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National Rates of Opportunity Entrepreneurship Activity: Insights From Institutional Anomie Theory

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We advance and test an institutional anomie theory of opportunity entrepreneurship for understanding the combinative effects of selected cultural values and social institutions to explain national differences in rates of opportunity entrepreneurship. We theorize opportunity entrepreneurship as a creatively deviant response to anomic conditions in societies, i.e., when social institutions block traditional means of achievement. Using 10 years of data for a pooled time series cross-sectional analysis, we examined a unique mixture of cultural and institutional variables and their interactions as predictors of nation-level opportunity entrepreneurship rates. We found support for most hypotheses showing that specific institutional contexts mitigate or enhance the effects of cultural drivers of opportunity entrepreneurship.

Introduction

A fundamental question for a sociological understanding of entrepreneurship is why do nations have different rates of entrepreneurial activities (Aldrich, 2005)? To answer this question, at least in part, we develop and test a theoretical argument viewing entrepreneurship as a type of "creative deviance" (Mainemelis, 2010) that arises from the existence of anomic strain in societies. As used here, following the classic work of Merton (1938) and the recent theoretical reasoning of Messner and Rosenfeld (1997), anomic strain represents the incongruence between cultural values that motivate entrepreneurship and the institutional conditions that facilitate or block the achievement of goals related to those values. Heretofore, the major focus of anomie theorists was to link anomic

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conditions to a variety of forms of negative deviance such as crime (Lilly, Cullen, & Ball, 2007). However, like Mainemelis, we argue that anomic strain can lead to deviance that is both creative and positive.

In most cross-national research that examines national differences in entrepreneurial activities, scholars focus primarily on institutional *or* cultural predictors of entrepreneurship activity, but typically not both and, if both, not on their combinative effects. Economists and some management scholars focus on the institutional drivers of entrepreneurship (e.g., Baker, Gedajlovic, & Lubatkin, 2005; Busenitz, Gómez, & Spencer, 2000; Davidsson & Henrekson, 2002; Spencer & Gómez, 2004). Cultural theorists examine the effects of national culture on entrepreneurship (e.g., Hayton, George, & Zahra, 2002). Sociologists explore phenomena such as socioeconomic development and the protestant ethic (e.g., Reynolds, 1991). Although not directly cross-national *per se*, there is evidence from sociological studies that the national culture of immigrants can promote entrepreneurship (e.g., Portes & Shafer, 2007).

Recent research (De Clercq, Lim, & Oh, 2011; Stenholm, Acs, & Wuebker, 2013) shows the benefits of looking at the independent effects of national culture and social institutions on entrepreneurship activity. As a logical extension of extant research, theorists have posited possible *combinative* effects of culture and social institutions on entrepreneurial activities and called for studies focusing on them (Hayton et al., 2002). Indeed, Bruton, Ahlstrom, and Li (2010) note that the inconsistent findings for cultural effects on entrepreneurship may result from the omission of institutional moderators. One recent study (Pinillos & Reyes, 2011), which found gross domestic product (GDP), a correlate of many institutional characteristics, as a moderator of individualism predicting country rates of entrepreneurial activity, suggests that such interaction effects are likely. However, extant treatments of national culture and social institutions yield dozens of dimensions resulting in a staggering number of possible combinative effects. Consequently, absent a cogent theoretical framework to guide variable selection, meaningful investigation of interactions between culture and the institutional context is greatly inhibited (Hayton et al.). Indeed, the field would benefit from a theoretical perspective that systematically combines specific cultural and institutional factors to explain, at least in part, society-level differences in entrepreneurship.

Toward this end, we extend Merton's (1938) classic strain theory of anomie and its modern rendition, institutional anomie theory (Messner & Rosenfeld, 1997), to advance and test an institutional anomie theory of opportunity entrepreneurship (IATOE). Our arguments focus on what Thornton (1999) calls the demand side explanation of entrepreneurship in that the anomic conditions in a nation encourage more (albeit not all) entrepreneurially predisposed individuals—the potential supply of entrepreneurs—to act on their inclinations. As such, since choice is involved, in this paper we consider only opportunity and not necessity entrepreneurship. Institutional anomie theory (IAT) provides a theoretical framework that rationalizes the choice of which particular cultural variables are central in driving opportunity entrepreneurship (OE) and how they combine with which particular institutional factors to influence national rates of OE. Specifically, IATOE and our empirical test of it explore how rates of OE vary across countries and are enhanced or muted by different combinations of cultural values and institutional factors.

