to explain the different rates of entrepreneurial activity across countries based on the level of economic development in different countries (Sternberg & Wennekers, 2005; Acs, Audretsch, & Evans, 1992; Blau, 1987; Evans & Leighton, 1989). Such studies have suggested empirical evidence on the existence of a U-shaped relationship between the rate of entrepreneurial activity and the level of economic development by using data from the Global Entrepreneurship Monitor (GEM) (Wennekers, Van Wennekers, Thurik, & Reynolds, 2005; Carree, Van Stel, Thurik, & Wennekers, 2007; Thurik & Wennekers, 2004; Bosma & Levie, 2010).

The purpose of the Global Entrepreneurship Monitor (GEM) is to provide a long-term multinational database about the relationship between entrepreneurship and economic development (Reynolds, Hay, & Camp, 1999). GEM began in 1999 and had collected globally comparable data on entrepreneurial activity in more than 50 countries of the world (Bergmann, Mueller, & Schrette, 2014). Wennekers et al. (2005) used the GEM 2002 data for nascent entrepreneurship in 36 countries of the world and measured the level of economic development either by innovative capacity index or per capita income. They found the U-shaped relationship between the country's rate of nascent entrepreneurship and its economic development (Wennekers, Van Wennekers, Thurik, & Reynolds, 2005).

Nevertheless, Van Stel et al. (2005) examined how entrepreneurial activity impacts on GDP growth based on the data from 36 countries. Also, they investigated the different level of entrepreneurial activity relies on the level of economic development

measured as GDP per capita (Van Stel, Carree, & Thurik, 2005). By using the GEM data, Van Stel et al. (2005) described that France, Japan, Switzerland, Belgium, the United States, Canada, and Australia have a similar level of economic development. However, they found that France, Japan, Switzerland, and Belgium have a low level of entrepreneurial activity, but the United States, Canada, and Australia have a high level of entrepreneurial activity (Van Stel, Carree, & Thurik, 2005).

Recently entrepreneurship researchers are trying to explain why countries can have similar levels of economic development, but different levels of entrepreneurial activity by using national culture or institutional theory other than only economic development (Hofstede, 2001; North, 1990; Pinillos & Reyes, 2011; Urbano & Alvarez, 2014; Valdez & Richardson, 2013; Bruton, Ahlstrom, & Li, 2010; Dantas, Moreira, & Valente, 2015).

Hofstede (1980) defined national culture as the collective programming of the human mind. National culture helps to understand the differences between countries, groups, and an individual's value (Hofstede, 1980). Moreover, culture influences the organization's values, society's symbols, individual's decisions and interactions unconsciously (Parsons & Shils, 1990). In entrepreneurship research, empirical and conceptual studies suggest that culture plays an essential role in explaining the different levels of entrepreneurial activity across countries. (Dantas, Moreira, & Valente, 2015; Pinillos & Reyes, 2011; Hayton, George, & Zahra, 2002; Mueller & Thomas, 2001).

The recent study by Dantas et al. (2015) examined the direct relationship between Hofstede's cultural dimensions and entrepreneurial activities based on 44 countries by

using the GEM datasets from 2012 and 2013. They concluded that the different national cultures, economic development, and country of origin impact the level of entrepreneurial activities across countries differently (Dantas, Moreira, & Valente, 2015).

Autio et al. (2013) explored the influence of national cultural practices on entrepreneurship by using the GEM and Global Leadership and Organizational Behavior Effectiveness (GLOBE) data from 42 countries for 2005~2008. They found that there is a negative relationship between societal institutional collectivism practices and entrepreneurial entry, but there was a positive relationship between societal institutional collectivism practices and entrepreneurial growth (Autio, Pathak, & Wennberg, 2013).

Furthermore, Pinillos and Reyes (2011) investigated how one cultural dimension (individualist-collectivist orientation) associated with entrepreneurial activity depending on the rate of economic development by using data from GEM in 52 countries. When economic development is medium or low, there is a negative relationship between individualism and the level of entrepreneurial activity, but when economic development is high, there is a positive relationship between individualism and entrepreneurial activity (Pinillos & Reyes, 2011).

According to North (1990), formal and informal institutions can increase or decrease the national entrepreneurial activity, and impact new venture creation directly or indirectly. Institutional theory has provided useful explanations on how societal institutions form what behaviors are accepted and typically followed (Scott, 1995; Powell & DiMaggio, 2012). Previously, Scott (1995) and Kostova (1997) provided a three-dimensional country institutional profile to explicate how the cognitive pillar (shared

social knowledge), regulative pillar (national government policies) and normative pillar (value systems and social norms) impacts domestic business activity.

Moreover, Urbano and Alvarez (2014) observed the relationship between the institutional dimensions and the entrepreneurial activity. They demonstrated that favorable regulative, normative and cognitive institutional dimensions are positively related to the entrepreneurial activity based on the GEM and the World Competitiveness Yearbook (WCY) of the International Institute for Management Development (IMD) data (Urbano & Alvarez, 2014).

Furthermore, Valdez and Richardson (2013) provided the empirical evidence how the institutional dimension influences macro-level entrepreneurship. Their findings suggest that normative, cognitive, and regulative institutions are related to the rate of entrepreneurial activity (Valdez & Richardson, 2013).

Different national cultures and institutions could, directly and indirectly, impact on the level of entrepreneurial activity differentially across countries (Busenitz, Gomez, & Spencer, 2000; North, 1990; Scott, 1995; Kostova, 1997; Hofstede, 1980).

Research Motivation

Although the influence of national culture and institutions on entrepreneurial activity has been examined quite widely, there is limited understanding of the role that national culture and institutions play in influencing the rate of entrepreneurial activity

across countries (Urbano & Alvarez, 2014; Autio, Pathak, & Wennberg, 2013; Dantas, Moreira, & Valente, 2015).

First, few scholars have explored the effect of national culture or institutional dimensions on entrepreneurial activity using cross-national data (Urbano & Alvarez, 2014; Dantas, Moreira, & Valente, 2015). Second, previous entrepreneurship literature did not provide a clear answer how Hofstede's (1980) cultural dimensions relate to the entrepreneurial activity across countries and which of Hofstede's (1980) cultural dimensions are the most important for understanding the level of entrepreneurial activity across countries (Dantas, Moreira, & Valente, 2015; Busenitz, Gomez, & Spencer, 2000). Third, most previous scholars have limited their focus to formal institutions (i.e., the regulative pillar) as a theoretical structure to explore the entrepreneurial activity across countries (Muralidharan & Pathak, 2017). It is crucial to include informal institutions (i.e., the cognitive pillar and normative pillar) to better understand the relationship between the role of institutions and the associated entrepreneurial activity (Szyliowicz & Galvin, 2010; Muralidharan & Pathak, 2017).

Purpose of this study and Research Questions

To fill the gap, the purpose of this study is to empirically investigate how Hofstede's (1980) cultural dimensions (uncertainty avoidance, individualism/collectivism, masculinity/femininity, power distance, and long/short-term orientation) and institutional dimension (cognitive, normative, and regulative pillar)

impact entrepreneurial activity across countries using cross-national data (Scott, 1995; Kostova, 1997).

Moreover, this study examines which cultural and institutional dimension is the most important for explaining the different levels of entrepreneurial activity across countries. Previous entrepreneurship researchers used the rate of new start-up companies from the World Bank Group Entrepreneurship Survey and Total Entrepreneurial Activity (TEA) from the Global Entrepreneurship Monitor (GEM) to measure the level of entrepreneurial activity across countries (Shane & Venkataraman, 2000; Wennekers, Van Wennekers, Thurik, & Reynolds, 2005; Klapper, Laeven, & Rajan, 2006; Chowdhury, Terjesen, & Audretsch, 2015).

Therefore, this study uses two different measures of the level of entrepreneurial activity that are prevalent in the entrepreneurship literature to explore how culture and institutions are related to entrepreneurial activity. Also, this enables us to better compare the effect of culture and institutions on the level of entrepreneurial activity across countries. This study summarizes the conceptual framework in Figure 1.

This study will address the following research questions.

- 1) How cultural and institutional dimensions relate to the level of entrepreneurial activity across countries?
- 2) Which cultural and institutional dimensions are the most important for explaining the level of entrepreneurial activity across countries?
- 3) Which theoretical framework has a more crucial role in understanding the level of entrepreneurial activity across countries?

Figure 1

Conceptual framework

Structure of the Dissertation

The rest of this study is ordered as follows. Chapter 2 reviews the previous research to provide the conceptual background and to develop hypotheses. Chapter 3 presents the data and the statistical methods used in this study to test hypotheses. Chapter 4 provides the results and robustness checks. Finally, chapter 5 concludes with a discussion, limitations, future research directions, implications, and conclusion.

CHAPTER 2

LITERATURE REVIEW AND HYPOTHESES

Entrepreneurship

Entrepreneurship is recognized as a significant driver for economic development through innovation, job creation, and welfare effects (Acs, Desai, & Hessels, 2008). However, there is no one definition of entrepreneurship in the research field (Wiklund, Davidsson, Audretsch, & Karlsson, 2011; Reynolds et al., 2005). Gartner (1985) distinguished between entrepreneurs and non-entrepreneurs.

Moreover, Gartner (1985) used a broad definition such as the new venture creation and provided a framework with four significant perceptions (individual, organization, environment, and process) for explaining the new venture creation in entrepreneurship. Kirzner (1979) emphasized the pursuit of a new opportunity.

The entrepreneurship researchers Shane and Venkataraman (2000) argue that “entrepreneurship involves the nexus of two phenomena: the presence of lucrative opportunities and the presence of enterprising individuals” (p. 218). Casson (2005) characterized the entrepreneur as the individuals who specialize in judgmental decision-making, that is, they evaluate the specific environments that will happen in the future and make choices about how to employ them to generate revenue.

Entrepreneurship academic fields like psychology, sociology, economics, and management all use different theoretical lenses to explain entrepreneurial phenomena (Becker & Knudsen, 2002; Thornton, 1999; Hayton, George, & Zahra, 2002;

McClelland, 1961). Schumpeter (1934) and McClelland (1967) used a psychological perspective in entrepreneurship research. This entrepreneurship perspective changed during the years 1980~2005 (Frese & Gielnik, 2014). Kirchhoff (1991) began by using economic and strategic theories to explain entrepreneurship research. Economists have been more interested in the value of entrepreneurship such as innovation, job creation, human well-being, economic development and growth (Wennekers & Thurik, 1999).

However, recent entrepreneurship scholars have reconsidered the psychological perspective since “entrepreneurship is basically personal” (Frese & Gielnik, 2014; Baum, Frese, Baron, & Katz, 2007). In this perspective, this study defines entrepreneurship as ‘the discovery, evaluation, and exploitation of business opportunities within the individual-opportunity connection’ (Shane & Venkataraman, 2000).

The Global Entrepreneurship Monitor

The Global Entrepreneurship Monitor (GEM) was founded in 1997 by scholars in the Babson College and the London Business School. The first GEM annual report was created in 1999. The first GEM annual report included ten developed countries (United States, Finland, France, Canada, Denmark, Germany, Italy, Israel, Japan, and United Kingdom). Recently, 65 countries have participated in 2016 GEM report. According to the GEM 2016/2017 Global Report, the survey now includes 84.9% of the world’s total GDP and 69.2% of the world’s population.

The GEM annual reports have provided useful data for entrepreneurship research, and a large number of scholars have used the data for explaining the entrepreneurial activity (Van Stel, Carree, & Thurik, 2005; Wennekers, Van Wennekers, Thurik, & Reynolds, 2005; Acs, Desai, & Hessels, 2008). GEM presents the empirical basis for universally relevant research by collecting relevant coordinated data in the form of representative domestic surveys annually (Bergmann, Mueller, & Schrette, 2014).

The purpose of GEM is to measure the different level of entrepreneurial activity across countries, to discover aspects influencing national rates of entrepreneurial activity, and to recognize policies that may improve the national rate of entrepreneurial activity (Bosma, & Levie, 2010).

The GEM collects the primary empirical data from three primary sources. First, the Adult Population Survey (APS) collects the data on entrepreneurial attitudes and activities within each country. Second, the National Expert Survey (NES) uses standardized questionnaires to examine the national entrepreneurship framework condition. Third, qualitative face-to-face interviews (National Expert Interviews) provide a deeper understanding of the entrepreneurship data within each country (Reynolds et al., 2005).

Moreover, the GEM provides the Total Entrepreneurial Activity (TEA) rate from different countries. TEA measures the comparative figure of nascent entrepreneurs and business owners of young companies within each country. These data provide a useful index for determining the level of entrepreneurial activity across countries (Pinillos & Reyes, 2011).

