



# Institutional Determinants of Macro-Level Entrepreneurship

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This multicountry study empirically explores the institutional determinants of macro-level entrepreneurship. Findings suggest that a society's normative, cultural-cognitive, and regulative institutions are related to entrepreneurial activity. Normative and cultural-cognitive institutions' descriptive power in explaining entrepreneurial activity is higher than regulative institutions' or per capita gross domestic product. This suggests that differences in values, beliefs, and abilities may play a greater role than purely economic considerations of opportunity and transaction costs. Specific attention is given to opportunity- and necessity-motivated entrepreneurship due to their relationship to economic development.

## Introduction

Widespread interest in the role of entrepreneurship in economic development has led to considerable research on the topic. The research has spanned the spectrum from micro-level case studies on microfinance to the most macro level, such as the Global Entrepreneurship Monitor (GEM). National governments, nongovernmental organizations, private organizations (e.g., Technoserve), and intergovernmental organizations (e.g., World Bank and Asia Development Bank) increasingly look at entrepreneurship as a vital part of the solution to unemployment, poverty (Le, 1999), and economic development (Wennekers & Thurik, 1999). Substantial resources have been directed to increasing entrepreneurial activity as well as to improving the odds of new venture success.

Apparent differences in entrepreneurial activity across countries have led to research aimed at understanding the sources of these differences. The GEM research has brought into focus not only differences in the rate of entrepreneurial activity but also the types of new ventures and their likelihood of contributing significantly to economic development. These national differences in entrepreneurial activity suggest that national-level forces may be at work. Researchers have thus sought to explain national differences in entrepreneurial activity with differences at the national level in social, cultural, and economic

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environments. Beyond the scientific interest in exploring these phenomena, it is hoped that a greater and richer understanding of entrepreneurship may provide a more accurate picture of the environment to assist policy makers in making the best use of their legislative and fiscal power.

A number of recent studies have explored the connection between national characteristics and entrepreneurial activity. Mitchell, Smith, Seawright, and Morse (2000) showed how cultural differences, in particular Hofstede's individualism and power distance, shape entrepreneurial cognition and affect the venture creation decision. Thomas and Mueller (2000) discuss the influence of national culture on entrepreneurial characteristics like locus of control and risk taking. Hofstede, Noorderhaven, Thurik, Uhlaner, and Wildeman (2002) found a connection between national culture and self-employment. McMullen, Bagby, and Palich (2008) found that government regulation of economic activity helps to explain the decision to start up a new venture. Lim, Morse, Mitchell, and Seawright (2010) show that legal and financial systems influence the venture creation decision. And Kreiser, Marino, Dickson, and Weaver (2010) found support for the connection between Hofstede's cultural dimensions as well as a number of economic and political institutional measures and a country's entrepreneurial orientation.

An institutional perspective is common to the studies cited earlier, either explicitly or implicitly. Taken together, these studies suggest that institutions may be important predictors of entrepreneurial activity. An institutional perspective helps to structure the exploration of how societal factors influence entrepreneurial activity. For example, Scott's (1995) framework incorporates regulative, cultural-cognitive, and normative institutional "pillars." With such a framework in mind, we see that most prior studies of the connections between institutions and entrepreneurship have tended to look at selected institutional variables such as culture or economic regulation. The positive but not altogether consistent findings to date suggest that further exploration is needed. We believe that a fruitful way to further that exploration is to take a step back and look at the broad range of institutional variables together. For example, Busenitz, Gomez, and Spencer (2000) found some support for country institutional profiles to explain entrepreneurial activity, where the institutional profiles capture a broad range of institutional variables (Kostova, 1997). However, their study was limited to only six countries, and their primary data gathering method is quite difficult to employ across a large sample of countries (Spencer & Gomez, 2004). Still, such a broader, more comprehensive, look at institutional variables seems worth pursuing because it should shed light on a couple of important issues: first, how much of an effect do institutional variables have on entrepreneurial activity; second, which institutional variables seem to be most salient.

The proposition that institutions shape entrepreneurial behavior can be seen as a special case of the broader proposition that institutions shape social behavior (Busenitz et al., 2000; Scott, 1995). Within that framework, it can be argued that institutions will shape entrepreneurial behavior along the entire entrepreneurial process. It seems plausible that regulative, cognitive, and normative institutions will affect the types of opportunities people see, the decision to start up a venture, the types of organizations they form, the financing arrangements, the management methods they employ, and the growth they achieve. The institutional context provides the tools, models, and constraints that shape the entrepreneur's choices about each of these. In this study, as in most of the institutional studies cited earlier, we focus on the decision to start a venture. This critical step is central to the definition of an entrepreneur and is widely used to measure the degree to which a society is entrepreneurial. It is also clearly shaped by regulative, cognitive, and normative societal institutions. The regulatory burden and economic policies certainly affect the difficulty as well as incentives to launch a venture (McMullen et al., 2008). Cognitive

characteristics like awareness, information, and knowledge seem to be important precursors to launching a venture (Mitchell et al., 2000). And social norms such as the degree to which a society admires entrepreneurs and values innovation will affect an individual's motivation to launch a venture (Busenitz et al.).

In this study, we propose and test a model that incorporates a broader and more comprehensive set of institutional variables to capture the complexity concept of national institutional environments that support entrepreneurship. This study aims to contribute to a better understanding of the components of the national environment that help to explain the differences in entrepreneurship across countries. The model draws upon institutional theory concepts in the literature from management and sociology. It attempts to build upon and advance prior work in this area by incorporating additional measures of a broader conception of the institutional environment. The results indicate that a broader conception of the institutional environment provides greater explanatory power and extends our understanding of the sources of differences in entrepreneurial activity across nations.

## **Institutional Theory and Entrepreneurship Research**

### **Institutional Theory**

To achieve a better understanding of entrepreneurship, Thornton (1999) called on researchers to strengthen entrepreneurship research by drawing upon the sociology literature. We draw upon sociology using Scott's (1995) neo-institutional analytical framework to compare the effects of the regulative, cultural-cognitive, and normative dimensions (i.e., "pillars") of a country's institutional environment on entrepreneurial activity. This tri-faceted framework lends an appropriate perspective for understanding multiple aspects of the environment surrounding entrepreneurship in a given society. Neo-institutionalists do not view institutions as variables; rather, institutions are social arrangements that have achieved a high level of adaptability to change, that is, resilience (Scott). Institutions can be viewed as social arrangements that are complex and flexible. They consist of representational elements (verbal and social activities) as well as concrete objects and resources. The neo-institutionalist line of research looks at how institutions that affect economic transactions arise, are maintained, and are transformed. Such a framework could enrich examinations of entrepreneurship by adding a social lens for understanding the context in which entrepreneurial action takes place.

Drawing upon previous neo-institutional literature, Scott defines the three pillars taken together as the source of conformity and order for a social group. The three pillars that constitute institutions are the regulative (rules), normative (norms and customs), and cultural-cognitive (cultural values and beliefs). Each of these components has related activities, behaviors, and material resources that provide constancy and worth to societal existence (see Table 1). And each of these pillars are embedded in and communicated through carriers (Jepperson, 1991). These carriers are interconnected and include various types of systems (i.e., symbolic and relational), beliefs, and practices. One can view the three pillars as different perspectives on institutions. Institutional theorists and researchers have tended to differ not only in their predisposition concerning which of the three pillars they focus on but also in the carriers they emphasize (Scott, 1995).

In this study, we take a broad conception of institutions and attempt to use measures of the three institutional pillars as distinct dimensions as explained later.