We organize the remainder of this paper as follows. First, we provide a conceptual overview of entrepreneurship theory highlighting key underpinnings that set the stage for our theoretical development. Second, we review anomie theory and briefly visit the major theoretical streams as their relevancy to OE dictates. Third, based on the conceptualization of OE as creative deviance, we formulate a theoretical explanation of national differences in OE activities, that is, the IATOE. We use this theory to develop hypotheses for both the

direct and, more importantly, combinative effects of selected national culture and institutional variables on nation-level rates of OE. Fourth, we test these propositions using 10 years of data from 42 countries in a pooled time series cross-sectional with national culture and social institutions in combination as predictors of entrepreneurial activity. Fifth, we close with a discussion of the implications for further theory advances and for future empirical research.

Theoretical Underpinnings of Entrepreneurship and Anomie

Although entrepreneurship has been the focus of a vast body of work, scholars have noted the inability to arrive at a consensus definition (e.g., Baumol, 1993; Bull & Willard, 1993). Following recent theorizing (e.g., Shane, 2003; Shane & Venkataraman, 2000), our perspective is inclusive, ranging from the Schumpeterian (Schumpeter, 1934) focus on novelty and discontinuity to the more moderate approach described by Kirzner (1979, 1997) emphasizing exploitation of opportunities in existing markets. Consistent with this, we consider entrepreneurship as the discovery, evaluation, and exploitation of opportunities through organizing efforts not previously existing. Thus, we focus on the volitional startup of new firms or the actual creation of new enterprises, and term it "opportunity entrepreneurship."

Some theorists have argued that wealth creation and accumulation (Baumol, 1993; Ucbasaran, Westhead, & Wright, 2001) are the primary motives for entrepreneurship even in the presence of strong expectations of personal gain apart from and beyond wealth (Bull & Willard, 1993; Schumpeter, 1934). While noneconomic motives have some influence in developing a uniquely sociological explanation of contextual effects on entrepreneurship, we focus our arguments on entrepreneurial activity primarily but not exclusively motivated by wealth creation and status achievement.

Anomie as a Theoretical Framework

Albeit briefly, the bases of anomie theory can be traced to three related branches, the classic view offered by Durkheim (1897), Merton's extensions into deviance and strain theory (e.g., Merton, 1968), and the more recent institutional anomie theory (Messner & Rosenfeld, 1997). For Durkheim, anomie exists when the norms that regulate and control the activities of individuals and collectives become neutralized or weakened, most often by social change. Differing from Durkheim, Merton (1938, 1995) theorized that anomie is a pressure to depart from established conventions and norms that occurs because of strain produced by an inconsistency between the culturally prescribed aspirations of a society and the socially structured avenues for accomplishing them. Specifically, societies such as the United States, with values of social mobility, material possessions, and lucrative work, place great emphasis on achievement in general and wealth in particular. However, such societies do not always provide all segments of the population with the means to attain these goals. Consequently, according to Merton, when culturally accepted goals are blocked or difficult to attain by legitimate means, societies experience anomic strain and a resulting increased rate in the use of illegitimate means to achieve prescribed goals. For example, when achievement of valued outcomes is blocked, say by lack of educational opportunities to gain the skills valued in the labor market, more people may turn to alternative means for achieving valued outcomes. Merton's ideas spawned hundreds of studies on deviance ranging from drug use in adolescents to cheating in science

(for a review, see Marwah & Mathieu, 2006). However, recent theorists (Mainemelis, 2010) recognize that the outcomes of anomic strain need not be negative but can be positive and creative.