World Bank Entrepreneurship Database

The World Bank Entrepreneurship Database is a crucial data source supporting the measurement of entrepreneurial activity across countries and over time (Klapper & Love, 2011). Moreover, the World Bank data allow a deeper understanding of the relationship between regulative institutions, entrepreneurship, and economic growth (Djankov, 2009).

This study employs the World Bank Database's indicator (the rate of new start-up companies) to measure the level of entrepreneurial activity across countries. The rate of new start-up companies defined as the number of new limited liability corporations registered per 1,000 people (ages 15~64) per year.

Institutions and Entrepreneurship

Institutional theory has been established as a significantly useful theoretical framework to investigate the entrepreneurship literature (Urbano & Alvarez, 2014; Bruton, Ahlstrom, & Li, 2010; Aparicio, Urbano, & Audretsch, 2016). The institutional determinants influence the level of entrepreneurial activity across countries since it defines, limits and generates entrepreneurial opportunities (Simón-Moya, Revuelto-Taboada, & Guerrero, 2014; Aldrich & Fiol, 1994; Urbano, & Alvarez, 2014; Manolova, Eunni, & Gyoshev, 2008; Hwang, & Powell, 2005; Gnyawali & Fogel, 1994). Nevertheless, few entrepreneurship scholars have investigated the empirical relationship

between institutional dimensions and entrepreneurial activity between countries (Bruton, Ahlstrom, & Li, 2010; Urbano & Alvarez, 2014).

The Institutional perspective defines the rules of the game in a society that affects economic behavior of a society (North, 1990; Baumol, 1990). Different institutional environments will affect and may help explicate the different rate of entrepreneurial activity across countries (Simón-Moya, Revuelto-Taboada, & Guerrero, 2014). North (1992) grounded institutions into two broad categories formal and informal institutions. Formal institutions present regulations, status law, common law, while Informal institutions consist of “conventions, norms of behavior, and self-imposed rules of behavior” (North, 1992, p. 4). Scott (1995) classified formal and informal institutions more explicitly into cognitive, regulative, and normative institutional dimensions.

According to North (1990), formal institutions aim to decrease the transaction costs regarding regulations while informal institutions intend to decrease the uncertainty surroundings the decision-making for all individuals (North, 2006). Formal and informal institutions interact with each other, whereby some regulations could be sufficient depending on the shared cultural values, social knowledge, value systems and social norms (Aparicio, Urbano, & Audretsch, 2016).

Therefore, informal institutions bind the attribute of formal institutions and vice versa. In the meantime, formal institutions (regulations, national government policies, status law, and common law) can change in a short period, but informal institutions (the cultural values, shared social knowledge, value system, and social norms) can change more slowly than formal institutions (Williamson, 2000).

In the field of entrepreneurship, some scholars have explored how the three institutional dimensions (cognitive, regulative, and normative pillars) influence domestic entrepreneurial activity (Scott, 1995; Kostova, 1997; Urbano & Alvarez, 2014).

Busenitz, Gomez, and Spencer (2000) provided an empirically validated survey instrument for measuring a country's institutional profile (regulative, cognitive, and normative institutional dimensions) for entrepreneurship research. They concluded that a country's cultural values might well affect its business system. Moreover, they posit that the usefulness of understanding institutional dimensions to evaluate the relationship between institutional profiles and the rate of entrepreneurial activity across countries (Busenitz, Gomez, & Spencer, 2000). Busenitz, Gomez, and Spencer (2000) provided empirical evidence on the different level of a country's institutional dimension influence on the level of entrepreneurial activity from six countries. However, Busenitz, Gomez, and Spencer (2000) did not provide significant findings regarding the relationship between the institutional dimensions and the rate of entrepreneurial activity from six nations (Valdez & Richardson, 2013).

Spencer and Gomez (2004) investigated the relationship between a country's institutional profile and the level of entrepreneurial activity by using Busenitz, Gomez, and Spencer's (2000) validated country institutional profile questionnaire. Their findings suggested that three institutional dimensions and economic factors (per capita GDP) affect entrepreneurial activity in a country (Spencer & Gomez, 2004). Moreover, they posit that the cognitive institutional dimension was positively related to the presence of a small business, the normative institutional dimension was slightly related to self-

employment, and the regulative institutional dimension was connected to new initial stock offerings (Spencer & Gomez, 2004).

Manolova, Eunni, and Gyoshev (2008) empirically validated the Busenitz, Gomez, and Spencer's (2000) instrument for measuring a country's institutional profile by using a sample of 254 business students in three emerging countries: Latvia, Bulgaria, and Hungary. Moreover, their findings suggested that the different institutional profiles promote entrepreneurship differently across the three emerging countries (Manolova, Eunni, & Gyoshev, 2008).

Gupta, Yayla, Sikdar, and Cha (2012) investigated the relationship between a country's institutional profile and the entrepreneurial activity in two countries: South Korea and the United Arab Emirates. They used Busenitz, Gomez, and Spencer's (2000) instrument and collected the data from business students of private universities in Dubai in the UAE and Seoul in South Korea (Gupta, Yayla, Sikdar, & Cha, 2012).

Nevertheless, the previous entrepreneurship research (e.g., Busenitz et al.; Spencer & Gomez, 2001) did not explicitly relate the findings to the level of entrepreneurial activity across countries because of the methodological limitations (Valdez & Richardson, 2013). Despite the limitations of entrepreneurship measurement framework, the previous entrepreneurship literature investigating a country's institutional profile regarding entrepreneurial activity seems to be a promising way. This general framework for entrepreneurship research has been further supported by the GEM data (Valdez & Richardson, 2013). However, few entrepreneurship researchers have explored

the impact of institutional dimensions on the level of entrepreneurial activity using cross-national data (Urbano & Alvarez, 2014).

De Clercq, Danis, and Dakhli (2010) examined empirically institutional dimensions (regulative, cognitive, and normative) as moderating effects in the relationship between associational activity and the rate of new business activity in emerging countries, using data from World Values Survey and the Global Entrepreneurship Monitor (GEM). Moreover, they obtained the levels of new business activity from the GEM's Adult Population Survey and collected data about institutional dimensions (i.e., regulative, cognitive, and normative) from the GEM's Expert Questionnaire (De Clercq, Danis, & Dakhli, 2010).

According to Reynolds et al. (2005), the GEM's Expert Questionnaire uses validated measurement scales and standardized questions to evaluate the national expert's views about the institutional environments for entrepreneurship. Stenholm, Acs, and Wuebker (2013) explored how institutional dimensions influence both the type and the rate of entrepreneurship activity in a country, using data from the GEM.

Valdez and Richardson (2013) investigated the relationship between institutional dimensions and macro-level entrepreneurship empirically. Their findings suggest that three institutional dimensions (normative, cultural-cognitive, and regulative) are related to the entrepreneurial activity (Valdez & Richardson, 2013).

Furthermore, Urbano & Alvarez (2014) examined the relationship between the institutional dimensions (normative, cultural-cognitive, and regulative) and the probability of becoming an entrepreneur, using data from the International Institute for

Management and Development (IMD) and the Global Entrepreneurship Monitor (GEM) from 2008. Also, they found that a favorable regulative business environment (fewer processes to begin a business), a favorable normative business environment (higher media attention for entrepreneurship), and a favorable cognitive business environment (knowing entrepreneurs, fear of business failure less, and the knowledge/skill/experience about a new business) positively related to the entrepreneurial activity (Urbano & Alvarez, 2014).

A recent study authored by Aparicio, Urbano, and Audretsch (2016) explored how the institutional factors influence opportunity entrepreneurship. Their findings suggest that informal institutions (cognitive and normative institutional dimensions) have a higher impact on entrepreneurial activity than formal institutions (regulative institutional dimension) (Aparicio, Urbano, & Audretsch, 2016).

The Regulative Dimension of Institutions

The regulative dimension of institutions consists of regulations, laws, and government policies that promote new business, decrease the risks involved in starting a new company, access entrepreneurs' efforts to obtain resources for new business and restrict others (Busenitz, Gomez, & Spencer, 2000; Spencer & Gómez, 2004). Moreover, regulations and laws can require the responsibilities of small company owners and assign property rights (Spencer & Gómez, 2004; Urbano & Alvarez, 2014).

Gnyawali and Fogel (1994) provide a theoretical framework for entrepreneurial environments and outline different types of public policies to support entrepreneurship (e.g., public policies, regulation, socioeconomic conditions, entrepreneurial skills, financial support and non-financial support).

However, regulations, laws, and government policies (regulative dimension of institutions) can enhance or hinder the entrepreneurial activity (Baumol & Strom, 2007). For example, Ireland and the United Kingdom decreased the risks involved in starting a new business by providing individuals with unemployment compensation if they decide to open a new business (Kirchhoff & Phillips, 1988). Entrepreneurial activities tend to be higher in countries with free markets, less regulation, and few barriers to entry (El-Namaki, 1988).

Stephen, Urbano, and van Hemmen (2005) explain that a government can promote the level of entrepreneurial activity by rewarding entrepreneurs. McMullen, Bagby, and Palich (2008) investigated the relationship between regulative institutions and the rate of entrepreneurial activity by using the GEM 2002 data across 37 countries empirically. They concluded that government policies of economic activity are associated with the rate of entrepreneurial activity across countries (McMullen, Bagby, & Palich, 2008).

Nevertheless, government regulations can hinder entrepreneurial activity (Spencer & Gómez, 2004). Previous entrepreneurship scholars found that insecurity and uncertainty in government regulations may decrease entrepreneurs' interest in developing

long-term growth plans (Tan, 1996) and burdensome procedural requirements for starting a new business may inhibit entrepreneurial activity (Dana, 1990).

According to previous research, the level of entrepreneurial activity can be influenced by laws, regulations, and public policies in several ways (Storey, 1998). This study explores three sets of regulative dimensions: the number of start-up procedures, availability of finance, and total tax rate.

Countries vary in their regulatory requirements to launch a new business. For example, it takes two days to launch a new business in Australia, but 152 days in Brazil (Chowdhury, Terjesen, & Audretsch, 2015). A different number of start-up procedures may impact the level of entrepreneurial activity differently. For instance, extended length of time to get necessary business licenses and permits discourage entrepreneurial activity (Klapper, Laeven, & Rajan, 2006).

The tax rates vary significantly across countries (Gordon & Li, 2009). High taxes may have a negative impact on economic activity (De Haan & Sturm, 2000). Moreover, higher total tax rates are less likely to promote entrepreneurial activity (Braunerhjelm & Eklund, 2014).

Entrepreneurs need financial assets to launch and grow their businesses (Blanchflower & Oswald, 1998). Previous entrepreneurship research argued that the limited availability of financial resources has a significant negative impact on the level of entrepreneurial activity (Beck, Demirgüç-Kunt, & Maksimovic, (2005). Therefore, this study proposes the following hypothesis:

Hypothesis 1a: There is a negative relationship between the number of start-up procedures and the rate of new start-up companies.

Hypothesis 1b: There is a negative relationship between the number of start-up procedures and Total Entrepreneurial Activity (TEA).

Hypothesis 2a: There is a positive relationship between availability of finance and the rate of new start-up companies.

Hypothesis 2b: There is a positive relationship between availability of finance and Total Entrepreneurial Activity (TEA).

Hypothesis 3a: There is a negative relationship between total tax rate and the rate of new start-up companies.

Hypothesis 3b: There is a negative relationship between total tax rate and Total Entrepreneurial Activity (TEA).

The Normative Dimension of Institutions

The normative dimension consists of social values, norms, and beliefs associated with human behavior (Scott, 1995; Bruton, Ahlstrom, & Li, 2010). Social values are conceptions of the desirable or preferred (i.e., what is mostly considered as attractive and favored) and social norms define how things should be done (i.e., what human behavior is acceptable or how society believes matters should be achieved and performed) (Scott, 1995; Urbano & Alvarez, 2014; Valdez & Richardson, 2013).

Human behaviors are influenced by social values and norms directly or indirectly (Hofstede, 1984). Normative perspectives emphasize a more in-depth, moral base for evaluating legitimacy (Veciana & Urbano, 2008). Previous entrepreneurship scholars explored how social attitudes about entrepreneurship influence the level of entrepreneurial activity positively (Gerschenkron, 1954) or negatively (Hawkins, 1993).