A key component of Scott's (1995) model concerns the concept of legitimacy effects on institutions (e.g., individual, organizational, and societal). Legitimacy is obtained

Table 1

## Characteristics of the Three Pillars of Institutions

Pillar	Characteristic		
	Regulative	Normative	Cultural-cognitive
Basis of compliance	Expedience	Social obligation	Taken-for-grantedness Share understanding
Basis of order	Regulative rules	Binding expectations	Constitutive schema
Mechanisms (of control)	Coercive	Normative	Mimetic
Logic	Instrumentality	Appropriateness	Orthodoxy
Indicators	Rules Sanctions Laws	Certification accreditation	Common beliefs Shared logics of action
Basis of legitimacy	Legally sanctioned	Morally governed	Comprehensible recognizable Culturally supported

Scott (1995, p. 52).

through credibility and social acceptability. Suchman (1995, p. 574) defines legitimacy as the “generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions.” Scott argues that legitimacy cannot be traded or owned by an entity; instead, it is a circumstance that is achieved (or attached to self) through the recognized agreement with applicable rules (e.g., laws), endorsement of the norms, and/or in agreement with the “cultural-cognitive” environment. Our concern is with the legitimacy of institutions around entrepreneurship as we examine the three pillars of these institutions (i.e., regulatory, culture-cognitive, and normative) in different countries. To what extent are the practices, beliefs, and values associated with entrepreneurship legitimate or legitimized within a country’s institutional setting?

### Entrepreneurship Research Related to Institutions

There have been quite a few studies of the relationship between entrepreneurial activity and what we are calling institutional variables, such as culture, government regulations, and economic policies. These are described later. There have also been a few studies examining the three pillars of institutions around entrepreneurship. Due to the difficulty of operationalizing measures of the institutional pillars, not to mention the formidable task of gathering extensive cross-national data, few entrepreneurship studies have attempted to explain entrepreneurship within the institutional framework proposed by Scott (1995). Some have argued that the three pillars are components of culture or that they cannot be viewed as independent constructs (e.g., Hirsch, 1997). However, others treat the three pillars as separate, identifiable constructs, arguing that each one contributes differently to the explanation of entrepreneurship activity (Busenitz et al., 2000, and Spencer & Gomez, 2001, 2004). This is in line with previous research and arguments by Kostova (1997) and Scott (1995, 1998). Even accepting the argument that the three pillars have considerable conceptual overlap in the institutional literature, the argument by these

scholars is that the constructs can be defined to focus on three distinct dimensions of institutions. The research by these authors lays a supporting foundation for this current research, and their contributions are explored later.

The notion of a “country institutional profile” was introduced by Kostova (1997). Kostova argued that specific national business behavior could be explained through the understanding of government policies, common shared knowledge by a society or culture, and the societal values and norms. However, this profile must be directed toward a specific sphere of activity or field and cannot be generalized across multiple domains. Busenitz et al. (2000) used Kostova’s approach using college business students to develop and validate measures of the regulative, cognitive, and normative dimensions of a nation’s institutional profile around entrepreneurship activity. Their six-country (Germany, Italy, Norway, Spain, Sweden, and United States) study focused on defining the regulative, cognitive, and normative dimension constructs. The results from the sample of college students demonstrated differences between the countries; however, the predictive ability of the research was not significant.

While Busenitz et al.’s (2000) research did show differences between countries, it did not have significant findings with regard to the relationship between the institutional profile and the level of entrepreneurial activity (and it continued the tradition of focusing on the United States and European countries). The proxy for entrepreneurial activity may have been flawed. They used the percentage of small companies (0–19 employees) within the electronics and advanced manufacturing sectors and the percentage of newly listed domestic companies on a country’s stock exchange. This research has additional shortcomings stemming from a lack of testing the initial items for cultural sensitivity, and the data were collected from business students; therefore, it may be limited in scope and generalizability.

Following Busenitz et al.’s (2000) study, Spencer and Gomez (2001) conducted a case study analysis of Costa Rica, Uruguay, and Chile using a different operationalization of the institutional profile. They defined the regulative dimension as tax breaks, loan guarantees, and other regulatory programs; the normative dimension as societal views toward entrepreneurs and entrepreneurial activity; and the cognitive dimension as management and training programs and the availability of resources focusing on developing skills for small business among the general public.

Later, some of the same authors (Spencer & Gomez, 2004) used Busenitz et al.’s (2000) validated country institutional profile questionnaire. They gave the questionnaire to the United States and foreign embassy employees to obtain national profiles to be compared with self-employment, small firms, and new stock listings as measures of entrepreneurship activity. Findings suggested that the normative dimension was marginally related to self-employment, the cognitive dimension was positively related to the presence of small firms, and the regulative dimension was related to new initial stock offerings. However, as with the previous studies (e.g., Busenitz et al.; Spencer & Gomez, 2001), the actual analyses concerned perceptions of entrepreneurial activity and did not specifically relate the findings to actual entrepreneurial activity rates.

Despite the methodological limitations, the previous research exploring a country’s institutional profile with respect to entrepreneurship seems to be a promising direction. This general framework seems to be further supported through data collected by the GEM from entrepreneurship experts. From 1999 to 2001, GEM conducted semi-structured face-to-face interviews focusing on national entrepreneurship-related issues (Reynolds, Camp, Bygrave, Autio, & Hay, 2002). As seen in Table 2, cultural social norms, financial support, and government policies are the three most often mentioned issues concerning entrepreneurial activity for the experts interviewed. The 2001 findings,

Table 2

## Experts' Identification of the Three Most Important Issues by Country

Country	Ranking		
	1st	2nd	3rd
Finland	Cultural social norms	Education and training	Financial support
United States	Government policies	Education and training	Cultural social norms
Belgium	Financial support	Government policies	Cultural social norms
UK	Cultural social norms	Financial support	Government policies
Denmark	Cultural social norms	Government policies	Education and training
Germany	Financial support	Cultural social norms	Government policies
Scotland	Cultural social norms	Education and training	Government policies
Italy	Financial support	Government policies	Education and training
Argentina	Government policies	Financial support	Government policies
Sweden	Cultural social norms	Government policies	Education and training
Singapore	Financial support	Government policies	Government policies
Hungary	Government policies	Cultural social norms	Financial support
Brazil	Education and training	Government policies	Cultural social norms
Norway	Financial support	Education and training	Cultural social norms
New Zealand	Cultural social norms	Financial support	Education and training
Japan	Cultural social norms	Financial support	Education and training
Ireland	Cultural social norms	Government policies	Financial support
Netherlands	Education and training	Cultural social norms	Government policies
Australia	Cultural social norms	Financial support	Education and training
Portugal	Cultural social norms	Education and training	Government policies
South Africa	Education and training	Financial support	Cultural social norms
Mexico	Government policies	Education and training	Financial support
Spain	Financial support	Cultural social norms	Government policies
India	Government policies	Financial support	Cultural social norms
France	Cultural social norms	Education and training	Financial support
Israel	Government policies	Financial support	Education and training
All	Cultural social norms	Financial support	Government policies

Reynolds et al. (2002).

representing 950 interviews, are consistent with the findings from 1999 to 2000 (Reynolds et al., 2002).

A larger literature exists on what we view as one or more components of the institutional environment around entrepreneurship. A review of this literature below serves to motivate our broader conception as well as our measures of the components.

**Cultural-Cognitive Components.** The cultural-cognitive pillar refers to the collective understandings of the makeup of social reality that allows for the framing of meaning within a society (including organizational, individual, and other levels). This concept states that cultural contexts contribute to the formation of individual interpretations and beliefs (DiMaggio & Powell, 1983; Meyer & Rowan, 1977; Scott, 1995).