Institutional anomie theory expands Merton's limited focus on social stratification as the prime blockage of culturally supported achievement goals. IAT specifies not only a broader set of cultural values that motivate wealth and status achievement but also identifies other social institutions besides the stratification system that interact with cultural values to create anomie or in some cases diminish it (Messner & Rosenfeld, 1997, 2001). Like Merton, IAT posits that anomie exists when the institutional systems do not provide paths to achieve culturally prescribed goals related to achievement. In turn, the more anomic the conditions resulting from combinations of cultural and institutional systems, the greater the propensity for more people to choose alternative means to achieve wealth and status (Rosenfeld & Messner, 1997). Here, as we argue more extensively below, the choice of alternative means to achieve such goals need not be criminal or negative deviance; indeed, it may be creative and positive.

Adaptation to Anomic Conditions: The Paths of Negative and Creative Deviance. Anomie theory calls attention to possible patterns of adaptation when society's members face a lack of congruence between cultural values and the institutional context, the extent of which represents the level of anomie. Merton (1938, 1968) proposed that the most common adaptation to anomie is conformity, essentially acceptance of the values of society and tolerance of the incongruities between means to achieve goals related to those values. In contrast, adaptation through non conformity, i.e., deviant adaptation, involves goal pursuit using activities that depart or deviate from what is typical and expected. Further, Merton suggests that these nonconforming or deviant means become more compelling and attractive (albeit still for a minority) as anomic pressures build in a society.

Essentially, departures from expected patterns of behavior, whatever forms such departures take, constitute deviance (Best, 2006). Societies create and define deviance by setting up norms (i.e., expected patterns of behavior), making rules, and then applying those rules (e.g., Adler & Adler, 2006; Goode & Ben-Yehuda, 1994; Heckert & Heckert, 2004). Theorists classify norms broadly into two categories (Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007). Descriptive norms refer to what is commonly done, and injunctive norms refer to what is commonly approved or disapproved—what a person *ought* to do. Evidence suggests that both types of norms affect behavioral intensions and actions (Rivis & Sheeran, 2003). Importantly, sources for the *ought* in injunctive norms arise not only from moral or legal constraints and sanctions but also arise from other factors that have costs or benefits for the actor. The rational choice model of normative conformity (Axelrod, 1986; Coleman, 1989) holds that norms develop from patterns of utility-maximizing strategies—seek benefits, avoid costs.

Clearly, opportunity entrepreneurship is constrained by descriptive norms, as it is the occupational choice of very few. As the preeminent entrepreneurship scholar, Schumpeter noted, entrepreneurship is "peculiar and rare by nature" (Schumpeter, 1934, p. 85) and a departure from accustomed, routine, habitual ways of acting (Goss, 2005; Schumpeter). We find that opportunity entrepreneurship averages less than 5% for the countries in our study. However, the choice of an entrepreneurial career also faces injunctive normative constraints. Prospective entrepreneurs face utility-maximizing decisions (Douglas & Shepherd, 2002) typically constrained by high risks regarding success and varying degrees of support from significant others also aware of these risks (family, investors) that make opportunity entrepreneurship a deviant, albeit honorable, occupational choice.

Like Merton, Schumpeter (1934, p. 86) also recognized the tendency of most people to follow conventions and avoid being different, even if other options exist—"Thought turns again and again to the accustomed track even if it has become unsuitable and the more suitable innovation in itself presents no particular difficulties." As Goss (2005, p. 208) noted, and perhaps because of his "strong form" view of entrepreneurship focusing on novelty, discontinuity, and new combinations, "Schumpeter casts the entrepreneur firmly in the deviant's role." That is, although social controls rooted in conformity pressures limit the propensity of individuals to engage in " 'deviant' innovative entrepreneurial action" (Goss, p. 208), there remain the few who break from "the customary course of life" (Schumpeter, p. 86) to become entrepreneurs.

Historically, Merton (1968) and other anomie theorists (e.g., Durbin, 1959) focused on the negative side of deviance, casting it in terms of socially disapproved behaviors such as stealing, extortion, or corruption to achieve culturally supported goals of wealth and status achievement. However, theoretical advances in positive organizational scholarship (e.g., Spreitzer & Sonenshein, 2004), sociological views of positive deviance (Heckert & Heckert, 2002), and the perspective of anomie-induced creative deviance (Mainemelis, 2010) allow for a more comprehensive perspective suggesting that deviant adaptation to anomie can be positive and creative as well as negative and socially disapproved. Spreitzer and Sonenshein) define positive deviance as "intentional behaviors that significantly depart from the norms of a referent group in honorable ways."