Krueger, Reilly, and Carsrud (2000) investigated how social norms, normative beliefs, and attitude (e.g., positive attitude to start one's own business) influence an individuals' entrepreneurial intentions empirically. Their findings suggested that if the beliefs and expectations accept entrepreneurship, their influence on entrepreneurial intention is positive (Krueger, Reilly, & Carsrud, 2000).

Casson (2010) stresses that a country that encourages industrial progress will consider high status on entrepreneurs as compared to countries whose social values sustained constancy. On the other hand, some cultural norms may discourage entrepreneurial activity (Cuervo, 2005).

Therefore, the normative dimension of institutions indicates the degree to which a country's resident prefers entrepreneurs and entrepreneurial activity (Spencer & Gómez, 2004). The above analysis presents the following hypothesis:

Hypothesis 4a: There is a positive relationship between the favorable normative dimension of institutions for entrepreneurship and the rate of new start-up companies.

Hypothesis 4b: There is a positive relationship between the favorable normative dimension of institutions for entrepreneurship and Total Entrepreneurial Activity (TEA).

The Cognitive Dimension of Institutions

The cognitive dimension refers to the nature of social reality and cognitive frameworks through which individuals evaluate information (Stenholm, Acs, & Wuebker, 2013; Urbano & Alvarez, 2014). In the field of entrepreneurship research, the cognitive dimension presents the skills and knowledge owned by people in a region or country, along with the frames they use to establish and start a new business (Spencer & Gómez, 2004; Busenitz, Gomez, & Spencer, 2000).

Within countries or regions, some information becomes a part of a shared social knowledge, and specific knowledge sets and subjects become institutionalized (Busenitz & Barney, 1997). For example, knowledge about how to start a new business may be widely diffused (Busenitz & Lau, 1996). However, individuals may lack the knowledge necessary to know even the most basic steps required to begin and operate a new business in other countries (Busenitz, Gomez, & Spencer, 2000; Spencer & Gómez, 2004).

Arenius and Minniti (2005) examined empirically how subjective perceptions and beliefs of individuals influence entrepreneurial activity by using the Global Entrepreneurship Monitor (GEM) project from 28 countries. Their findings suggested

that, when making decisions, individuals depend on subjective and biased perceptions significantly (Arenius & Minniti, 2005).

The previous study authored by Shane (2000) argued that an entrepreneur's skill and knowledge tend to impact opportunity awareness and exploitation. Therefore, different cognitive dimensions (individuals' skills and knowledge) are likely to impact the level of entrepreneurial activity differently across countries (Mitchell, Smith, Morse, Seawright, Peredo, & McKenzie, 2002).

According to this reason and reflecting the previously discussed studies, this study suggests the following hypothesis:

Hypothesis 5a: There is a positive relationship between the favorable cognitive dimension of institutions for entrepreneurship and the rate of new start-up companies.

Hypothesis 5b: There is a positive relationship between the favorable cognitive dimension of institutions for entrepreneurship and Total Entrepreneurial Activity (TEA).

Culture

Previous scholars have defined culture in many ways (Kroeber & Parsons, 1958; Barnouw, 1979; Kluckhohn, 1951; Pinillos, & Reyes, 2011; Mueller & Thomas 2001; Hofstede, 1980; Herbig, 1994; Geletkanycz, 1997; Ahlstrom & Bruton, 2002). According to Kluckhohn (1951), the definition of culture is for society what memory is for

individuals. Kroeber and Parson (1958) defined culture as “patterns of values, ideas, and other symbolic-meaningful systems as factors in the shaping of human behavior” (Kroeber & Parson, 1958, p. 583).

Barnouw (1979) described culture as “the configuration of . . . stereotyped patterns of learned behavior which are handed down from one generation to the next through the means of language and imitation” (Barnouw, 1979, p. 5).

Building on the work of Kluckhohn (1951) and Kroeber and Parsons (1958), Hofstede (2001) indicated culture as ‘collective programming of the mind that distinguishes the members of one group or category of people from another.’ Moreover, culture is described as a set of shared beliefs, values, and expected behaviors (e.g., Hofstede, 1980; Herbig, 1994).

National culture acts as the framework of reference, which social members apply to understand the organizations, the environment, and human relationships with one another (Geletkanycz, 1997). According to Ahlstrom and Bruton (2002), national culture presented in the cultural values held by society and the institutions that are part of the culture.

Hofstede (1980) suggested that culture impacts on human behavior directly. In the field of entrepreneurship, national culture can promote or hinder entrepreneurial activity at the individual level (Hayton, George, & Zahra, 2002). Therefore, culture is described as the degree to which society thinks entrepreneurship as opportunity recognition and exploitation to be desirable (Zhao, Li, & Rauch, 2012). In this case, a supportive

environment for entrepreneurship (e.g., the way entrepreneurs are socially accepted and desirable) will promote the level of entrepreneurial activity (Krueger, 2000).

Many entrepreneurship scholars (Shane 1993; Thomas & Mueller 2000; Mueller & Thomas 2001; Baughn & Neupert, 2003; Gupta, Turban, Wasti, & Sidkar, 2009; Pinillos & Reyes, 2011; Shinnar, Giacomini, & Janssen, 2012; Dantas, Moreira, & Valente, 2015) have used Hofstede's cultural dimensions (Hofstede, 1980; Hofstede & Bond, 1988; Hofstede, 1991) to investigate the relationship between national culture and entrepreneurial activity across countries.

Previous empirical research linking Hofstede's cultural dimensions to entrepreneurship have focused on culture's connection to individual entrepreneurial characteristics (Baughn & Neupert, 2003). Furthermore, culture enforces specific individual characteristics and penalizes others; previous scholars have connected the Hofstede's cultural dimensions of uncertainty avoidance and individualism to traits related to entrepreneurship (Baughn & Neupert, 2003).

McGrath, MacMillan, and Scheinberg (1992) found that four of Hofstede's cultural dimensions are related to entrepreneurial activities. Shane (1992) explored the relationship between Hofstede's cultural dimensions of individualism and power distance and the rate of national innovation, concluding that individualism is positively related and power distance is negatively related to the rate of national innovation.

Mueller and Thomas (2001) investigated the relationship between culture and entrepreneurial potential in nine countries. They examined two entrepreneurial traits (internal locus of control and innovativeness) and entrepreneurial traits are higher in

cultures which have a high individualism and low uncertainty avoidance (Mueller & Thomas, 2001).

Wennekers, Thurik, van Stel, and Noorderhaven (2007) investigated the relationship between uncertainty avoidance and the level of business ownership across 21 countries by using data from 1976, 1990 and 2004. Their finding suggests that high uncertainty avoidance could encourage individuals towards self-employment (Wennekers, Thurik, van Stel, & Noorderhaven, 2007).

Moreover, Pinillos and Reyes (2011) examined the relationship between one cultural dimension (an individualist-collectivist orientation) and the level of entrepreneurial activity depending on the level of economic development (GDP per capita) by using data from Global Entrepreneurship Monitor across 52 countries. They found that the level of entrepreneurial activity is negatively related to individualism when economic development is medium or low, but the level of entrepreneurial activity is positively associated with individualism when economic development is high. They concluded that individualism was not related to the rate of entrepreneurial activity in the same way across countries with differing levels of economic development (Pinillos & Reyes, 2011).

Recent research has investigated the direct relationship between five of Hofstede's cultural dimensions and entrepreneurial activity across 44 countries by using the Global Entrepreneurship Monitor (GEM) datasets from 2012 and 2013 (Dantas, Moreira, & Valente, 2015). They concluded that national culture was the useful

framework to explain the level of entrepreneurial activity across countries (Dantas, Moreira, & Valente, 2015).

Dheer (2017) investigated the role of culture (individualism-collectivism) as a moderating effect of institutional factors (political freedom, corruption, and education) on entrepreneurial activity across 84 countries by using the GEM data. Dheer concluded that individualism negatively moderates the effect of corruption on the level of entrepreneurial activity and individualism positively moderates the effect of political freedom and education on the level of entrepreneurial activity across countries (Dheer, 2017).

Previous entrepreneurship researchers (Dantas, Moreira, & Valente; 2015, Hayton & Cacciotti, 2013; Kirkman, Lowe, & Gibson, 2006; Marino, Strandholm, Steensma & Weaver, 2002; Thomas & Mueller 2000) consider Hofstede's cultural dimensions as the most broadly accepted among international business, management, and entrepreneurship researchers.

According to Tomas and Mueller (2000), Hofstede's cultural dimensions are useful for finding crucial aspects of culture associated with the potential for entrepreneurial activity. Therefore, this study uses Hofstede's cultural dimensions to investigate the relationship between national culture and the level of entrepreneurial activity across countries.

Hofstede's Cultural Dimensions

Hofstede (1980) constructed four cultural dimensions (individualism/collectivism, uncertainty avoidance, power distance and masculinity/femininity) as an underlying framework to find and clarify differences in values between individuals across countries. The sample consisted of 88,000 employees and managers from IBM's offices and subsidiaries in 50 countries (Mueller & Thomas, 2001).

In 1988, he added a fifth cultural dimension (long-term/short-term orientation) (Hofstede & Bond, 1988). This cultural dimension is useful for identifying the main aspects of culture related to Asian/eastern countries (Dantas, Moreira, & Valente, 2015). Although Hofstede did not explore the relationship between cultural dimensions and entrepreneurial activity across countries, Hofstede's cultural dimensions are valuable for identifying the crucial components of culture related to entrepreneurial activity (Mueller & Thomas, 2001; Kirkman, Lowe, & Gibson, 2006; Pinillos & Reyes, 2011).

Individualism/Collectivism

According to Hofstede (2001), individualism and collectivism are defined "Individualism stands for a society in which the ties between individuals are loose: Everyone is expected to look after him/herself and her/his immediate family only. Collectivism stands for a society in which people from birth onwards are integrated into strong, cohesive in-groups that, throughout people's lifetime, continue to protect them in exchange for unquestioning loyalty" (Hofstede, 2001, p. 225).

Individualists are independent and autonomous from their in-groups, they tend to emphasize personal goals, self-interest, and personal accomplishment, whereas collectivists are inclined to subordinate their accomplishment, self-interest, and personal goals for the sake of their larger collectives (Triandis, 1993; Ramamoorthy & Carroll, 1998).

Furthermore, Individualists tend to go to court to settle the dispute and consider their achievements and rights are first, while collectivists rely on collaboration to accomplish their aims, and they refer methods of conflict resolution that do not harm their relationships (Leung, 1997). People in collectivist cultures feel that they are a necessary part of the group (Hui & Triandis, 1986). According to Hofstede (1980, p. 221), he described individualism as emotional independence from “groups, organizations, or other collectivities.”

Tiessen (1997) provided a theoretical framework to explore the relationship between national culture (individualism and collectivism) and entrepreneurship. Moreover, Tiessen presented the critical characteristics of individualism and collectivism and explained the differences between individualism and collectivism regarding individual goals, values, relationships, and attributions (Tiessen, 1997). According to Tiessen (1997), individual goals are more likely to be related to self-oriented and short-term in individualist culture, while individual objectives tend to be associated with group-oriented and long-term in collectivist culture.

In the field of entrepreneurship research, several scholars have explored the influence of cultural dimension (individualism and collectivism) on entrepreneurship

(Hofstede, 1980; Morris, Avila, & Alien, 1993; McGrath, MacMillan, Yang, & Tsai, 1992; Lee & Peterson, 2000; Mueller & Thomas, 2001; Pinillos & Reyes, 2011). In general, entrepreneurship researchers have hypothesized that entrepreneurial activity is encouraged by cultures that are high in individualism, as it values characteristics as self-oriented, personal achievement, independence, and autonomy (Hayton, George, & Zahra, 2002; Dantas, Moreira, & Valente, 2015).

Although previous empirical evidence provided a positive relationship between individualism and entrepreneurial activity, Thomas and Mueller (2000) posit that the reason behind a positive relationship between individualism and entrepreneurial activities because “the US culture of individualism and achievement has dominated the worldview of entrepreneurship” (Thomas & Mueller, 2000, p. 290).

Authors such as Earley (1993) and Baum et al. (1993) proposed that the motivations of entrepreneurs are not always the same and they suggest that different cultural dimensions (individualism/collectivism) may create different motivations among potential entrepreneurs. Individualism is considered as a source of well-being in some countries, while in others it is considered unacceptable (Peterson, 1988). For example, the welfare of the group is regarded as the best warranty for individuals in the Chinese culture and individualism is considered as the expression of selfishness in China (Hofstede, 2001).

Pinillos and Reyes (2011) investigated the relationship between Hofstede’s cultural dimension (individualism/collectivism) and the level of entrepreneurial activity

across countries. Their findings suggested that there was a positive relationship between collectivism and entrepreneurial activity in developing countries (Pinillos & Reyes, 2011).