One perspective on cognitive differences between societies builds on the personality or “traits” research in entrepreneurship. This notion has a long history, going back to Weber (1904) and McClelland (1961), who used the Protestant work ethic and the need for achievement to explain the apparent differences in entrepreneurial activity between societies. Since that time, much research in entrepreneurship has focused on the

cognitive attributes of entrepreneurs by drawing upon psychology methods and by performing individual-level research. This entrepreneurial “traits” perspective has received extensive documentation in the literature. Research has looked at such traits as innovativeness (Fernald & Solomon, 1987; Hornaday & Aboud, 1971; McClelland, 1987; Schumpeter, 1949; Timmons, 1978), risk-propensity (Begley & Boyd, 1987; Bird, 1989; Brockhaus, 1982; Kets de Vries, 1977; Sexton & Bowman, 1983; Shaver & Scott, 1991), persistence (Neider, 1987), internal locus of control (Ahmed, 1985; Brockhaus, 1982; Cromie & Johns, 1983; Shapiro, 1975; Shaver & Scott), desire for personal control (Greenberger & Sexton, 1988), need for achievement (McClelland, 1987; Shaver & Scott), self-efficacy (Chen, Greene, & Crick, 1998), and energy level (Begley & Boyd, 1987; Neider; Sexton & Bowman; Sexton & Bowman-Upton, 1986).

Similar to potential concerns with the closely related personality research in psychology (Mischel, 1996), trait research in entrepreneurship has mixed findings. Trait-based research at times does not reliably distinguish between entrepreneurs and other business leaders and so fails to distinguish the contribution that the entrepreneur makes to the entrepreneurial process (Mitchell et al., 2002). For example, research has suggested that an entrepreneur has a high need to achieve, yet it has failed to distinguish entrepreneurs from middle managers in this regard (Brockhaus, 1980; Sexton & Kent, 1981). Similar findings have questioned the usefulness of other entrepreneurial traits. Gartner (1988) argued that traits research is to some extent flawed when trying to understand entrepreneurial activity, instead arguing for a behavioral approach. While some studies have found that some traits may be universal to entrepreneurship activity (e.g., Baum et al., 1993; Hisrich, 1988, 1990; McGrath, MacMillan, & Scheinberg, 1992), others have suggested that many of these entrepreneurial traits are culturally specific and not universally applicable to entrepreneurs (Thomas & Mueller, 2000). If traits were a reliable way to identify successful entrepreneurs, policy makers who are concerned with limited resources could target the correct type of individual to get a better return on resource investment and assist in economic development. However, such an entrepreneurial personality test does not presently seem to be feasible.

A stream of cultural-cognitive-related entrepreneurship research has attempted to address the limitations of the trait-based literature by expanding the level of research to the national level. These consist of cross-national studies using explanations for differences between nations based on national cultural attributes. National cultural attributes refer to commonly held beliefs and are meant to be generally or statistically predictive of behavior. This higher level conception avoids the problem of the strong predictive assumption that inherent individual traits determine individual behavior; instead, culturally shaped cognitions (cognitions that are generally shared in a society) influence aggregate behavior. For example, the cross-cultural literature has looked at national cultural dimensions to provide insight into differences in entrepreneurship and self-employment activity between countries (e.g., Hofstede et al., 2002). A limitation is that the entrepreneurship literature, especially cross-national (e.g., Baum et al., 1993; Huisman, 1985; McGrath et al., 1992; Shane, 1992), has focused mainly on the United States and Western Europe (Thomas & Mueller, 2000) and relied mainly on Hofstede’s conception of national culture (Hayton, George, & Zahra, 2002).

More recently, research has attempted to address questions about the existence and universality of national cultural attributes related to entrepreneurship. Thomas and Mueller’s (2000) study found innovation to demonstrate universality qualities and therefore potentially could serve as a cultural attribute that could be linked with entrepreneurship across nations. Innovativeness was measured using eight items from the Jackson Personality Inventory Manual (JPI). On the other hand, Thomas and Mueller found that traits

such as internal locus of control, risk taking, and high energy level show signs of being culturally specific. For example, internal locus of control (as measured using Rotter, 1966), risk taking, and high energy level (adapted from JPI) were found to decrease as cultural distance increases away from the United States (Hofstede, 1980; Kogut & Singh, 1988). The findings suggest that internal locus of control and high energy level may be culturally specific to individualistic cultures, and risk taking may be culturally specific to countries with low uncertainty avoidance, thus limiting their usefulness as attributes to be associated with entrepreneurship across nations.

Other researchers have found conflicting and sometimes puzzling connections between cultural attributes and entrepreneurship activity. For example, research by Baum et al. (1993) demonstrated that individualism was negatively related to entrepreneurship, a seemingly unexpected result. A positive relationship was found between Hofstede's uncertainty avoidance and the number of individuals who own their own business by Wilderman et al. (1999). But Noorderhaven, Wennekers, Hofstede, Thurik, & Wildeman, 1999) had the opposite finding, showing that, at the country level, there was a negative relationship between Hofstede's uncertainty avoidance and individuals owning their own business.

In an interesting study connecting national culture to a cognitive perspective and entrepreneurship, Mitchell et al. (2000) demonstrated support for the notion that differences in national culture are linked to cognitive differences affecting entrepreneurial activity. They measured cognition using scripts, which are beliefs or thought patterns hypothesized to precede or be associated with action. Specifically, three types of cognitive scripts were hypothesized to be associated with entrepreneurial activity. Arrangement scripts consisted of idea protection, having a venture network, having access to general business resources, and having specific skills. Ability scripts comprised venture diagnostic scripts, situational knowledge scripts, and the ability-opportunity fit scripts. Willingness scripts refer to the willingness to think about and partake in new venture activity. Included are actionable thoughts about opportunity seeking, commitment tolerance, and venture opportunity pursuit (Mitchell et al.). In their seven-country study (United States, Canada, Australia, Mexico, Chile, Japan, and China), they found that both Hofstede's individualism and power distance indices were related to willingness and ability. Also, individualism and power distance were found to moderate the relationship between arrangement and the decision to start a new venture.

These cross-cultural studies provide valuable insight into cultural-cognitive differences that may exist between countries and influence entrepreneurial activity. They provide some understanding of the cultural-cognitive dimension of institutions around entrepreneurship. However, they also suggest that "off-the-shelf" cultural dimensions, such as Hofstede's, may not be adequate for understanding the cultural-cognitive institutions around entrepreneurship (Hayton et al., 2002). More direct "entrepreneurial" cultural attributes, like innovativeness (Thomas & Mueller, 2000), might be more revealing. And the cognitive approach of employing scripts seems to be a promising way to investigate cultural-cognitive differences between nations. Cross-national studies are needed to develop relevant cultural attributes and cognitive measures.

Given our purpose in this study, we do not seek to extend the research into cultural-cognitive attributes around entrepreneurship. Our goal is to incorporate measures of cultural-cognitive attributes into a broader set of institutional measures. At the same time, we recognize the limitations of the existing measures of cultural attributes, such as Hofstede's. So we attempt to use available cross-national data on differences between entrepreneurs' knowledge, beliefs, and understanding as indicators of differences in cultural-cognitive institutions. The shortcomings of this approach will hopefully be offset

by the explanatory power that can be achieved through a comprehensive set of institutional variables at the national level that includes normative and regulative components.

**Normative Components.** The normative dimension consists of both the societal values (i.e., what is generally viewed as favored or attractive) and societal norms (i.e., how society believes matters should be performed and accomplished and/or what behavior is socially acceptable). The normative institutions provide a degree of stabilization through the imposition and internalization of norms on the individual, organization, and society (Scott, 1995). Following societal norms, individuals strive to act in socially acceptable fashion (March & Olsen, 1989).