In the positive deviance view, the heroic political activist who breaks with normative expectations and leads social change, the gifted athletic youth who trains multiple hours multiple times a day to win Olympic medals before getting a driver's license, and the selfless altruists such as Mother Theresa who sacrifice all to help others, are examples of deviance (e.g., Heckert, 1998). From the perspective of the broader society, the behaviors of these individuals depart from normative expectations, some quite radically. While highly admirable and even perhaps consistent with expectations in a restricted and limited group (e.g., an elite performance athletic club), such behaviors are not what most people do or are expected to do. Likewise, because it is quite familiar, it is easy to forget that opportunity entrepreneurship does not conform to the normative path (i.e., getting some education or skill and getting a job) for the vast majority. Yet, the creative deviance of the entrepreneur is an honorable and admirable departure from the typical occupational choice. Importantly, it is the view that violations of either descriptive or injunctive norms can be positive (i.e., positive deviance) as well as negative that provides the link we use to extend institutional anomie theory to the study of rates of opportunity entrepreneurship.

Anomie and OE. One form of deviant adaptation to anomie offered by Merton as an alternative to conformity, innovation, is of particular relevance in understanding national differences in rates of OE activity. Innovation involves the acceptance of goals and values such as the pursuit of wealth, but is deviant in that the accepted or traditional means for accomplishing goals are subordinated, reconfigured, or even rejected. Merton focused on innovation in its negative form, e.g., racketeering. However, with the recent theory advances broadening the scope of deviance to allow for activities that are not only creative or innovative but also positively evaluated, we advance OE as creatively deviant adaptation (Casson, 2003; Goss, 2005; Mainemelis, 2010) to anomic sociocultural conditions.

Anomie theory specifies the conditions under which forms of innovation or creative adaptation such as OE take place. Put simply, to the degree that cultural values propagate the need for achievement and success, when the traditional and usual means for achieving such goals, e.g., good jobs, education, or investment, are blocked, more people search for other less traditional and innovative paths to achieve valued ends. As an adaptation to

anomie, innovation can take a negatively deviant form such as racketeering or, as recognized by several authors (Hartman, Wilson, & Arnold, 2006; Martinelli, 2006), a positively creative deviant form such as OE.

Based on the theoretical frameworks discussed above, we now identify and develop the specific relationships between the predictors of societal rates of OE activity suggested by IAT. Because OE is volitional (a choice not driven by survival), we believe that rates of OE are more susceptible than are rates of necessity entrepreneurship to the interactions of culture and the institutional context. As derived from IAT, the strain version of anomie theory applied here implies a choice of adaptation strategies when faced with different combinations of cultural drivers and institutional opportunity structures. Survival-related entrepreneurship does not involve the volitional choice or any options of adaptation to anomic conditions.

An Institutional Anomie Theory of OE: The Combinative Effects of Culture and Institutions on Nation-Level OE Activity

A large body of literature links cultural values to variance in rates of entrepreneurship across national cultures (e.g., Hayton et al., 2002; Shane, 2003; Shane, Kolereid, & Westhead, 1991; Tiessen, 1997). Likewise, scholars argue that the institutional environment is a key, perhaps the key determinant of entrepreneurial activity (Baumol, 1990; Bowen & De Clercq, 2008; Davidsson & Henrekson, 2002; Salimath & Cullen, 2010; Shane; Spencer & Gómez, 2004; Stenholm et al., 2013). Although past research shows both cultural and institutional contexts affect entrepreneurship, joint treatments are rare in spite of the logic for them (Hayton et al.). Several studies do include multiple countries and offer preliminary clues regarding the importance of both (e.g., Tan, 2002). Importantly, the limited body of work recognizing the complex combinative effects of social institutions and national culture on entrepreneurship (e.g., Baumol, 1993; Hayton et al.) has suffered from the absence of an integrating theory to combine these factors systematically. Thus, to address this gap, we advance a theoretical framework for an integrated explanation of how certain (albeit not all) combinations of cultural and institutional factors affect rates of entrepreneurial activities, specifically OE.