According to Bosma and Harding (2007), Peru and Colombia were considered as high collectivism, and these two nations were first and second place in the entrepreneurial activity ranking in 2006.

Tiessen (1997) suggested that the potential entrepreneur needs resources to start and implement his or her business. In collectivistic cultures, strong ties play a significant role in obtaining financial resources, supporting, and starting the new business (Dantas, Moreira, & Valente, 2015). In collectivistic cultures, it makes it easier to obtain the needed resources from friends and family (e.g., personal loans) (Baum et al., 1993; Tiessen, 1997).

Therefore, collectivistic cultures are more likely to impact positively on the potential entrepreneurs to obtain resources (e.g., networks, funding, business knowledge and so on) from their group. This logic proposes the following hypothesis:

Hypothesis 6a: There is a negative relationship between individualism and the rate of new start-up companies.

Hypothesis 6b: There is a negative relationship between individualism and Total Entrepreneurial Activity (TEA).

Uncertainty Avoidance

A cultural characteristic that is highly related to individual attitudes about risk-taking and uncertainty is ‘uncertainty avoidance’ (Wennekers, Thurik, van Stel, & Noorderhaven, 2007). According to Hofstede (1991), he defines uncertainty avoidance as “the extent to which the members of a culture feel threatened by uncertain or unknown situations” (Hofstede, 1991, p. 113). The extent to which members of a society are likely to be uncomfortable about the unpredictability of the future will have implications for entrepreneurial activities and innovation in society (Baughn & Neupert, 2003; Shane, 1995).

In the field of entrepreneurship, uncertainty avoidance is related to the individual’s choice of jobs (Wennekers, Thurik, van Stel, & Noorderhaven, 2007; Autio, Pathak, & Wennberg, 2013; Harms & Groen, 2017) by forming society’s attitudes towards uncertainty and risk-taking (Harms & Groen, 2017), and by presenting an emotional need for rules and processes (Vinogradov & Kolvereid, 2007).

In countries with high uncertainty avoidance, people feel threatened by unknown or uncertain situations. Moreover, in cultures ranking high in uncertainty avoidance members “look for structure in their organizations, institutions, and relationships, which makes events clearly interpretable and predictable” (Hofstede, 2001, p. 148.). High uncertainty avoiding societies emphasize the importance of security (Baughn & Neupert, 2003).

According to Triandis (2004), for example, people in high uncertainty avoidance culture “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). Therefore, people tend to establish rules to predict individual behavior in these cultures (Sully De Luque & Javidan, 2004).

However, in low uncertainty avoidance countries, Hofstede (2001) pointed out that people “not only familiar but also unfamiliar risks are accepted, such as changing jobs and starting activities for which there are no rules” (Hofstede, 2001, p. 148). Therefore, Hofstede (2001) suggested that low uncertainty avoidance “implies a greater willingness to enter into unknown ventures” (Hofstede, 2001, p. 164), such as entrepreneurial activities.

In high uncertainty avoidance, the money and time required to satisfy such complex administrative regulations negatively influence entrepreneurial activity (Lee & Peterson, 2000). Moreover, in bureaucratic societies with excessive regulations and procedural requirements, and numerous institutions from which approvals are required to launch a new business, this has a negative impact on the entrepreneurial activity (Baughn & Neupert, 2003). Furthermore, in these societies, people “prefer established products and services, and investors invest in ventures that reduce risk” (Rauch, Frese, Wang, Unger, Lozada, Kupcha, & Spirina, 2013, p. 736).

According to Hofstede (1984), he described uncertainty avoidance societies as “what or who is different is considered dangerous. Such societies have a low level of social tolerance” (Hofstede, 1984, p. 96). Therefore, high uncertainty avoidance discourages entrepreneurial activity and innovations (Hayton, George, & Zahra, 2002).

The above analysis suggests that any type of entrepreneurial activities is related to risk-taking and the acceptance of uncertainty (Harms & Groen, 2017). Therefore, this study proposes that high uncertainty has a negative impact on the level of entrepreneurial activity.

Hypothesis 7a: There is a negative relationship between uncertainty avoidance and the rate of new start-up companies.

Hypothesis 7b: There is a negative relationship between uncertainty avoidance and Total Entrepreneurial Activity (TEA).

Power Distance

Hofstede (1980, 2001) defined power distance as the degree to which individuals accept hierarchy and inequality. According to Hofstede (2001), he discussed power distance as “Culture sets the level of power distance at which the tendency of the powerful to maintain or increase power distances and the tendency of the less powerful to reduce them will find their equilibrium” (Hofstede, 2001, p. 83-84).

For instance, people in high power distance cultures perceive that authority figures should be respected (Yang, Mossholder, & Peng, 2007), while people in low power distance believe that there are not many distinctions based on hierarchical structure or social stratification (Javidan & House, 2001).

Previous entrepreneurship researchers have argued that power distance is negatively related to the rate of entrepreneurial activity across countries (Hayton, George,

& Zahra 2002). However, empirical studies provided inconsistent results regarding the relationship between power distance and the level of entrepreneurial activity (Zhao, Li, & Rauch, 2012; Dantas, Moreira, & Valente, 2015).

Some scholars argue that power distance can encourage entrepreneurial activity (McGrath, MacMillan, Yang, & Tsai, 1992; Busenitz, & Lau, 1996) because the only way to be independent is to launch a new business (Zhao, Li, & Rauch, 2012). Also, when people in high power distance countries are not satisfied with their current social status. Power distance can positively influence entrepreneurial activity (McGrath, MacMillan, Yang, & Tsai, 1992; Zhao, Li, & Rauch, 2012; Dantas, Moreira, & Valente, 2015) because people deploy entrepreneurship to increase their power position (Zhao, Li, & Rauch, 2012).

Nevertheless, resources have not been distributed equally in high power distance cultures, which decreases the chance of potential entrepreneurs of low social status groups to take advantage of profitable opportunities (Zhao, Li, & Rauch, 2012). Consequently, people of lower position in high power distance countries are less likely to have access to resources and information to discover valuable business opportunities (Kirzner, 1997).

According to Kreiser, Marino, Dickson, and Weaver (2010), they examined the relationship between power distance and risk-taking from 1,048 firms in six countries. Their research concluded that high power distance has a significant negative influence on the level of entrepreneurial activity (Kreiser, Marino, Dickson, & Weaver, 2010).

Moreover, Vinogradov and Kolvereid (2007) investigated the relationship between power distance and the level of entrepreneurial activity among immigrants from different countries of origin in Norway. Their empirical findings suggested that immigrants from low power distance tend to become self-employed (Vinogradov & Kolvereid, 2007).

Power distance is associated with maintaining the status quo because people in high power distance tend to rely on their supervisor and are less likely to change and propose individual initiatives (Hofstede, 1991; Gelekanycz, 1997). People in high power distance countries who accept inequality, are more likely to be satisfied with their position in society (Vinogradov & Kolvereid, 2007; Harms & Groen, 2017).

Furthermore, people in high power distance cultures tend to create tremendous barriers to novelty and change (Hage & Aiken, 1970; Gelekanycz, 1997). For example, people in high power distance countries will keep working on their organization, even though they are not satisfied with their organization's policy (García-Cabrera & García-Soto, 2008; Widiyanto, 2011).

Based on the above analysis, this study suggests that power distance has a negative effect on the level of entrepreneurial activity and proposes the following hypothesis:

Hypothesis 8a: There is a negative relationship between high power distance and the rate of new start-up companies.

Hypothesis 8b: There is a negative relationship between high power distance and Total Entrepreneurial Activity (TEA).

Masculinity/Femininity

According to Hofstede (2001), he defined cultures high on masculinity as "Masculinity stands for a society in which social gender roles are clearly distinct: men are supposed to be assertive, tough, and focused on material success; women are supposed to be more modest, tender, and concerned with the quality of life" (Hofstede, 2001, p. 297).

On the other hand, Hofstede (2001) described cultures high on femininity as "Femininity stands for a society in which social gender roles overlap: Both men and women are supposed to be modest, tender, and concerned with the quality of life" (Hofstede, 2001, p. 297).

For instance, feminine cultures emphasize individual goals, such as human relationships, employment security, concern for others, living area, and developing relationships (Hofstede, 2001). People in feminine societies tend to be more modest and less aggressive than people in masculine societies (Hofstede, 2001).

According to Hofstede (1991), there is a significant difference between masculine and feminine cultures in early child development. For example, children in masculine societies are taught to be tough and independent. Assertiveness is encouraged, and cooperation is regarded as weakness.

However, feminine countries regard assertive behavior as dysfunctional (Hofstede, 1991). Cooperation and mutual benefits are considered as positive behaviors (Steensma, Marino, & Weaver, 2000).

Masculinity is intimately connected to entrepreneurial activity because cultures on high on masculinity emphasize competitiveness and aggressiveness (McGrath, Macmillan, & Scheinberg, 1992; García-Cabrera & García-Soto, 2008), achievement orientation (Vinogradov & Kolvereid, 2007), and materials and wealth (Widianto, 2011; Harms & Groen, 2017).

Moreover, previous entrepreneurship research argued that highly masculine cultures promote entrepreneurial activity (McGrath, MacMillan, & Scheinberg, 1992; Shane, 1993; Hayton, George, & Zahra, 2002; Rubio-Bañón, & Esteban-Lloret, 2016). According to this logic, this study suggests the following hypothesis:

Hypothesis 9a: There is a positive relationship between masculinity and the rate of new start-up companies.

Hypothesis 9b: There is a positive relationship between masculinity and Total Entrepreneurial Activity (TEA).

Long-Term/Short-Term Orientation

Long-term orientation (LTO)/short-term orientation (STO) is Hofstede's (1991) fifth cultural dimension. This cultural dimension was initially developed in research of 23 countries using the Chinese Culture Connection (1987). Long-term orientation is related

to Confucian's ideas regarding tradition, time, patience, thrift, and allowing others to "save face" (Hofstede, 1991; Bearden, Money, & Nevins, 2006).

Hofstede and Bond (1988) initially labeled 'Confucian work dynamism,' and Hofstede (1991) referred to this as long-term orientation (LTO). Hofstede (2001, p. 359) defined these as "Long-Term Orientation stands for the fostering of virtues oriented towards future rewards, in particular, perseverance and thrift. Its opposite pole, Short-Term Orientation, stands for the fostering of virtues related to the past and present, in particular, respect for tradition, preservation of 'face' and fulfilling social obligations."

Children from long-term-oriented countries learn thrift, perseverance, not expecting instant gratification, tenacious goal pursuit, and modesty. On the other hand, children in short-term-oriented cultures are taught to respect social codes. Moreover, people in short-term-oriented societies tend to expect instant gratification of their desires (Hofstede & Minkov, 2010).

Long-term orientation influences how firms perform and make choices (Mosakowsky & Early, 2000). Moreover, previous researchers have investigated the time orientation of firm and the choice of control systems in the entrepreneurship context (Zahra, Hayton & Salvato, 2004), time orientation and entrepreneurial risk behavior (Das & Teng, 1997), and the relationship between long-term orientation and the total entrepreneurial activity (Dantas, Moreira, & Valente, 2015).

According to Busenitz and Lau (1996), people in long-term oriented cultures, which originate from the Confucianism oriented toward the future (Hofstede & Bond, 1988; Hofstede, 1991), tend to generate people with entrepreneurial cognition.

Moreover, the entrepreneurial activity is related to economic growth (Wennekers & Thurik, 1999). In support of this argument, long-term oriented countries (South Korea, China, Hong Kong, Taiwan, and Japan) are the fastest economic growth countries (Hofstede, 1991).

Furthermore, people in long-term oriented cultures are more likely to possess perseverance, thrift, sustained efforts toward slow outcomes, and willingness to subordinate oneself for a goal, which are very significant aspects for entrepreneurship (Dantas, Moreira, & Valente, 2015). The above analysis proposed the following hypothesis:

Hypothesis 10a: There is a positive relationship between long-term orientation and the rate of new start-up companies.

Hypothesis 10b: There is a positive relationship between long-term orientation and Total Entrepreneurial Activity (TEA).

CHAPTER 3

DATA AND METHODS

As this study mentioned before, this study examines how institutional dimensions and cultural dimensions impact the level of entrepreneurial activity across countries. With this intention, the following variables are used for this study.