Limited research has examined values and norms in conjunction with entrepreneurship activity. Findings from Reynolds, Levie, Autio, Hay, and Bygrave (1999) suggested a positive correlation between the founding of new firms and a positive view of entrepreneurs within a country. In addition, they found that a negative societal view attached to entrepreneurs who previously failed was negatively correlated to founding rates, while tolerance for inequality of income and wealth was positively correlated. Other research has found that societal feelings toward entrepreneurial activities are critical to the supply side of entrepreneurship. In order for an individual to act upon an entrepreneurial opportunity, he/she must feel supported to engage in entrepreneurial activity (Wennekers, Uhlaner, & Thurik, 2002).

For our purpose, existing cross-national data on entrepreneurs' perceptions of societal norms regarding entrepreneurial activity provide a good indicator of the relevant normative institutions. While not a direct and objective measure of normative institutions, it has the advantage of being a good indicator of how the entrepreneur perceived the social acceptability of launching their new venture. The normative pillar is distinct from the cultural-cognitive pillar in their mechanisms and content. The normative pillar is concerned with what people consider to be legitimate, acceptable ways of gaining something that has broad societal approval; in contrast, the cultural-cognitive pillar reflects beliefs that are ingrained in individuals and have been internalized (DiMaggio & Powell, 1983). Smallbone and Welter (2009, p. 59) offer further clarification, "Normative elements contain the collective sense-making of a society, while cultural-cognitive elements refer to the individuals' understanding of meta values and rules, which is influenced by individual experiences and backgrounds." The normative elements are broader and more collective social pulses of what is acceptable; the cultural-cognitive elements are aggregates of concepts and beliefs that drive individuals.

**Regulative Components.** The regulative pillar of institutions standardizes and limits actions. Vital to this pillar is the ability to set rules (either formal or informal) and establish rewards or punishments that influence future actions (Scott, 1995). Many regulations have bearings on economic activity: "Throughout history, governments have imposed a wide array of constraints on economic activity. Constraining economic choice distorts and diminishes the production, distribution, and consumption of goods and services (including, of course, labor services)" (Miller & Holmes, 2009, p. 12). Entrepreneurship activity levels can be affected by policies in numerous ways (Storey, 1994, 1999). Smaller organizations compared with larger organizations are more affected by administrative costs associated with observance of government regulations (Verheul, Wennekers, Audretsch, & Thurik, 2002). Wennekers et al. (2002) argue that economic development, including the tax rates and legislation, is instrumental to entrepreneurship activity. Fiscal incentives, subsidies, labor market regulation, and bankruptcy legislation codetermine the net rewards and the risks of the various occupational opportunities (Wennekers et al.).

Legislation can also hinder entrepreneurial activity. For example, ambiguous as well as large amounts of legislation hinder entrepreneurship activity (OECD, 1998). Bankruptcy laws affect an individual's cost analysis of the risk and outcome of going bankrupt compared with possible returns of a new venture. Also, bankruptcy may have normative implications due to induced social stigma concerns (OECD).

In a recent article closely related to our study, McMullen et al. (2008) showed that regulative institutions are related to the levels of entrepreneurship activity. Using the GEM 2002 measures of entrepreneurship across 37 countries, they found that government regulation of economic activity is related to the level of entrepreneurship activity. In particular, they found that strong property rights, fiscal freedom, and monetary freedom (see Index of Economic Freedom [IEF]) are positively related to entrepreneurship activity levels (but these factors affect opportunity- and necessity-motivated entrepreneurship differently). Even though McMullen et al. do not use the term "regulative," we interpret their theoretical arguments and measures as a focus on regulative institutions. Their argument is that laws and regulations that restrict economic freedom will increase the transaction cost of launching a new venture, thus altering the cost–benefit calculation of a prospective entrepreneur. Also in their model is the opportunity cost of launching a new venture versus seeking employment. They measure this using gross domestic product (GDP) per capita; the argument being that a richer country has higher wage levels and thus greater opportunity costs of lost wages while launching a new venture. In their findings, opportunity costs appear to have a much stronger role than the transaction costs associated with government regulation. Still, the role of regulative institutions is significant. The influence of regulative institutions on entrepreneurship needs to be examined further, particularly in a more comprehensive framework. We employ a similar set of measures to McMullen et al. to capture the regulatory dimension within our model.

## Types of Entrepreneurial Activity

In the previous sections, literature was explored for the components that may factor into entrepreneurship at the macro level. The general focus of the current study is what supports the creation of a new business venture in a nation. Specifically, entrepreneurial activity can be conceptualized as either opportunity or necessity motivated. Opportunity-motivated entrepreneurship activities are embarked upon in the spirit of innovation (Wennekers & Thurik, 1999) and profit and growth (Carland, Hoy, Boulton, & Carland, 1984) or may entail the leveraging of existing information in a new way (Kirzner, 1973, 1985, 1997). On the other hand, a necessity-motivated venture may be undertaken to provide employment and meet financial obligations out of economic necessity (Reynolds et al., 2002). An opportunity-motivated entrepreneur might devise a novel company and launch a new venture even though he/she may have other options to provide for their well-being. However, a necessity-motivated entrepreneur would typically enter with a known business concept to fill a perceived gap (e.g., a new location) to provide self-employment, being purely motivated by economic necessity meaning no viable options for other employment. One could argue that opportunity-motivated entrepreneurship has the potential to advance a country's economy, while necessity entrepreneurship mainly sustains it.

Previous research has indicated that necessity- and opportunity-motivated entrepreneurship should be considered separately when attempting to understand how context relates to the level of entrepreneurial activity. Institutions appear to shape both the type and the level of entrepreneurial activity. In a study using 2001 GEM data, two elements of the culture-cognitive pillar were significantly related to these two branches of

entrepreneurship (Morales-Gualdrón & Roig, 2005). Specifically, when respondents felt that they had the skills, knowledge, and experience to start a business, they were more likely to engage in both opportunity- and necessity-motivated entrepreneurship. When respondents were fearful of starting a business, they were less likely to engage in either type of entrepreneurship, but even less likely to engage in necessity entrepreneurship than opportunity entrepreneurship. The environmental context of countries may support one type of entrepreneurship more than the other.

## Research Questions and Hypotheses

Our broad research question is: How does the institutional environment shape entrepreneurial activity? We draw upon the previous work that conceptualized the institutional context for entrepreneurship using Scott's institutional framework, with regulative, normative, and cultural-cognitive dimensions (Busenitz et al., 2000; Spencer & Gomez, 2001, 2004). We concur that all three institutional dimensions are likely to play a role and that this broader conception is likely to have greater explanatory power than a focus on regulatory or cultural institutions alone. We attempt to improve upon earlier work using better measures of institutions and entrepreneurship. Following these previous studies, we use the observed differences in institutions among nations to serve as a natural "experiment." By relating differences in institutions to differences in entrepreneurial activity, we hope to contribute to explaining how institutions shape entrepreneurial activity.

Using the measures described later, we test the following hypotheses:

**Hypothesis 1:** Cultural-cognitive institutional support for entrepreneurship is positively related to the level of both necessity- and opportunity-motivated entrepreneurship activity at the national level.

**Hypothesis 2:** Normative institutional support for entrepreneurship is positively related to the level of both necessity- and opportunity-motivated entrepreneurship activity at the national level.

**Hypothesis 3:** Regulative institutional support for entrepreneurship is positively related to the level of both necessity- and opportunity-motivated entrepreneurship activity at the national level.

## Methods

### Measures

**Dependent Variable: Entrepreneurship Activity.** Most often, national entrepreneurship activity has been studied at the individual country level, in two-country studies, or in small-number multinational studies. Many of these studies have relied on master of business administration students as subjects and used self-employment and small business rates instead of using large national representative samples and actual entrepreneurship activity (e.g., founding rates). In 1999, the GEM research program began collecting national data on entrepreneurial activity and related entrepreneurial topics for 10 countries. The program has expanded over the years to include as many as 54 different countries in its annual surveys. The GEM data pose some problems for longitudinal research because of changes in some questions from 1 year to the next and the changing

as well as expanding list of countries surveyed each year. Still, they represent the best available comparable measures of entrepreneurial activity across a broad sample of countries. The alternative method of gathering country-specific entrepreneurship rates through existing measurements (e.g., comparing U.S. Census Bureau data with the Korean equivalent) would be challenging and laden with measurement inconsistencies.