Figure 1 depicts our conceptual framework for the institutional anomie theory of opportunity entrepreneurship. Anomic strain results when cultural values that increase the importance of achievement in general and wealth accumulation in particular exist with institutions that fail to provide sufficient avenues to achieve culturally prescribed goals. As the figure shows, we generally argue that, to the degree that such anomic conditions characterize a nation, there are increased rates of adaptation through positive creative deviance (OE).

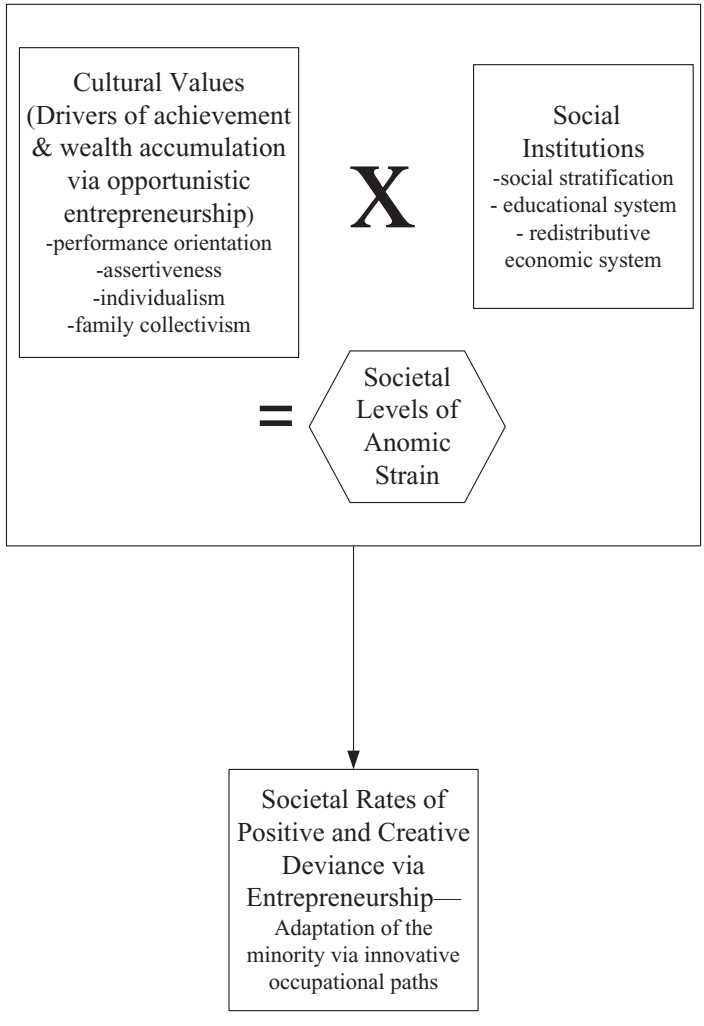
The Mechanisms of Cross-Level Effects on Entrepreneurial Behavior

In Hofstede's (2001, p. 1) view "Culture is the collective programming of the human mind that distinguishes the members of one human group from those of another. Culture in this sense is a system of collectively held values." From Schwartz's (2008) perspective, such collectively held values are central to culture's influence on behavior by providing the stimuli that focus conscious or unconscious attention on expected patterns of behaviors. As informed by its theoretical roots, in IATOE we are interested in identifying those cultural values that focus attention on achievement and wealth accumulation.

Institutions develop to accommodate needs for adapting to the environment, mobilizing and deploying resources of the society, and socializing members to accept society's

Figure 1

IATOE: Institutional Anomie Theory of Societal Rates of Opportunity Entrepreneurship: A Conceptual Model



norms (Parsons, 1951). Turner (1997, p. 6) defines institutions as social structures that organize "relatively stable patterns of human activity with respect to fundamental problems in producing life-sustaining resources, in reproducing individuals, and in sustaining viable societal structures within a given environment." Turner's approach to institutions is a neofunctionalist approach that essentially follows the classic sociological position that social institutions evolve to solve the basic problems of life faced by all human groups. He identifies the core social institutions of a society as the economy, family, polity, law, religion, and education. Some also recognize social stratification as a major social institution (Martin, 2004). Social stratification is the key institution in the Mertonian view of anomie. Institutional anomie theory (Messner & Rosenfeld, 1997) evolves from a similar theoretical tradition as Turner and adds a focus on the economy, polity, and education to the Mertonian foundation.