Dependent variables

This study used two distinct measures of the level of entrepreneurial activity reflecting different varieties of entrepreneurship across countries as dependent variables: the rate of new start-up companies from the World Bank Group Entrepreneurship Survey and Total Entrepreneurial Activity (TEA) from the Global Entrepreneurship Monitor (GEM)

The rate of new start-up companies

This study employed the rate of start-up companies as the dependent variable and collected the data from the World Bank's annual Doing Business report. The rate of new start-up companies refers to a new business density which the number of new limited liability corporations registered in the calendar year (new business registrations per 1,000 people ages 15~64).

The World Bank's annual Doing Business project was launched in 2002, and provides objective measures of regulatory environments and business regulations across 190 countries and selected cities at the subnational and regional level. The first Doing Business report was published in 2003. In 2003, the Doing Business report covered five indicator sets and 133 countries. In 2018, the Doing Business report included 11 indicator sets and 190 countries.

Total Entrepreneurial Activity (TEA)

This study used Total Entrepreneurial Activity (TEA) as the dependent variable and gathered the data from the Global Entrepreneurship Monitor (GEM). The Global Entrepreneurship Monitor (GEM) Adult Population Survey measures country levels of entrepreneurial activity through its Total Entrepreneurial Activity (TEA) index, which defines the percentage of the adult population between the ages of 18 and 64 years who have involved the business or own the business that is less than 42 months old (Xavier, Kelley, Kew, Herrington, & Vorderwülbecke, 2013).

Currently, the GEM project is the most significant research on entrepreneurial activity worldwide, established joint study between two academic institutions, Babson College in the United States and the London Business School in the United Kingdom, to stimulate cross-national evaluations on the rate of entrepreneurial activity across countries, evaluate the role of entrepreneurial activity in national economic development, identify the aspects that account for the differences in the rate of entrepreneurial activity

and implement policies that may be effective in fostering entrepreneurial activities (Urbano & Alvarez, 2014).

Independent variables

Ten independent variables are considered in this research: three regulative dimensions (the number of start-up procedures, availability of finance, and total tax rate), normative dimension, cognitive dimension, individualism/collectivism, uncertainty avoidance, power distance, masculinity/femininity, and long-term/short-term orientation.

For the institutional dimensions (i.e., the number of start-up procedures, availability of finance, total tax rate, normative dimension, and cognitive dimension), this study obtains the data from the World Bank Database and the GEM National Expert Survey (NES), which uses different data source than the GEM Adult Population Survey (APS). The GEM Adult Population Survey (APS) measures individuals' entrepreneurial attitudes, activity and aspirations from a minimum of 2000 adults in each country after 1999 (Reynolds et al., 2005).

Moreover, the GEM National Expert Survey (NES) uses standardized questions and validated measurement scales to evaluate national experts' sights of the favorability of the institutional environment regarding entrepreneurial activity (Reynolds et al., 2005; De Clercq, Danis, & Dakhli, 2010; Danis, De Clercq, & Petricevic, 2011).

Each year, the GEM National Expert Survey (NES) obtains the data from at least 36 experts in each GEM economy (Amorós, Bosma, & Kelly, 2013). Furthermore, the

GEM National Expert Survey (NES) uses a five-point Likert scale, where one means the report is totally false according to the expert and five indicates the report is completely true (Amorós, Bosma, & Kelly, 2013).

Regulative dimensions

The number of start-up procedures indicates the regulatory procedures and administrative burden as measured by the number of start-up procedures required. This study obtained the data from the World Bank's Doing Business project.

Availability of finance measures domestic credit provided by the financial sector as a percentage of the Gross domestic product (GDP). The data were obtained from the World Development Indicator (WDI).

Total tax rate was measured as taxes on income, profits, and capital gains as a percentage of total taxes. Total tax rate was measured with the World Development Indicator (WDI).

Normative dimension

To measure the normative dimension, this study uses the average of the scores on five questions in the GEM National Expert Survey (NES) regarding the extent to which entrepreneurship is a desirable career choice (Reynolds et al., 2005; De Clercq, Danis, & Dakhli, 2010; Danis, De Clercq, & Petricevic, 2011).

Cognitive dimension

For the cognitive dimension, this study employs the average of the scores of five questions in the GEM National Expert Survey (NES) that measure the ability of the national population to launch or manage a new business (Reynolds et al., 2005; De Clercq, Danis, & Dakhli, 2010; Danis, De Clercq, & Petricevic, 2011).

Cultural dimensions

This study obtains the cultural dimensions (i.e., individualism/collectivism, uncertainty avoidance, power distance, masculinity/femininity, and long-term/short-term orientation) from Hofstede's (2001) study. Hofstede's cultural dimensions are based on 117,000 surveys gathered from around 88,000 employees working in 72 countries for a large multinational company (Hofstede, 2001). Hofstede's cultural dimension ranges from 1 to 100. These data were taken from his Website <http://geerthofstede.com/>, based on the Values Survey Module 2013.

Control variables

The level of economic development

Another factor that can affect the level of entrepreneurial activity across countries is the level of economic development in explaining entrepreneurial activity (Wennekers, Van Wennekers, Thurik, & Reynolds, 2005).

Furthermore, results of previous studies have indicated that the level of entrepreneurial activity differs strongly across countries based on the level of economic development (Wennekers, Van Wennekers, Thurik, & Reynolds, 2005; Burgers, Jansen, Van den Bosch, & Volberda, 2009).

Thus, this study controls for different economic sectors (factor-driven economies, efficiency-driven economies, and innovation-driven economies) (Xavier, Kelley, Kew, Herrington, & Vorderwülbecke, 2013). This study uses a dummy variable for different stages of economic development (1 = innovation-driven economies; 0 = factor-driven economies; 0 = efficiency-driven economies).

Year dummy variables

This study employed independently pooled cross sections to increase the sample size. By pooling random samples from a large population in different time periods (from 2009 to 2013). The population may have different distributions at different points in time. Also, these data may not be identically distributed.

Therefore, this study included year dummy variables to capture the change in measures over time, with the year 2009 as the base year (Wooldridge, 2015). Table 1 presents data source and description of the variables used in this study.

Table 1

Data source and description of the variables

Variable	Description and Sources
Dependent Variables	
The Rate of New Start-up Companies	New business density which the number of new limited liability corporations registered in the calendar year (new business registrations per 1,000 people ages 15~64). <i>Source: World Bank Group Entrepreneurship Survey (from 2009 to 2013)</i>
Total Entrepreneurial Activity (TEA)	Percentage of the adult population between the ages of 18 and 64 years who have been involved in the business or own the business that is less than 42 months old (Xavier, Kelley, Kew, Herrington, & Vorderwülbecke, 2013). <i>Source: GEM (from 2009 to 2013)</i>
Independent Variables	
The Number of Start-up Procedures	The regulatory procedures and administrative burden as measured by the number of start-up procedures required. <i>Source: World Bank's Doing Business project (from 2009 to 2013)</i>
Availability of Finance	Domestic credit provided by the financial sector as a percentage of the Gross domestic product (GDP). <i>Source: World Development Indicator (WDI) (from 2009 to 2013)</i>
Total Tax Rate	Taxes on income, profits, and capital gains as a percentage of total taxes. <i>Source: World Development Indicator (WDI) (from 2009 to 2013)</i>
Normative Dimension	The average of the scores (five-point Likert scale) on five questions in the GEM National Expert Survey (NES) regarding the extent to which entrepreneurship is a desirable career choice (De Clercq, Danis, & Dakhli, 2010; Danis, De Clercq, & Petricevic, 2011). <i>Source: GEM NES (from 2009 to 2013)</i>

Cognitive Dimension	The average of the scores (five-point Likert scale) of five questions in the GEM National Expert Survey (NES) that measure the ability of the national population to launch or manage a new business (De Clercq, Danis, & Dakhli, 2010; Danis, De Clercq, & Petricevic, 2011). <i>Source: GEM NES (from 2009 to 2013)</i>
Individualism	Hofstede's cultural dimension ranges from 1 to 100. <i>Source: Hofstede's website (VSM 2013)</i>
Uncertainty Avoidance	Hofstede's cultural dimension ranges from 1 to 100. <i>Source: Hofstede's website (VSM 2013)</i>
Power Distance	Hofstede's cultural dimension ranges from 1 to 100. <i>Source: Hofstede's website (VSM 2013)</i>
Masculinity	Hofstede's cultural dimension ranges from 1 to 100. <i>Source: Hofstede's website (VSM 2013)</i>
Long-term Orientation	Hofstede's cultural dimension ranges from 1 to 100. <i>Source: Hofstede's website (VSM 2013)</i>
<hr/>	
Control Variables	
Economic Development	Dummy variable for different stages of economic development (1 = innovation-driven economies and 0 = efficiency-driven economies). <i>Source: GEM Report (from 2009 to 2013)</i>
Year dummy variables	2009 is the base year. (2010 = Y10, 2011 = Y11, 2012 = Y12, and 2013 = Y13).

Data analysis

This study employs pooled OLS analysis to test the effects of institutional dimensions and cultural dimensions on the level of entrepreneurial activity across countries.

Before conducting pooled OLS analysis, this study employs the Gauss–Markov theorem including linearity, normality, collinearity, and homoskedasticity. First, this study used the histogram and scatter plot between independent and dependent variables to test linearity and normality assumptions. Furthermore, this study employed Jarque–Bera test (Jarque, & Bera, 1980) and confirmed the normality of the data.

A common approach to investigate multicollinearity is to conduct variance inflation factors (VIFs) and Pearson's correlation coefficient. The average VIF of all variables in this model is 2.22, and the highest VIF variable is 3.55, well below the critical rate of 10 (Neter, Wasserman, & Kutner, 1990). Table 2 shows the result of Variance Inflation Factors (VIFs) test. This study posits that multicollinearity is not likely to be a problem in this statistical model.

To check the assumption of homoskedasticity, this study used Breusch-Pagan Lagrange Multiplier test (Breusch & Pagan, 1979), and this study concluded that residuals are not homogeneous for this statistical model. Therefore, this study used heteroskedasticity-robust standard errors to deal with this problem.

The primary model is presented below.

$$Y_{it} = \beta_0 + \beta_1 X1_{it} + \beta_2 X2_{it} + \beta_3 X3_{it} + \beta_4 X4_{it} + \beta_5 X5_{it} + \beta_6 X6_{it} + \beta_7 X7_{it} \\ + \beta_8 X8_{it} + \beta_9 X9_{it} + \beta_{10} X10_{it} + \beta_{11} X11_{it} + \beta_{12} X12_{it} \\ + \beta_{13} X13_{it} + \beta_{14} X14_{it} + \beta_{15} X15_{it} + u_{it}$$

Where;

- Y_{it} represents The Rate of New Star-up Companies and Total Entrepreneurial Activity (TEA) for country i at time t.
- $X1_{it}$ represents the Number of Start-up Companies for country i at time t.
- $X2_{it}$ represents Availability of Finance for country i at time t.
- $X3_{it}$ represents Total Tax Rate for country i at time t.
- $X4_{it}$ represents Normative Dimensions for country i at time t.
- $X5_{it}$ represents Cognitive Dimensions for country i at time t.
- $X6_{it}$ represents Individualism for country i at time t.
- $X7_{it}$ represents Uncertainty Avoidance for country i at time t.
- $X8_{it}$ represents Power Distance for country i at time t.
- $X9_{it}$ represents Masculinity for country i at time t.

- $X10_{it}$ represents Long-term Orientation for country i at time t .
- $X11_{it}$ represents the Level of Economic Development (dummy variable: 1 = innovation-driven and 0 = efficiency-driven) for country i at time t .
- $X12_{it}$ represents $Y10 = 2010$ (year dummy variable)
- $X13_{it}$ represents $Y11 = 2011$ (year dummy variable)
- $X14_{it}$ represents $Y12 = 2012$ (year dummy variable)
- $X15_{it}$ represents $Y13 = 2013$ (year dummy variable)
- $i = 1$ to 30 a number of countries.
- $t = 2009 - 2013$.
- u_{it} = Error term.