From the publically available GEM data from 1998 to 2007, five measures (item prevalence, nascent criteria, new firm participation, total entrepreneurship activity, and motivation-based prevalence rates) have been developed by the GEM research program. Two measures of entrepreneurial activity included in the GEM research program are used for this line of research—opportunity-motivated entrepreneurial activity and necessity-motivated entrepreneurial activity. Opportunity-motivated entrepreneurial activities are those in which an individual recognizes an opportunity for a new product or service in a marketplace and starts up a venture to pursue it. This type of entrepreneurial activity creates employment and economic development. Alternatively, necessity-motivated entrepreneurial activity is driven by the economic necessity of limited or nonexistent employment options and may create employment but not necessarily economic development (Reynolds et al., 2002). Respondents are asked to identify if they are currently trying to start a new business (i.e., independent of work and part of work) and/or a current owner or manager of a business. Those participants that respond positively to entrepreneurial activity are asked follow-up questions that categorize their entrepreneurial activity as opportunistic (i.e., take advantage of opportunity, no better work choices, combination of both opportunity and no better work choices, or have a job but seek better opportunities). These two GEM items measure the percent of individuals who started a company for opportunity or necessity (GEM Consortium, 2005, 2006, 2007; Quill, Bosma, & Minniti, 2007).

**Independent Variables: Cultural Cognitive.** The GEM research program provided valuable data in the operationalization of the cultural-cognitive and normative dimensions of the model. For the cultural-cognitive construct, a composite has been created using two items. These items are percentages reflective of participants' answers to the 2005–2007 GEM's categorical questions. The first item taps the participants' perceived knowledge, skill, and experience required to start a new business. This item taps the participants' framing to make sense of their uncertain environment. It sheds light on how the participant views the handling of uncertainty, given their resources and background within the national context. It can be viewed as related to self-confidence in the entrepreneurial domain. The second item seeks to uncover the role of the fear of failure in preventing the starting of businesses. This item can be viewed as aversion to risk. Both items contribute to the cultural-cognitive construct and were therefore averaged to create a single item composite for this study.

**Independent Variables: Normative.** The normative construct has been operationalized using the cultural support index created by GEM. The index assessed the participants' perceptions of their society's view on entrepreneurship as a career, the status and respect given to those engaged in entrepreneurship, and the visibility of entrepreneurship in the media. All three components align with Scott's (1995) conceptualization of normative institutions. GEM created a composite of the three components, presented in percentage form.

**Independent Variables: Regulative.** The regulative dimension is operationalized using the Heritage Foundation/Wall Street Journal IEF. Economic freedom is defined as:

. . . absolute right of property ownership; fully realized freedoms of movement for labor, capital, and goods; and an absolute absence of coercion or constraint of economic liberty beyond the extent necessary for citizens to protect and maintain liberty itself. In other words, individuals in an economically free society would be free and entitled to work, produce, consume, and invest in any way they please under a rule of law, with their freedom at once both protected and respected by the state. (Miller & Holmes, 2009, p. 11)

Hence, the concept of economic freedom relates closely to the concept of regulative institutions. Government laws and regulations that guide and restrict economic action are regulative institutions. Regulative institutions that impede or foster economic freedom should have a corresponding effect on entrepreneurial activity.

The IEF consists of 10 components (business freedom, trade freedom, etc.) that are equally weighted to create the economic freedom scores for each country. Each component is a composite of underlying measures. For example, business freedom consists of 10 measures including the number of procedures to start a business, the time it takes to start a business, and the cost of starting a business. The index is measured consistently across a large number of countries. Survey years are from 1995 to present, with over 161 countries represented in the data sets we use. Countries are scored from one to five with low scores representing less governmental interference and with high scores meaning that a nation has a lesser degree of economic freedoms.

Some attention must be given to the operationalization of the regulative dimension of the model due to the distinct differences in diffusion and change rates between developed and less developed nations. The IEF reveals that governmental policies tend to change more rapidly in less developed countries. This dimension could account for variation in entrepreneurship activity levels between these two groups of countries.

Heritage Foundation/*Wall Street Journal*'s IEF has been used in the entrepreneurship research to measure the construct related to government regulations (e.g., Bell, Moore, & Al-Shammari, 2008; Crabb, 2008). In addition, the Heritage Foundation IEF is consistent with other operationalization of government regulations and national-level economic freedom indices employed in other research, such as Economic Freedom of North America Index (e.g., Gohmann, Hobbs, & McCrickard, 2008), Freedom House Economic Freedom Index (e.g., Farr, Lord, & Wolfenbarger, 1998), and the Economic Freedom of the World Index compiled by the Fraser Institute (e.g., Sobel, Clark, & Lee, 2007).

It has been argued that in order for a country to attain economic growth in the long term, the country needs to do well in all 10 factors (Block, 1991). The current study made use of the IEF composite for the regulative dimension. Previous research on the regulative institutions of entrepreneurship has analyzed fiscal burden of government, property rights, and regulation (Van Stel, Story, & Thurik, 2007). McMullen et al. (2008) tested all 10 components of the IEF in their model and found that only three of them contributed significantly to explaining entrepreneurship activity.

**Control Variables.** Gross national income (GNI) per capita has been included to control for the economic development of the country. Previous research has indicated a negative relationship between the economic development level of a country and self-employment (e.g., Noorderhaven, Thurik, Wennekers, & van Stel, 2004). This has held true in research that used per capita income as a proxy for a country's economic development. One explanation for this effect is that the opportunity cost of launching a new venture is higher when incomes from employment are higher (McMullen et al., 2008). Indeed, McMullen et al. found that per capita GDP was the strongest predictor of entrepreneurial activity in

their model. Per capita income is included in this research as a control, with GNI data drawn from the World Bank. We are not specifically testing a hypothesis about income effects but acknowledge the strong role that it has played in prior research and therefore include it in the model.

## Sample

The data set consists of participants in the 2005 (i.e., 35 countries), 2006 (i.e., 42 countries), and 2007 (i.e., 40 countries) GEM studies that represent the three most recent data years available to the public. A total of 52 countries are represented over this 3-year time period. Specifically, 24 countries are represented in all 3 years, 17 countries represented in two of the years, and 11 countries represented in a single year. Represented countries include developed and developing economies from North America, Asia, South America, Europe and Australia/New Zealand, and the Caribbean.

The GEM data are a representative sample of randomly selected adults between the ages of 18 through 64, an age range selected due to international and Western labor laws and practices (e.g., child labor laws and retirement age). In countries with at least 85% of the population having access to a telephone network, the national population was surveyed using a random dial methodology using lists and/or random digit dialing. For those countries in which the phone network was not as extensive, national teams conducted random walk face-to-face interviews. Data have been tested to ensure data accuracy and consistency regardless of collection method (Quill et al., 2007).

The total number of observations per country in the GEM 2005 study range from 1,003 (New Zealand) to 19,384 (Spain). The mean number of observations per country is 3,422. Response rates range from 6% (Japan) to 99% (Latvia) with the mean response rate of approximately 46%. For the 2005 sample, 26 countries were surveyed using the telephone (random digital dialing or random dialing from lists), 8 countries were surveyed using random face-to-face interviews, and 1 country employed all three methods (Minniti, Bygrave, & Autio, 2006).