This macro-sociological view of institutional theory differs from what Bruton et al. (2010) call the "sociological/organizational theory" branch popular in organizational theory with its focus on legitimacy (DiMaggio & Powell, 1983; Scott, 2007). Although also sociological in its origin, our view aligns more closely with what Bruton et al. call "economic/political" branch with its focus on the rules of the game. Examples of this approach for conceptualizing and measuring institutions include Cullen, Parboteeah, and Hoegl (2004) and Delios and Henisz (2003).

Through regulative and incentive mechanisms, social institutions provide frameworks that both facilitate and constrain the range of individuals' activities and behaviors in a society or country including entrepreneurship (Aldrich & Wiedenmayer, 1993). That is, social institutions work by structuring appropriate courses of actions through opportunities and sanctions, essentially channeling behavior to meet system needs (Barley & Tolbert, 1997). In their recent review of the institutional theory literature applied to entrepreneurship, Bruton et al. (2010) argue that it is "widely acknowledged" that institutions enable or constrain entrepreneurial activities. North (1990, p. 83) made this point early on noting, "the agent of change is the individual entrepreneur responding to the incentives embodied in the institutional framework."

Although both national culture (Hayton et al., 2002) and the institutional context (Bruton et al., 2010) affect rates and types of entrepreneurial activities in societies directly, our major concern is how culture and social institutions combine to affect entrepreneurial choice by providing different contexts that attract or dissuade individuals with entrepreneurial predispositions to act on that predisposition. In our theorizing, such individuals represent a supply of potential entrepreneurs susceptible to influence by the context we describe in IATOE.

Generally, we argue that the cultural values discussed below lead to greater value of monetary and status outcomes. Thus, in societies with such values we expect more people to have a higher value for monetary and status achievements. In the absence of anomic strain, when the institutional context provides avenues to achieve valued outcomes (e.g., access to education), more people will perceive, for example, the expectancy of working hard in school will lead to skills and, in turn, believe that these skills will lead to good paying jobs. In such conditions, more of the entrepreneurially predisposed see greater utility in seeking organizational employment (Douglas & Shepherd, 2002). In contrast, with the presence of anomic strain, when the institutions do not provide sufficient paths to match the society's values, more people have lower expectancies regarding the returns from putting forth efforts to achieve wealth or status in traditional career paths based on employment in organizations. In turn, more of the entrepreneurially predisposed see greater utility in entrepreneurial options. This is not a deterministic model for all individuals but a sociological argument that the *tipping point* for the entrepreneurially predisposed moves depending on the interactions between cultural values and certain social institutions, which in turn affects the rates of entrepreneurship in societies.

The Cultural Underpinnings of Anomie and Their Implications for OE

IATOE identifies aspects of national culture as a motivating force for societal values supporting achievement, status, and wealth accumulation. The vast majority of cross-national research investigating entrepreneurial activity and national culture relies on Hofstede's (2001) model. Typical findings indicate that individualism, power distance, and low uncertainty avoidance cultures have more entrepreneurial activity (see, Hayton et al., 2002 and Taras, Kirkman, & Steel, 2010, for reviews). Recent cultural models

(e.g., House, Hanges, Javidan, Dorfman, & Gupta, 2004; Schwartz, 2008; Trompenaars & Hampden-Turner, 1998) offer additional cultural dimensions that may be useful for understanding entrepreneurial activity.

Indeed, the extant national culture models identify at least 27 dimensions of national culture making the choice of which dimensions to research problematic (given that the total population of countries = ~200) without a strong theoretical rationale. The cultural component of IAT (e.g., Messner & Rosenfeld, 2001) selectively emphasizes cultural values that support success and achievement. As such, we use only those cultural values that pertain to these ends in our test of IATOE. That is, here, anomie theory provides the nomological net for selecting a subset of the many available cultural dimensions that may relate to entrepreneurship.