Table 2

Variance Inflation Factors (VIFs)

Variable	VIF	1/VIF
Economic Development	3.55	0.281329
Power Distance	3.22	0.310685
Individualism	3.18	0.314767
Availability of Finance	2.67	0.374773
Normative Dimension	2.38	0.419419
Year 2012	2.12	0.470880
Year 2011	2.08	0.480494
Total Tax Rate	2.08	0.481677
Cognitive Dimension	1.96	0.509689
Long-term Orientation	1.93	0.518564
Year 2010	1.90	0.526334
The Number of Start-up Procedures	1.89	0.530360
Uncertainty Avoidance	1.60	0.626944
Masculinity	1.45	0.690764
Year 2013	1.24	0.809078
Mean VIF	2.22	

Table 3

Countries analyzed by economic development level

Efficiency-Driven Economies	Innovation-Driven Economies
Argentina	Belgium
Chile	Finland
Colombia	France
Croatia	Germany
Hungary	Greece
Latvia	Ireland
Lithuania	Israel
Malaysia	Italy
Peru	Netherlands
Slovak Republic	Norway
Thailand	Portugal
Turkey	Singapore
Uruguay	Slovenia
	South Korea
	Spain
	Sweden
	Switzerland
N=13 countries	N=17 countries

Source: Amoros & Bosma (2014)

Final Sample

This study's final sample was conducted as follows. The countries analyzed are presented in Table 3. This study tried to increase the sample size as much as possible. First, this study tried to match data available from Hofstede's cultural dimensions and the GEM reports with those from the World Bank's Entrepreneurship survey database. The sample includes 30 countries during the 5-year period from 2009 to 2013 (total 90 observations unbalanced panel data).

CHAPTER 4

RESULTS AND ROBUSTNESS CHECKS

Results

This study hypothesized that the regulative dimension, normative dimension, cognitive dimension, individualism, uncertainty avoidance, power distance, masculinity, and long-term orientation were related to the level of entrepreneurial activity. Thus, the results examined the relationship between the ten proposed predictors and the level of entrepreneurial activity. Table 4 presents the means, standard deviations, minimum, and maximum for the variables this study studied.

Table 5 provides correlation coefficients. A correlation matrix shows some variables may be highly correlated. Thus, this study conducted a multicollinearity diagnostic test (checking the variance inflation factors of all variables in this model), and found that multicollinearity is not likely to be a problem here since the variance inflation

factors (VIFs) are below the cut-off value of 10 (Neter, Kutner, Nachtsheim, & Wasserman, 1996).

The model and hypotheses were examined through pooled OLS multiple linear regression with outcome variables that represented the level of entrepreneurial activity (The Rate of Start-up Companies and Total Entrepreneurial Activity). Table 6 presents the results for all variables in the sample.

Table 4

Descriptive statistics

Variable	Mean	Std. Dev.	Min	Max
The Rate of New Start-up Companies	3.361	1.139	0.465	12.224
Total Entrepreneurial Activity (TEA)	9.496	5.897	2.3	27.2
The Number of Start-up Procedures	6.677	2.894	3	15
Availability of Finance	117.869	60.414	18.390	248.931
Total Tax Rate	37.767	13.371	12.104	71.351
Normative Dimension	3.296	0.393	2.552	4.458
Cognitive Dimension	2.596	0.2776	1.847	3.36
Individualism	49.388	22.131	13	80
Uncertainty Avoidance	71.6	21.860	8	112
Power Distance	54.4	19.718	13	104
Masculinity	45.533	23.271	5	110
Long-term Orientation	49.582	21.621	13.098	100
Economic Development	0.566	0.498	0	1
Year 2010	0.222	0.418	0	1
Year 2011	0.266	0.444	0	1
Year 2012	0.311	0.465	0	1
Year 2013	0.022	0.148	0	1

Table 5

Correlation coefficients

Variable	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. The Rate of New Start-up companies	1								
2. Total Entrepreneurial Activity (TEA)	-0.0658	1							
3. The Number of Start-up Procedures	-0.5526*	0.3192*	1						
4. Availability of Finance	-0.0486	-0.5808*	-0.1929	1					
5. Total Tax Rate	-0.1205	-0.2166*	-0.1574	0.4117*	1				
6. Normative Dimension	0.0711	0.2173*	-0.2271*	0.0974	0.3487*	1			
7. Cognitive Dimension	0.0460	0.2250*	-0.1065	0.0271	0.2797*	0.6143*	1		
8. Individualism	0.2559*	-0.5654*	-0.3076*	0.4158*	0.1534	-0.1409	-0.0778	1	
9. Uncertainty Avoidance	-0.4136*	0.2162*	0.4449*	-0.3216*	-0.2350*	-0.3460*	-0.2973*	-0.2483*	1
10. Power Distance	-0.1308	0.2207*	0.1814	-0.3229*	0.0940	-0.1206	-0.1646	-0.6079*	0.1724
11. Masculinity	-0.2867*	0.0027	0.2786*	-0.0655	0.1656	-0.0756	-0.1235	0.1261	0.0767
12. Long-term Orientation	0.1426	-0.5708*	-0.2896*	0.2857*	0.1178	-0.1854	-0.2336*	0.4217*	-0.1543
13. Economic Development	-0.0022	-0.6899*	-0.3472*	0.7127*	0.3277*	-0.0031	0.0523	0.4668*	-0.2306*
14. Year 2010	-0.0861	-0.0931	0.1341	0.0786	-0.0395	-0.0748	-0.1990	-0.0240	0.0639
15. Year 2011	0.1354	0.1311	-0.0983	-0.0117	-0.0512	0.0271	0.0059	-0.0666	-0.1345
16. Year 2012	0.1088	0.0568	-0.1499	-0.0050	0.0380	0.1393	0.1787	0.0099	-0.0969
17. Year 2013	-0.1157	-0.1169	-0.0355	0.0166	0.1397	-0.1811	-0.0886	0.1480	0.0548

Table 5

Correlation coefficients (continued)

	Variable	10.	11.	12.	13.	14.	15.	16.	17.
10.	Power Distance	1							
11.	Masculinity	0.1746	1						
12.	Long-term Orientation	-0.0194	0.1827	1					
13.	Economic Development	-0.4762*	-0.1659	0.3956*	1				
14.	Year 2010	0.0000	0.0004	-0.1456	0.0360	1			
15.	Year 2011	0.0761	-0.0443	0.0126	-0.0811	-0.3223*	1		
16.	Year 2012	0.0144	-0.0342	0.0839	-0.0420	-0.3592*	-0.4052*	1	
17.	Year 2013	-0.0338	0.0942	0.2299*	0.1318	-0.0806	-0.0909	-0.1013	1

Note:

* Correlation is significant at $p < 0.05$

Table 6

Pooled regression results predicting entrepreneurial activity (90 observations)

Dependent variables	The Rate of Start-up Companies	Total Entrepreneurial Activity (TEA)
	Coefficient (Std. error)	Coefficient (Std. error)
Institutional Dimensions		
The Number of Start-up Procedures	-0.3063416** (0.0899257)	0.1072931 (0.1237754)
Availability of Finance	-0.0052673 (0.0052126)	-0.0144893 (0.0100969)
Total Tax Rate	-0.0162992 (0.0183593)	0.0275326 (0.0403708)
Normative Dimension	-0.2726129 (0.7030558)	0.8770646 (1.534304)
Cognitive Dimension	0.058291 (0.7068661)	2.083937 (1.918233)
Cultural Dimensions		
Individualism	0.0291997 (0.0149302)	-0.0930406*** (0.0254988)
Uncertainty Avoidance	-0.0270256* (0.0119735)	0.0179027 (0.0230279)
Power Distance	0.005391 (0.0124617)	-0.0852566* (0.0361741)
Masculinity	-0.0222268 (0.0113246)	0.009462 (0.0188654)
Long-term Orientation	0.0069385 (0.0111969)	-0.0506911** (0.0178493)
Control Variables		
Economic Development	-1.020883 (0.8736676)	-5.427957*** (1.4603)
Year 2010	0.183892 (0.4615973)	0.3945011 (1.193993)
Year 2011	0.2708826 (0.4974843)	2.398205* (1.086197)
Year 2012	0.1370336 (0.4845168)	1.746065 (1.039966)
Year 2013	-1.517059* (0.6353684)	2.735007* (1.190004)
Constant	8.714686 (3.487927)	12.92504 (7.315877)
Observations	90	90

R-squared	0.5116	0.7166
Root MSE	1.6988	3.4433

Note:

* Significant at $p < 0.05$, ** Significant at $p < 0.01$, and *** Significant at $p < 0.001$;
Standard errors are in parenthesis corrected for heteroskedasticity

Result for hypothesis 1

The first hypothesis concerned the number of start-up procedures. It was hypothesized that the number of start-up procedures would have a statistically and negative significant impact on the level of entrepreneurial activity across countries. This study found that there was a negative relationship between the number of start-up procedures and the rate of new start-up companies ($p < 0.01$). However, the number of start-up procedures was not related to Total Entrepreneurial Activity (TEA) across countries. Therefore, hypothesis 1a was supported ($p < 0.01$). However, this study did not find support for hypothesis 1b.

Result for hypothesis 2

The second hypothesis concerned the availability of finance. This study proposed that the availability of finance would have a positive effect on the rate of new start-up companies and Total Entrepreneurial Activity (TEA) across countries. Table 6 showed that the availability of finance was not related to the level of entrepreneurial activity. Therefore, this study concluded that hypothesis 2a and 2b were not supported.

Result for hypothesis 3

The third hypothesis concerned total tax rate. This study suggested that total tax rate would have a negative impact on the level of entrepreneurial activity across countries. This study found that total tax rate was not related to the rate of new start-up company and Total Entrepreneurial Activity (TEA) across countries. Consequently, hypothesis 3a and 3b were not supported.

Result for hypothesis 4

The fourth hypothesis concerned the normative dimension of institutions, hypothesizing a positive relationship when explaining the level of entrepreneurial activity across countries. As shown in Table 6, the favorable normative dimension of institutions did not have a positive effect on the rate of new start-up companies and Total Entrepreneurial Activity (TEA). Thus, this study concluded that hypothesis 4a and 4b were not supported.

Result for hypothesis 5

The fifth hypothesis concerned the cognitive dimension of institutions. As this study mentioned before, hypothesis 5a and 5b propose that a favorable cognitive dimension of institutions for entrepreneurship increase the level of entrepreneurial activity. As shown in Table 6, the cognitive dimensions were not related to the rate of

new-start-up companies and Total Entrepreneurial Activity (TEA) across countries. Therefore, this study did not find support for hypothesis 5a and 5b.

Result for hypothesis 6

The sixth hypothesis concerned individualism. It was hypothesized that a significant portion of the variance would be described by a negative relationship between individualism and the level of entrepreneurial activity. Table 6 showed that there is no significant relationship between the individualism and the rate of new start-up companies. However, when examined with the independent variables in multiple regression with Total Entrepreneurial Activity (TEA) as the dependent variable, the individualism significantly contributed to the model's variance ($p < 0.001$). The result of this study showed that the individualism had a negative effect on Total Entrepreneurial Activity (TEA) and that was strongly significant ($p < 0.001$). Therefore, hypothesis 6a was not supported, but hypothesis 6b was strongly supported ($p < 0.001$).

Result for hypothesis 7

The seventh hypothesis concerned uncertainty avoidance. It was suggested that uncertainty avoidance would have a negative impact on the level of entrepreneurial activity. This study found that the uncertainty avoidance had a negative effect on the rate of new start-up companies ($p < 0.05$). However, uncertainty avoidance was not related to

Total Entrepreneurial Activity (TEA) across countries. Thus, this study concluded that hypothesis 7a was supported ($p < 0.05$), but hypothesis 7b was not supported.

Result for hypothesis 8

The eighth hypothesis concerned power distance. Hypothesis 6a and 6b proposed that the power distance has a negative and statistically significant effect on the level of entrepreneurial activity. This study found that power distance was not related to the rate of new start-up companies. However, as shown in Table 6, power distance had a negative effect on Total Entrepreneurial Activity (TEA) that was significant ($p < 0.05$). Therefore, this study concluded that hypothesis 8a was not supported, but hypothesis 8b was supported ($p < 0.05$).

Result for hypothesis 9

The ninth hypothesis concerned masculinity. Hypothesis 9a and 9b suggested that masculinity increases the level of entrepreneurial activity. The result showed that there was a negative relationship between masculinity and the rate of new start-up companies. However, there was a positive relationship between masculinity and Total Entrepreneurial Activity (TEA). In Table 6, the result showed that masculinity was not significantly related to the rate of start-up companies and Total Entrepreneurial Activity (TEA) across countries. Thus, this study concluded that hypothesis 9a and 9b were not supported.

Result for hypothesis 10

The tenth hypothesis concerned long-term orientation. Specifically, it was hypothesized that long-term orientation would have a positive effect on the level of entrepreneurial activity. The result showed that there was a positive relationship between long-term orientation and the rate of start-up companies, but it was not significantly related. However, in Table 6, the result showed that there was a negative relationship between the long-term orientation and Total Entrepreneurial Activity (TEA) and long-term orientation was significantly related to Total Entrepreneurial Activity (TEA) ($p < 0.01$). Consequently, hypothesis 10a and 10b were not supported; the statistically significant relationship between long-term orientation and Total Entrepreneurial Activity (TEA) was in the opposite direction as hypothesized.