The total number of observations in the GEM 2006 study range from 1,600 (Columbia) to 43,033 (United Kingdom). The mean number of observations per country is 4,053. Response rates range from 6% (Japan) to 96% (Hungary), with the mean response rate of approximately 45%. For the 2005 sample, 27 countries were surveyed using the telephone (random digital dialing and/or random dialing from lists), 10 countries were surveyed using random face-to-face interviews, and 3 countries employed phone and face-to-face sampling methods (Quill et al., 2007).

The total observation sizes in the GEM 2007 study range from 1,500 (Hungary) to 39,582 (United Kingdom). The mean number of observations per country is 3,489 (Bosma, Jones, Autio, & Levie, 2008). The 2007 Data Assessment document with specific response rates and sampling methods by country have not been released. For a complete overview of the sample across the 3-year time period, see Table 3.

## Analyses

Multiple regression was used to test the model after the basic assumptions were examined. First, potential multicollinearity was assessed using the tolerance index, variance inflation factor (VIF) index, and the condition index. Taking a conservative approach of a VIF of less than 1.0 (Bowerman & O'Connell, 1990) and a tolerance index greater than 0.2 (Menard, 1995), this study's independent variables are within acceptable limits.

Table 3

## List of Countries, Number of Participants, and Response Rates

Countries	2005 (N = 119,753)		2006 (N = 170,233)		2007 (N = 146,533)	
	Participants	Response rate (%)	Participants	Response rate (%)	Participants	
Argentina	2,008	66	2,007	30	1,719	
Australia	2,465	36	2,518	29	1,996	
Austria	2,000	82	—	—	—	
Belgium	4,000	59	2,001	25	2,028	
Brazil	2,000	91	2,000	66	2,000	
Canada	6,418	38	2,038	25	—	
Chile	2,000	23	2,007	41	3,662	
China	2,109	32	2,399	28	2,666	
Columbia	—	—	1,600	71	2,082	
Croatia	2,000	23	2,000	17	1,541	
Czech Republic	—	—	2,001	38	—	
Denmark	2,010	30	10,000	43	2,001	
Dominican Republic	—	—	—	—	2,081	
Finland	2,010	19	2,005	20	2,005	
France	2,005	34	1,909	19	1,576	
Germany	6,577	40	4,049	31	—	
Greece	2,000	22	2,000	11	2,000	
Hong Kong	—	—	—	—	1,701	
Hungary	2,878	91	2,500	96	1,500	
Iceland	3,934	65	2,001	54	2,001	
India	—	—	1,999	94	1,601	
Indonesia	—	—	2,000	55	—	
Ireland	1,945	15	2,008	17	1,897	
Israel	—	—	—	—	1,885	
Italy	2,001	40	1,999	21	2,000	
Jamaica	2,505	98	3,669	90	—	
Japan	1,990	6	2,000	6	1,569	
Kazakhstan	—	—	—	—	2,000	
Latvia	1,964	99	1,958	79	2,000	
Malaysia	—	—	2,006	86	—	
Mexico	2,011	74	2,029	72	—	
Netherlands	3,582	42	3,536	39	2,597	
New Zealand	1,003	29	—	—	—	
Norway	2,015	11	1,999	15	1,503	
Peru	—	—	1,997	47	1,861	
Philippines	—	—	2,000	90	—	
Portugal	—	—	—	—	2,023	
Puerto Rico	—	—	—	—	1,830	
Romania	—	—	—	—	1,739	
Russia	—	—	1,894	33	1,939	
Serbia	—	—	—	—	1,766	
Singapore	4,004	27	4,011	22	—	
Slovenia	3,016	20	3,008	22	3,020	
South Africa	3,237	66	3,248	74	—	
Spain	19,384	65	28,306	26	27,880	
Sweden	2,002	73	2,003	70	1,712	
Switzerland	5,456	38	—	—	2,148	
Thailand	2,000	21	2,000	41	1,999	
Turkey	—	—	2,417	64	2,400	
United Arab Emirates	—	—	2,001	24	2,097	
United Kingdom	11,203	24	43,033	29	39,582	
United States	2,021	43	2,080	72	1,583	
Uruguay	—	—	1,997	66	1,634	
Venezuela	2,000	83	—	—	1,709	

Note: 2007 response rates are not available.

The condition index was also reviewed for variables' values over 30 with at least two variance proportions over 0.50 (Belsley, Kuh, & Welsch, 1980; Tabachnick & Fidell, 1996). None of the variables met any of these criteria (i.e., highest condition index was 27.51). Histograms, residual scatter plots, and normal probability plots were reviewed for normality, linearity, and homoscedasticity and were determined to be acceptable. These tests ensured that the basic assumptions of linear regression were not violated.

Multiple regression was chosen for its ability to detect a relationship between multiple independent variables and a dependent variable. All hypotheses (hypotheses 1–3) were tested using SPSS (SPSS Inc., Chicago, IL, USA) by regressing the entrepreneurial activity on the independent variables. Multiple regressions were conducted for each of the dependent variables (i.e., opportunity entrepreneurial activity and necessity entrepreneurial activity), incorporating the hypotheses' independent variables and the control.

## Results

This study hypothesized that the normative, cultural-cognitive, and regulative components of a country's institutions were related to entrepreneurial activity. Therefore, the results later explore the relations between the three proposed predictors and entrepreneurial activity. Table 4 provides an overview of the means and standard deviations obtained for each measure.

The correlations between variables are presented in Table 5. The model and hypotheses were tested through multiple regression equations with outcome variables that represented the two different types of entrepreneurial activity: necessity and opportunity motivated. All of the model's predictor and control variables were entered simultaneously and tested with each outcome measure. Overall, both models explain a substantial portion of the variance in entrepreneurial activity: opportunity-motivated entrepreneurial activity (see Table 6; 2005:  $F = 9.35$ ; adj.  $R^2 = .50$ ;  $p < .001$ ; 2006: adj.  $R^2 = .38$ ,  $F = 7.39$ ;  $p < .001$ ; 2007: adj.  $R^2 = .43$ ,  $F = 8.35$ ;  $p < .001$ ) and necessity-motivated entrepreneurship (see Table 7; 2005:  $F = 18.80$ ; adj.  $R^2 = .68$ ;  $p < .001$ ; 2006: adj.  $R^2 = .51$ ,  $F = 11.49$ ;  $p < .001$ ; 2007: adj.  $R^2 = .53$ ,  $F = 12.12$ ;  $p < .001$ ).

Table 4

Means and Standard Deviations of Variables; 2005–2007

Variable	2005 (N = 35)		2006 (N = 42)		2007 (N = 40)	
	Mean	SD	Mean	SD	Mean	SD
Opportunity entrepreneurial activity	6.20	3.65	6.85	4.94	6.44	3.91
Necessity entrepreneurial activity	1.90	2.09	2.36	2.61	2.26	2.46
Cultural-cognitive	54.96	7.48	41.13	7.41	40.98	8.58
Normative	1.85	0.37	65.24	10.46	64.67	11.83
Regulative	68.25	9.76	66.48	9.30	66.04	9.81
GNI per capita	26,312.57	17,524.19	24,125.17	15,366.54	25,648.41	15,186.07

GNI, gross national income; SD, standard deviation.