Robustness Checks

Previous researchers posit that national culture is a crucial informal institution and they included national culture as an informal institution (North 1990; Hofstede, Van Deusen, Mueller, & Charles, 2002; Redding, 2005; Peng, Wang, & Jiang, 2008; Dikova, Sahib, & Van Witteloostuijn, 2010). This study recognized that informal institutions (normative and cognitive dimensions) and cultural dimensions might have similar roles on the level of entrepreneurial activity across countries (North 1990; Hofstede, Van Deusen, Mueller, & Charles, 2002).

Therefore, this study removed normative and cognitive dimensions (informal institutions) in the modified model to see if this choice affected this study's results. As a robustness check, this study compared the results of the full model with the results of the modified model to support the results of this study.

Figure 2

The Full Model (The Original Conceptual Framework)

Note: The effect of formal institutions, informal institutions, and culture on entrepreneurial activity

This study's original conceptual framework appears in Figure 2. The original model (the full model) investigated the effect of institutional dimensions and cultural dimensions on the level of entrepreneurial activity across countries. Figure 3 represents the modified model for this study. The modified model examined the effect of formal

institutions (regulative dimensions) and cultural dimensions on the level of entrepreneurial activity across countries.

Figure 3

The Modified Model

Note: The effect of formal institutions and culture on entrepreneurial activity

In the modified model, this study found that the number of start-up procedures had a significant negative relationship with the rate of start-up companies ($p < 0.01$). Moreover, uncertainty avoidance had a significant negative relationship with the rate of start-up companies ($p < 0.05$). Therefore, it is possible to support H1a and H7a.

However, the individualism had a significant positive relationship with the rate of start-up companies ($\rho < 0.05$) and masculinity had a significant negative relationship with the rate of start-up companies ($\rho < 0.05$) in the modified model. Therefore, this study captured cultural dimensions that overlap conceptually with informal institutions (normative and cognitive dimensions) (North 1990; Hofstede, Van Deusen, Mueller, & Charles, 2002; Redding, 2005; Peng, Wang, & Jiang, 2008; Dikova, Sahib, & Van Witteloostuijn, 2010).

With respect to hypothesis 6b, this study found that individualism had a significant negative relationship with Total Entrepreneurial Activity (TEA) in the modified model ($\rho < 0.01$). For hypothesis 8b, power distance had a significant effect on Total Entrepreneurial Activity (TEA) in the modified model ($\rho < 0.01$). Thus, it is possible to support H6b and H8b.

Overall, the results of the full model and the modified model were similar. The results for these robustness checks present further credence for this study's original results. This study summarizes results for the modified model in Table 7.

Table 7

Pooled regression results for the modified model (robustness checks)

Dependent variables	The Rate of Start-up Companies	Total Entrepreneurial Activity (TEA)
	Coefficient (Std. error)	Coefficient (Std. error)

Regulative Dimensions of Institutions		
The Number of Start-up Procedures	-0.2973527** (0.0841479)	0.0843579 (0.1210206)
Availability of Finance	-0.0054423 (0.0051332)	-0.015803 (0.009891)
Total Tax Rate	-0.0197339 (0.0139221)	0.0566426 (0.0405205)
Cultural Dimensions		
Individualism	0.0316856* (0.0121317)	-0.109048*** (0.0255418)
Uncertainty Avoidance	-0.026192* (0.0112486)	0.0071201 (0.0204714)
Power Distance	0.0082033 (0.0097053)	-0.1060569** (0.037066)
Masculinity	-0.0225266* (0.0109506)	0.0093487 (0.0206146)
Long-term Orientation	0.0067731 (0.0107732)	-0.0552742** (0.0179468)
Control Variables		
Economic Development	-0.9484037 (0.8809638)	-5.617448*** (1.347474)
Year 2010	0.183588 (0.4467202)	0.1361285 (1.145099)
Year 2011	0.2761002 (0.4940576)	2.344659* (1.097356)
Year 2012	0.1326369 (0.4839842)	1.874778 (1.007927)
Year 2013	-1.416335* (0.5473318)	2.148428 (1.408893)
Constant	7.700794 (1.427268)	23.51408 (2.973624)
Observations	90	90
R-squared	0.5106	0.7058
Root MSE	1.6781	3.4616

Note:

* Significant at $p < 0.05$, ** Significant at $p < 0.01$, and *** Significant at $p < 0.001$; Standard errors are in parenthesis corrected for heteroskedasticity

CHAPTER 5

DISCUSSION AND CONCLUSION

Discussion

The purpose of this study was to empirically examine the influence of institutional dimensions (regulative, normative, and cognitive dimension) and cultural dimensions (individualism, uncertainty avoidance, power distance, masculinity, and long-term orientation) on the level of entrepreneurial activity across countries when controlling for the level of economic development. Moreover, this study used the rate of new start-up companies and Total Entrepreneurial Activity (TEA) to measure the level of entrepreneurial activity across countries.

Prior entrepreneurship researchers have investigated quite widely the influence of national culture and institutions on the level of entrepreneurial activity across countries (Busenitz, Gomez, & Spencer, 2000; North, 1990; Scott, 1995; Kostova, 1997; Hofstede, 1980, Valdez & Richardson, 2013; Urbano & Alvarez, 2014; Autio, Pathak, & Wennberg, 2013; Dantas, Moreira, & Valente, 2015).

However, there is limited understating of the effect of cultural dimensions and institutional dimensions on the level of entrepreneurial activity across countries (Urbano & Alvarez, 2014; Autio, Pathak, & Wennberg, 2013; Valdez & Richardson, 2013; Dantas, Moreira, & Valente, 2015).

Few previous entrepreneurship researchers have examined the impact of national culture and institutions on the level of entrepreneurial activity using cross-national data

(Urbano & Alvarez, 2014; Autio, Pathak, & Wennberg, 2013; Valdez & Richardson, 2013; Dantas, Moreira, & Valente, 2015). Moreover, prior entrepreneurship researchers did not present clear answers of how national culture relates to the level of entrepreneurial activity and which cultural dimensions are the most important for explaining the level of entrepreneurial activity across countries (Busenitz, Gomez, & Spencer, 2000; Dantas, Moreira, & Valente, 2015).

Also, previous entrepreneurship literature on institutions has used mostly formal institutions (i.e., regulative dimensions) as a theoretical framework to investigate the entrepreneurial activity (Szyliowicz & Galvin, 2010; Muralidharan & Pathak, 2017). This study included informal institutions (i.e., cognitive and normative dimensions) to better understand the effect of institutions on the level of entrepreneurial activity across countries.

Consequently, Hofstede's (1980) cultural dimensions and institutional theory (North, 1990; Scott, 1995; Kostova, 1997) were applied as the framework to analyze the macro-level components. Furthermore, this study examined which cultural and institutional dimensions are the most important for understanding the different level of entrepreneurial activity across countries.

To examine the effect of national culture and institutions on the level of entrepreneurial activity, this study collected the dataset from the World Bank Datasets, GEM Report (i.e., collected survey data of individuals at the national level) and Hofstede's study (based on the Values Survey Module 2013).

This study used the rate of new start-up companies and Total Entrepreneurial Activity (TEA) as the level of entrepreneurial activity and collected data from the World Bank Group Entrepreneurship Survey and the Global Entrepreneurship Monitor (GEM).

Most previous researchers have used Total Entrepreneurial Activity (TEA) to investigate the level of entrepreneurial activity across countries (Pinillos & Reyes, 2011; Zhao, Li, & Rauch, 2012; Urbano & Turró 2013; Valdez & Richardson, 2013; Urbano & Alvarez, 2014; Dantas, Moreira, & Valente, 2015). Furthermore, this study included the rate of new start-up companies as the dependent variable to compare with Total Entrepreneurial Activity (TEA).

This study collected three regulative dimensions (the number of start-up procedures, availability of finance, and total tax rate) from the World Bank Datasets. Moreover, this study obtained the data for informal institutions (normative and cognitive dimensions) from the GEM National Expert Survey (NES). Also, this study used Hofstede's cultural dimensions to examine the relationship between cultural dimensions and the level of entrepreneurial activity.

Previous entrepreneurship literatures have used the analytical framework of either national culture (Thomas & Mueller 2000; Mueller & Thomas 2001; Baughn & Neupert, 2003; Pinillos & Reyes, 2011; Dantas, Moreira, & Valente; 2015;) or institutions (Manolova, Eunn, & Gyoshev, 2008; Bruton, Ahlstrom, & Li, 2010; De Clercq, Danis, & Dakhli, 2010; Valdez & Richardson, 2013; Urbano, & Alvarez, 2014) to examine entrepreneurial activity.

However, this study used two analytical frameworks (national culture and institutions) to investigate the level of entrepreneurial activity across countries. As mentioned above, previous scholars contended that national culture is an important informal institution, and they considered national culture as the informal institutions (North 1990; Hofstede, Van Deusen, Mueller, & Charles, 2002; Redding, 2005; Peng, Wang, & Jiang, 2008; Dikova, Sahib, & Van Witteloostuijn, 2010).

Since cultural dimensions are related to normative and cognitive dimensions (North 1990; Hofstede, Van Deusen, Mueller, & Charles, 2002), two statistical models are applied to test the hypotheses. Furthermore, this study compared the results of the original conceptual framework with the modified model (the effect of formal institutions and culture on entrepreneurial activity).

This study posed a direct relationship between institutional dimensions (regulative, normative, and cognitive dimensions) and the level of entrepreneurial activity across countries. The full model investigated the effect of three regulative dimensions (the number of start-up procedures, availability of finance, and total tax rate), normative dimension, cognitive dimension, and five cultural dimensions on the level of entrepreneurial activity. Figure 4 summarizes the results of the full model (the original conceptual framework).

Figure 4

Summary of The Full Model (The Original Conceptual Framework)

Note:

* Significant at $p < 0.05$, ** Significant at $p < 0.01$, and *** Significant at $p < 0.001$; Standard errors are in parenthesis corrected for heteroskedasticity

Figure 5

Summary of The Modified Model

Note:

* Significant at $p < 0.05$, ** Significant at $p < 0.01$, and *** Significant at $p < 0.001$; Standard errors are in parenthesis corrected for heteroskedasticity

Previous literature argued that national culture is a crucial informal institution (North 1990; Hofstede, Van Deussen, Mueller, & Charles, 2002; Redding, 2005; Peng, Wang, & Jiang, 2008; Dikova, Sahib, & Van Witteloostuijn, 2010). The modified model examined the effect of formal institutions and culture on the level of entrepreneurial activity. This method enables us to better identify the role of formal institutions and culture on entrepreneurial activity without the effect of informal institutions on the model. Figure 5 presents the results of the modified model.

The full and modified models confirmed that regulatory procedures and administrative burdens discourage entrepreneurial activity. This study found a non-significant relationship between the availability of finance and entrepreneurial activity. Moreover, this study suggested that higher tax rates tend to discourage people to become entrepreneurs. However, this study did not find a significant relationship between the total tax rate and entrepreneurial activity.

Interestingly, this study did not find a significant relationship between other cultural dimensions (individualism, power distance, masculinity, and long-term orientation) and the rate of start-up companies in the full model. However, this study did find a significant positive relationship between individualism and the rate of start-up companies in the modified model. Moreover, this study found a significant negative relationship between masculinity and the rate of start-up companies in the modified model.

It is possible to claim that there were different results between the full model and modified model, most likely due to the *similar* role of informal institutions and culture on

the rate of start-up companies. In other words, informal institutions (normative and cognitive dimensions) overlap conceptually with culture in the original model (North 1990; Hofstede, Van Deussen, Mueller, & Charles, 2002; Redding, 2005; Peng, Wang, & Jiang, 2008; Dikova, Sahib, & Van Witteloostuijn, 2010).

Concerning the impact of cultural dimensions on Total Entrepreneurial Activity (TEA), the results of the full model and modified model were similar. These two models showed that there was a negative relationship between individualism and Total Entrepreneurial Activity (TEA). People in collectivistic cultures are more likely to start their own businesses.

Furthermore, the two models indicated that there was a negative relationship between power distance and Total Entrepreneurial Activity (TEA). People in low power distance cultures are more prone to starting a new business.

This study also proposed that people in long-term oriented cultures tend to start their own business. However, the results of the two models showed that people in long-term oriented cultures are less likely to launch a new business. In other words, there was a negative relationship between long-term orientations and Total Entrepreneurial Activity (TEA).

Besides, this study hypothesized that long-term orientation would have a positive impact on Total Entrepreneurial Activity (TEA) across countries. Interestingly, the findings of this study showed that there was a negative relationship between long-term orientation and Total Entrepreneurial Activity (this was in the opposite direction as hypothesized) in both the full and modified models.

This study suggested that there was a direct relationship between uncertainty avoidance and Total Entrepreneurial Activity (TEA). However, the results indicate that uncertainty avoidance is less likely to impact Total Entrepreneurial Activity (TEA) in the two models. Also, the results showed that masculinity did not increase Total Entrepreneurial Activity in the two models. Based on the results of the two models, it is possible to claim that uncertainty avoidance and masculinity did not impact Total Entrepreneurial Activity (TEA) significantly.

Consequently, the results of full and modified models presented that the cultural dimensions (individualism, uncertainty avoidance, power distance, and masculinity, long-term orientation) play a more critical role than institutional dimensions (regulative, normative, cognitive dimensions) in understanding the level of entrepreneurial activity across countries. This study contributes to existing research by shedding light on the contradictions, ambiguities, and inconsistencies inherent in the entrepreneurship research linking formal institutions, informal institutions, and culture to the level of entrepreneurial activity across countries.

Limitations

This study has several limitations. First, empirical generalizability is one. In general, the entrepreneurship research could be strengthened with larger samples. However, this study's sample consisted of only 30 countries during the 5-year period from 2009 to 2013. Furthermore, Total observations were only 90 and unbalanced panel

data. Different results may be found if the researcher applies a sufficiently larger sample size and balanced panel data.

Second, the limitation is related to the absence of information on factor-driven economies from Hofstede's cultural dimensions, the World Bank Dataset, and the GEM report. This study collected the dataset from Hofstede's cultural dimensions, the World Bank Dataset, and the GEM report. For example, the GEM report provided the information of entrepreneurial activity across 54 countries in 2009, 59 countries in 2010, 54 countries in 2011, 69 countries in 2012, and 69 countries in 2013. Moreover, the World Bank's annual Doing Business project covered 181 countries in 2009, 183 countries in 2010, 183 countries in 2011, 183 countries in 2012, and 185 countries in 2013. Also, Hofstede's cultural dimension covered in 72 countries. However, this study found that only 17 innovation-driven economies and 13 efficiency-driven economies are available for this study. This study was not able to find the data from factor-driven countries due to the lack of data on entrepreneurial activities from the World Bank Dataset.

Third, this study used the level of economic development for the control variable to examine the effect of national culture and intuitions on the level of entrepreneurial activity across countries. However, this study was limited in the ability to obtain other control variables because of data availability, different level of analysis, and different reporting standards for the sample. If the researcher includes other control variables, different results may be found.

Fourth, this study did not employ other national culture models to examine the effect of national culture on entrepreneurial activity. This study used Hofstede's cultural dimensions to investigate the relationship between national culture and the level of entrepreneurial activity across countries. Previous researchers used GLOBE national culture models to examine the relationship between national culture and the entrepreneurial activity (House, Hanges, Javidan, Dorfman, & Gupta, 2004; Zhao, Li, & Rauch, 2012). Also, this study did not show the differences in entrepreneurship literature between Hofstede's cultural dimensions and GLOBE national culture models.

Fifth, this study examined national culture and institutions at the national level to predict entrepreneurial activity rates at the national level. Therefore, there was a good match between the dependent and independent variables in this study. Further, the dependent, independent, and control variables were based on validated measurements (De Clercq, Danis, & Dakhli, 2010; Danis, De Clercq, & Petricevic, 2011; Dantas, Moreira, & Valente, 2015). However, this study did not propose that national culture and institutions directly effect individual's choice to start a business. National culture is a multi-level structure with reciprocal top-down, bottom-up processes across different levels of culture (Kozlowski & Klein, 2000; Erez & Gati, 2004). According to Scott (2008), the author posits that the cognitive dimensions are mediating between the external environments and the response of the individuals needs an individual measure (Urbano & Alvarez, 2014). To examine how the effects of national culture and institutions transmit to individual-level activity, it needs to examine multi-level of analysis. Therefore, this study results should be generalized to the level of entrepreneurial activity at the national level and not to the individual entrepreneur at the individual level.

Sixth, this study simplified the level of entrepreneurial activity into two broad categories. While the rate of new start-up companies and Total Entrepreneurial Activity (TEA) are the most prevalent in entrepreneurship research, there are other sub-categories such as self employment (Chowdhury, Terjesen, & Audretsch, 2015), innovation level, technology level, necessity-driven entrepreneurship, and opportunity-driven entrepreneurship (Dantas, Moreira, & Valente, 2015).

The final limitation is that this study used pooling cross sections across time (simple panel data methods) to increase the sample size. This statistical method is helpful only insofar as the relationship between the independent variables and the dependent variables remains constant over time (Wooldridge, 2015). Therefore, this study included year dummy variables to control for year effects in the regression model. Since this study included year dummy variable, it was not possible to include any other variables that vary only over time (Wooldridge, 2015).

Future research directions

This study examined the effect of national culture and institutions on the level of entrepreneurial activity across countries using a cross-national dataset from the GEM, the World Bank Dataset, and Hofstede's cultural dimensions. Given the limitations mentioned above, future research could further examine the effect of national culture and institutions on the level of entrepreneurial activity from a dynamic perspective point of view. In this regard, time series analysis for explaining how some countries have changed their institutions and cultural backgrounds and how it impacts their entrepreneurial

activities (Valdez & Richardson, 2013; Urbano & Alvarez, 2014; Dantas, Moreira, & Valente, 2015).

Furthermore, it could be interesting to investigate how national culture and institutions are related to entrepreneurial activity based on the level of economic development (Wennekers, Van Wennekers, Thurik, & Reynolds, 2005; Pinillos, & Reyes, 2011). For example, previous researchers investigated how individualism relates to entrepreneurial activity depending on the level of economic development (Pinillos, & Reyes, 2011) and the role of institutions in emerging economies (De Clercq, Danis, & Dakhli, 2010). In other words, future research might usefully investigate how cultural dimensions and three institutional dimensions impact the level of entrepreneurial activity depending on the level of economic development.

Also, future research could use other cultural dimensions such as the GLOBE project to investigate the relationship between national cultural model and the level of entrepreneurial activity (House, Hanges, Javidan, Dorfman, & Gupta, 2004; Zhao, Li, & Rauch, 2012). The GLOBE (Global Leadership and Organizational Behavior Effectiveness) national cultural model is focusing on culture and leadership across countries. The GLOBE national cultural dimensions include variables as performance orientation, assertiveness orientation, institutional collectivism, in-group collectivism, power distance, humane orientation, uncertainty avoidance, gender egalitarianism, and future orientation (House, Javidan, Hanges, & Dorfman, 2002). For each of the nine GLOBE cultural dimensions, four scales were established. Moreover, GLOBE differentiated cultural practices (the ways things are) and cultural values (the way things

should be) (Hofstede, 2006; Javidan, Dorfman, De Luque, & House, 2006). According to Hofstede (2006), there are differences and similarities between GLOBE and Hofstede. Future research would benefit from using the GLOBE cultural dimensions, which would cope with different values, practices, and perspective regarding culture.

Another interesting research would investigate the effect of cultural and institutional dimensions on the Total Entrepreneurial Activity (TEA), necessity-driven entrepreneurship, and opportunity-driven entrepreneurship rates across countries. Also, future research could compare each of these entrepreneurship rates across countries (Valdez & Richardson, 2013; Dantas, Moreira, & Valente, 2015). People have different motivations to start their own business across countries.

The GEM framework distinguished three types of entrepreneurship such as Total Entrepreneurial Activity (TEA), necessity-driven entrepreneurship and opportunity-driven entrepreneurship rates; for example, a necessity-driven entrepreneur who started a new business because there was no better choice to work (people were unemployed or had unsatisfying jobs). In the opportunity-driven entrepreneurship case, someone chooses to start a business as one of several alternative career choices (entrepreneurs who sought to either be more independent or make more money) (Xavier, Kelley, Kew, Herrington, & Vorderwulbecke, 2013). Therefore, comparing the three types of entrepreneurial activities may allow for a more nuanced understanding of the effect of cultural and institutional dimensions on entrepreneurship across countries, and may allow for the influence of motivations on business start-ups across countries.

Implications

Despite these limitations, this study provides essential theoretical and practical implications. From the theoretical perspective, this study contributes to global entrepreneurship literature by examining the effect of national culture and institutions on the level of entrepreneurial activity across countries using cross-national dataset. Most previous global entrepreneurship researchers have applied the analytical framework either national culture or institutions (Baughn & Neupert, 2003; Pinillos & Reyes, 2011; Valdez & Richardson, 2013; Urbano, & Alvarez, 2014; Dantas, Moreira, & Valente; 2015).

However, this study applied two analytical frameworks (cultural and institutional dimensions) to examine the entrepreneurial activity across nations. Moreover, this study compared these analytical frameworks, which is more likely to impact the level of entrepreneurial activity across countries. This study found that national culture plays a more critical role than institutions regarding the level of entrepreneurial activity across countries. Also, this study indicated that national culture plays a different role in promoting entrepreneurial activity across countries.

From a practical perspective, the results of this study have implications for policymakers interested in promoting more widespread entrepreneurial activity. In recent years policymakers have focused on changing regulations, laws, and government policies to increase the level of entrepreneurial activity (Stephan & Uhlaner, 2010). However, this study found that only one of the regulative dimension (the number of start-up procedures) was significantly related to the rate of new start-up companies.

Moreover, three regulative dimensions (the number of start-up procedures, availability of finance, and total tax rate) were not significantly related to Total Entrepreneurial Activity (TEA), which provides that regulative dimensions alone may be hard pressed to encourage the level of entrepreneurial activity. Furthermore, Van Stel and his colleagues suggested that a focus only on generating efficient institutions to foster new business not be warranted (Van Stel, Storey, & Thurik, 2007). Consequently, this study suggests that policymakers may have to understand the role of national culture and informal institutions (cognitive and normative dimensions) regarding fostering entrepreneurship.

This study found that individualism had a significantly negative relationship with Total Entrepreneurial Activity (TEA). Moreover, there was a negative relationship between power distance and Total Entrepreneurial Activity (TEA). With respect to the rate of new start-up company, this study found that there was a statistically significant negative relationship between uncertainty avoidance and the rate of new start-up rates.

Overall, researchers and entrepreneurs all benefit from better understanding of how national culture encourage people to start a business. Also, policymakers may present successful entrepreneurs' stories as positive role models and provide school programs to improve entrepreneurial skills, which are intended to stimulate the level of entrepreneurial activity.

Conclusion

This study contributes to the global entrepreneurship literature by investigating how national culture and institutions impact the level of entrepreneurial activity across 30 countries using cross-national data from the World Bank Dataset, the GEM report, and Hofstede's cultural dimensions during the 5-year period from 2009 to 2013.

Furthermore, this study used two analytical frameworks (cultural and institutional dimensions) to examine the level of entrepreneurial activity across 30 countries. The results of the full model showed that individualism, uncertainty avoidance, power distance, and long-term orientation are essential for explaining the level of entrepreneurial activity across countries. Moreover, the results of the modified model for this study explained that five cultural dimensions were significantly related to the level of entrepreneurial activity across countries.

However, the finding from this study indicated that only one of the regulative dimensions (i.e., the number of start-up procedures) was significantly related to the level of entrepreneurial activity. Therefore, the finding of this study concludes that national culture may play more important roles than institutions regarding the level of entrepreneurial activity across countries.

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APPENDICES

Appendix 1

Institutional dimension	GEM National Expert Survey (NES) questions
Normative dimension	<ol style="list-style-type: none"> 1) In my country, the creation of new ventures is considered an appropriate way to become rich (M01) 2) In my country, most people consider becoming an entrepreneur as a desirable career choice (M02) 3) In my country, successful entrepreneurs have a high level of status and respect (M03) 4) In my country, you will often see stories in the public media about successful entrepreneurs (M04) 5) In my country, most people think of entrepreneurs as competent, resourceful individuals (M05)
Cognitive dimension	<ol style="list-style-type: none"> 1) In my country, there are plenty of good opportunities to create truly high growth firms (K05) 2) In my country, many people know how to manage a small business (L02) 3) In my country, many people have experience in starting a new business (L03) 4) In my country, many people can react quickly to good opportunities for a new business (L04) 5) In my country, many people have the ability to organize the resources required for a new business (L05)

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