Table 5

## Intercorrelation of Variables; 2005–2007

Variable	1.	2.	3.	4.	5.
<b>2005</b>					
1. Opportunity entrepreneurial activity	—				
2. Necessity entrepreneurial activity	0.547**	—			
3. Cultural-cognitive	0.568**	0.422*	—		
4. Normative	0.657**	0.536**	0.388*	—	
5. Regulative	0.096	-0.538**	0.032	0.040	—
6. GNI per capita	-0.178	-0.632**	-0.181	-0.184	0.550**
<b>2006</b>					
1. Opportunity entrepreneurial activity	—				
2. Necessity entrepreneurial activity	0.717**	—			
3. Cultural-cognitive	0.468**	0.330*	—		
4. Normative	0.525**	0.523**	0.567**	—	
5. Regulative	-0.198	-0.436**	-0.350*	-0.300	—
6. GNI per capita	-0.414**	-0.658**	-0.500**	-0.317*	0.665**
<b>2007</b>					
1. Opportunity entrepreneurial activity	—				
2. Necessity entrepreneurial activity	0.847**	—			
3. Cultural-cognitive	0.478**	0.411*	—		
4. Normative	0.656**	0.616**	0.631**	—	
5. Regulative	-0.160	-0.410**	-0.276*	-0.188	—
6. GNI per capita	-0.417**	-0.627**	-0.381*	-0.345*	0.648**

\*  $p < .05$ ; \*\*  $p < .01$  (two-tailed tests).

GNI, gross national income.

Table 6

## Opportunity Entrepreneurial Activity Regressed on All Predictor Variables; 2005–2007

Variable	2005				2006				2007			
	$\beta$	SE $\beta$	$\beta$	T	$\beta$	SE $\beta$	$\beta$	T	$\beta$	SE $\beta$	$\beta$	T
Cultural-cognitive	0.17	0.07	0.36*	2.66	0.12	0.05	0.30*	-2.59	0.17	0.07	0.36*	2.66
Normative	4.96	1.33	0.50**	3.72	0.18	0.06	0.37**	2.76	4.96	1.33	0.50**	3.72
Regulative	0.04	0.06	0.11	0.73	0.11	0.09	0.20	1.21	0.04	0.06	0.11	0.73
GNI per capita	0.00	0.00	-0.08	-0.53	0.00	0.00	-0.36	-2.16	0.00	0.00	-0.08	-0.53
Adj. R <sup>2</sup> = .50, F = 9.35***				Adj. R <sup>2</sup> = .38, F = 7.39***				Adj. R <sup>2</sup> = .43, F = 8.35***				

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$  (two-tailed tests).

GNI, gross national income; SE, standard error.

Table 7

Necessity Entrepreneurial Activity Regressed on All Predictor Variables; 2005–2007

Variable	2005				2006				2007			
	$\beta$	SE	$\beta$	T	$\beta$	SE	$\beta$	T	$\beta$	SE	$\beta$	T
Cultural-cognitive	0.06	0.03	0.22*	2.07	0.23	0.26	0.10	0.88	-0.03	0.04	-0.10	-0.68
Normative	2.33	0.61	0.41**	3.82	0.08	0.03	0.33*	2.68	0.11	0.03	0.51**	3.58
Regulative	-0.09	0.03	-0.40**	-3.34	0.02	0.04	0.06	0.38	-0.01	0.04	-0.04	-0.29
GNI per capita	0.00	0.00	-0.30*	-2.43	0.00	0.00	-0.57	-3.78	0.00	0.00	-0.46**	-3.04
	Adj. R <sup>2</sup> = .68, F = 18.80***				Adj. R <sup>2</sup> = .51, F = 11.49***				Adj. R <sup>2</sup> = .53, F = 12.12***			

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$  (two-tailed tests).

GNI, gross national income; SE, standard error.

## Results for Hypothesis 1

The first hypothesis concerned the cultural cognitive variable. It was hypothesized that a nation's cultural cognitions would have a positive and statistically significant impact on entrepreneurial activity (hypothesis 1). When examined with the other predictor variables in a multiple regression, the cultural cognitive measure significantly contributed to the model's variance for opportunity-motivated entrepreneurial activity (2005:  $\beta = 0.36$ ;  $p < 0.05$ ; 2006:  $\beta = 0.30$ ;  $p < 0.05$ ; see Table 6) and for necessity-motivated entrepreneurial activity (2005:  $\beta = 0.22$ ;  $p < 0.01$ ; see Table 7). Therefore, hypothesis 1 was supported by the 2005 and 2006 sample (the culture cognitive measure was not significantly related to either type of entrepreneurship in 2007). Nations with higher cultural cognitions (i.e., higher perceived knowledge and less fear about starting a business) were more likely to have higher rates of opportunity- and necessity-motivated entrepreneurship than those nations with lower levels of those cultural cognitions.

## Results for Hypothesis 2

The second hypothesis concerned the normative variable, hypothesizing a positive relationship when explaining entrepreneurial activity (hypothesis 2). When examined with the model's other predictor variables in a multiple regression with opportunity-motivated entrepreneurial activity as the outcome variable, the normative variable significantly contributed to the variance for all 3 years of the sample (2005:  $\beta = 0.50$ ;  $p < 0.01$ ; 2006:  $\beta = 0.37$ ;  $p < 0.01$ ; 2007:  $\beta = 0.54$ ;  $p < 0.01$ ; see Table 6). When examining the model with necessity entrepreneurial activity as the outcome variable, the normative variable significantly contributed to the variance for all 3 years of the sample (2005:  $\beta = 0.41$ ;  $p < 0.01$ ; 2006:  $\beta = 0.33$ ;  $p < 0.01$ ; 2007:  $\beta = 0.51$ ;  $p < 0.01$ ; see Table 7). This study's second hypothesis was therefore strongly supported by each year of the sample for both types of entrepreneurial activity.

## **Results for Hypothesis 3**

The third hypothesis concerned the regulative variable. Specifically, it was hypothesized that a significant portion of the variance would be explained by a positive relationship between regulative and entrepreneurial activity (hypothesis 3). When examined with the other predictor variables in a multiple regression with opportunity entrepreneurial activity as the outcome variable, regulative did not significantly contribute to the model's variance; however, the relationship was in the predicted direction. On the other hand, when the model was examined using necessity entrepreneurial activity, a negative relationship was statistically significant for 2005 ( $\beta = -0.40$ ;  $p < 0.01$ ; see Table 7). The model indicates that the higher the regulative component, the less likely a country has necessity-motivated entrepreneurship. Overall, hypothesis 3 was not supported; the statistically significant relationship between the predictor and the necessity outcome variable was in the opposite direction as hypothesized.

## **Discussion**

The purpose of this research was to gain a greater understanding of the determinants of macro-level entrepreneurship. The national differences in entrepreneurial activity may represent differences in social, cultural, and economic climates. This research was undertaken with a goal of understanding which aspects of national environments make countries most fertile for entrepreneurship. In today's world economies, it is imperative to understand what can support economic development; this research helps shed light on those macro-level determinants.

To examine the macro-level components, institutional theory was used as the framework for understanding the norms and customs, cultural values and beliefs, and rules of a nation's institutions and their relationship to entrepreneurial activity. This framework, borne of the sociology field, offers a tri-faceted lens for viewing complex social arrangements (Scott, 1995). A nation's normative, cultural-cognitive, and regulative pillars reflect the systems, beliefs, and practices; this research examines how those elements are indicative of countries' entrepreneurial activity.

Quantitative data were drawn from several years (2005, 2006, and 2007) of the multinational GEM study (i.e., aggregated survey data of individuals at the national level), the IEF from the Heritage Foundation, and economic data from the World Bank. Linear regression supported the proposed model with normative, cultural-cognitive, and regulative determinants significantly related to entrepreneurial activity. Two types of entrepreneurial activity were examined: entrepreneurship entered into for economic sustenance (necessity motivated) and entrepreneurship entered into for innovation and growth (opportunity motivated).

Specifically, the first hypothesis explored the role of the cultural-cognitive pillar in determining the two types of entrepreneurial activity. Countries whose residents felt that they had the skills and experience to start a business and when they were not fearful of failing at creating a business were more likely to have necessity-motivated (2005) and opportunity-motivated (2005 and 2006) entrepreneurship. The 2005 and 2006 findings lend support for our hypothesis; they must be interpreted with caution, given that the 2007 countries' data were not statistically significant, nor were 2006's data for necessity-motivated entrepreneurship. As a result, we encourage future research to examine the cultural-cognitive component over more years of data as the GEM files are released. In addition, future research with other data sources may parse the concept of

cultural-cognitive into scripts (e.g., arrangement, willingness, and ability scripts), which may shed a more nuanced understanding of how the cultural-cognitive component relates to entrepreneurship.

The regulative component, represented by the IEF, was hypothesized to have a positive effect on entrepreneurial activity. In other words, it was hypothesized that the more government regulations supported entrepreneurship, the more likely its residents would start businesses. The data reflected a different situation. For the most part, the regulative pillar did not significantly explain either opportunity- or necessity-motivated entrepreneurship, with the exception of 2005's negative relationship with necessity-motivated entrepreneurship. Taken together, the findings indicate that regulative components are not strongly influencing the creation of small business ventures. On its own, 2005's negative relationship (suggesting necessity entrepreneurship reduces as a country's economic freedom increases) could serve as a launching point for follow-up research. When a country's economic policies are supportive of entrepreneurial business ventures (e.g., business license procedures, government transparency, property ownership, etc.), its individuals may be less likely to enter into entrepreneurial activities out of economic necessity. Given that a significant relationship was evidenced for necessity entrepreneurship but not opportunity entrepreneurship, future research could explore whether the benefits of regulations support formal entrepreneurship (opportunity), rather than those borne of informal, necessity-driven situations. As with the other analyses, this 2005 finding is sustained while controlling for countries' per capita wealth. So it is not simply that wealthier countries (with less necessity-motivated entrepreneurial activity) tend to have more supportive regulative institutions. More detailed research is needed to understand the driving mechanisms for this negative relationship. In-depth country analyses or case studies could shed light on this phenomenon as well as on the lack of significant relationships between economic freedom (regulative dimension) and opportunity entrepreneurship.

The hypothesis examining the normative pillar was consistently positively related to entrepreneurship. The more that countries' residents believe their society views entrepreneurs favorably, the more likely they are to engage in entrepreneurship. This finding holds for both necessity- and opportunity-motivated entrepreneurship across all years (2005, 2006, and 2007).

This study supports the proposition of a relationship between norms and cultural cognitions and both types of entrepreneurial activity. When a country's people generally view entrepreneurs and their activities favorably, feel knowledgeable about entrepreneurship, and are not marred by a fear of failing at new business ventures, they are more likely to take the entrepreneurial leap. These findings hold for both opportunity-recognition and sustenance-based (necessity) ventures, regardless of countries' per capita wealth.

Two differences between our findings and previous research are worth noting. McMullen et al. (2008) conducted a similar study of institutions and entrepreneurial activity, also using both GEM and IEF data. First, they found that wealth (as measured by GDP per capita) was the strongest predictor of entrepreneurial activity, explaining considerably more of the variance than any of their institutional variables. They found a strong negative relationship between wealth and entrepreneurial activity, as they hypothesized. Their explanation was that the opportunity cost of launching a new venture is higher in a wealthier country where employment opportunities are better. In comparison, we had a similar result for necessity-motivated entrepreneurship, but we found that wealth was not significantly related to opportunity-motivated entrepreneurial activity. Also, the institutional variables explained more of the variance in both our models. Our

interpretation of these different results is that the institutional variables around cultural cognition and norms, which were the strongest predictors in our model, were not included in their model. Second, McMullen et al. found relatively weak effects for institutions. As we discussed previously, they focused on regulative institutions. They did find some support for the hypothesis that regulative institutions that provide greater economic freedom are associated with increased entrepreneurial activity, but the effects were relatively weak. Again, we interpret our much stronger findings for the institutional variables to be due to our inclusion of the cultural cognitive and normative dimensions.

Interestingly, we found that the regulative component was negatively related to necessity-motivated entrepreneurial activity. This finding suggests that a country's necessity-motivated entrepreneurship reduces in likelihood as that country's economic freedom increases. When a country has economic policies that are supportive of entrepreneurial business ventures (e.g., business license procedures, government transparency, and property ownership), its individuals are less likely to enter into entrepreneurial activities out of economic necessity. This finding is sustained while controlling for countries' per capita wealth. So it is not simply that wealthier countries (with less necessity-motivated entrepreneurial activity) tend have more supportive regulative institutions. More detailed research is needed to understand the driving mechanisms for this negative relationship. In-depth country analyses or case studies could shed light on this phenomenon as well as on the lack of significant relationships between economic freedom (regulative dimension) and opportunity entrepreneurship.

## Practical Implications

Overall, this study strengthens the notion that a country's macro-level institutional environment is significantly associated with its entrepreneurial patterns. The relationships between the macro dimensions (norms, cultural-cognitions, and regulations) and entrepreneurship lend support for policies that would seek to foster economic development through stimulating new business ventures. If countries seek economic development through new business ventures, this study supports their attention to macro-level institutions; in particular, the cultural cognitive and normative dimensions. Policies could be devised accordingly to align with and advance people's norms, perceptions, acceptance, and experiences with respect to engaging in entrepreneurship.

Education efforts could also be undertaken to shape normative beliefs of younger generations, with earlier exposure to entrepreneurial concepts and successes and with more specific inclusion of entrepreneurship in elementary to post-secondary curricula. Furthermore, great success has been seen in changing normative beliefs; those techniques could be adapted to changing norms about entrepreneurship. "Social norms marketing campaigns" have successfully used diverse media and sample-based data to shift people's perceptions of how the larger society views matters. Stemming from the social sciences, the approach has been heavily used in reducing harmful behaviors (e.g., underage drinking; DeJong et al., 2006; Perkins, Meilman, Leichliter, Cashin, & Presley, 1999), but it is also being used in other arenas (e.g., environmental norms and paying taxes; Wenzel, 2001). The field of entrepreneurship may benefit from this approach to altering norms that could enhance the normative, and thus the economic, climate of countries. These three threads (policy, education, and social campaigns) could stand alone or together to increase how favorably entrepreneurship is viewed and to increase the likelihood of residents engaging in it and strengthening their economy.

## **Limitations and Future Research**

In addition to policy support, this research suggests directions for more detailed understanding of the macro-level environment around entrepreneurship. In general, future research could be strengthened with larger samples. Our sample sizes of 35, 42, and 40 may be a concern and lead to some sample size sensitivity. Although the GEM data fill a void in the entrepreneurship field and yield many contributions, the data sets also have their own constraints (e.g., data collecting methodology, participating countries, and data availability). If additional data sets are made available in the future, rich research could utilize them to strengthen this study.

As mentioned previously, future studies could examine a smaller sample of countries with greater detail to understand the mechanisms at play. Our broad measures of institutions using available data can only provide limited understanding. Better measures of the three dimensions of institutions relating to entrepreneurship are needed. For example, the cultural-cognitive dimension suggests a variety of ways to explain how shared beliefs, schemas, and scripts affect entrepreneurial activity. Another direction for research could explore the interactions between the dimensions of institutions. Attention could be given to what happens when the “pillars” may be in conflict with each other. For example, laws introduced to stimulate entrepreneurship activity may unintentionally be in conflict with one or both of the other pillars (i.e., normative or cultural cognitive) that constitute the entrepreneurial environment within a country. As more data become available, a longitudinal study may highlight the relative importance of each dimension. For example, as the economic freedoms of countries are enhanced, the effects of such change will provide a greater understanding of the regulative institutional effects on entrepreneurial activity, as compared with the other dimensions. Future studies of the macro-level influences on entrepreneurial activity should continue to advance researchers, government officials, and nongovernmental organizations to gain a better understanding of what drives the entrepreneurial activity that leads to economic development.

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