We selected cultural dimensions from the GLOBE cultural model (House et al., 2004) that capture elements proposed by IAT. Specifically, these included performance orientation, assertiveness, and two forms of individualism/collectivism—institutional individualism and family collectivism. From the IAT framework, these cultural factors motivate and drive wealth and status achievement (Messner & Rosenfeld, 2001, p. 61). According to theory, these cultural values contribute to the creation of conditions encouraging egoistic goal seeking that, under the right conditions, lead to deviant adaptation, specifically through innovation, which we theorize can take the positive form of entrepreneurial activity.

At the cultural level, *performance orientation*, or what others have called achievement orientation (Trompenaars & Hampden-Turner, 1998), focuses on cultural values of identifying success via observable accomplishments. According to House et al. (2004) in high performance-oriented societies, people are valued more for what they do rather than who they are. That is, personal worth and status depends on the outcomes from effort. In such cultures, activities and social connections become more instrumental, focusing on task completion rather than on social integration (Trompenaars & Hampden-Turner). Performance-oriented cultures also likely encourage materialistic goals and competition to achieve such goals (House et al.; Passas, 2000). As such, in IATOE we hypothesize that:

Hypothesis 1: Performance orientation relates positively to national rates of OE.

Assertiveness as a cultural value encourages individuals to act more aggressively and confrontational in their relationships with others (House et al., 2004). Assertive cultures value competition and success. Assertiveness also encourages one to take control over one's environment and to emphasize results rather than relationships (House et al.). An assertive culture promotes taking the initiative, rewarding performance, and seeking demanding and challenging tasks. All of these are consistent with OE.

Assertiveness is a cultural value unique to the GLOBE study. However, assertiveness is related conceptually, although not operationally, to Hofstede's masculinity, a common predictor of entrepreneurship. In addition, the characteristics of assertiveness values are similar in many respects to what anomie theory attributes to individualism (see below) and performance orientation. Hence, we hypothesize:

Hypothesis 2: Assertiveness relates positively to national rates of OE.

Of the cultural characteristics we include in IATOE, individualism has the most extensive entrepreneurship research history (Hayton et al., 2002). *Individualism* promotes the values of autonomy, self-sufficiency, and competitiveness (Hofstede, 2001). The result is a greater concern with self rather than with common ends more typical of a

collectivist culture (Trompenaars & Hampden-Turner, 1998). As a cultural value, individualism encourages a disengagement from the collective that results in reduced bonds of social control based on group membership. That is, individualism supports the priority of personal goals and the subordination of collectivist activities that involve relating to and supporting others apart from goals, thus leading to more egoistic behaviors.

According to the GLOBE conceptualization of individualism, such values promote acting independently from organizations, the pursuit of individual goals at the expense of group loyalty, the belief that economic systems should maximize the interests of individuals, and base reward systems on the individual's contributions to task success. As such, from the IAT perspective, individualistic cultures are more competitive and value personal success (Messner & Rosenfeld, 2001). This motivates more people to seek increased achievement, with OE providing one path.

In general, past research using the Hofstede measure of individualism has been consistent with expectations based on IATOE, showing that higher levels of individualism in cultures relate to higher levels of entrepreneurship (Taras, Kirkman, et al., 2010). Although, more recent research using a much larger sample of countries found a negative relationship between Hofstede's individualism measure and rates of entrepreneurship for less developed countries (Pinillos & Reyes, 2011), given the predominance of past findings and the consistency with IATOE, we hypothesize:

Hypothesis 3: Individualism relates positively to national rates of OE.

Because the GLOBE study examined individualism/collectivism from two perspectives, we have the opportunity to apply a more refined view of the effects of individualism/collectivism on OE. Hypothesis 3 pertains to what GLOBE (House et al., 2004) terms institutional collectivism versus individualism. This concept contrasts group loyalty with individual goals, whether the economic system emphasizes individual or collective goals, the values of being or not being accepted by the group, and values of self-interest versus group cohesion.

Additionally, GLOBE examined *family collectivism*. This aspect of collectivism focuses on the degree to which people are interdependent with their families and express pride in and loyalty to their families (House et al., 2004). Although a simple interpretation of IATOE would suggest that any collectivist values should reduce the rates of national entrepreneurship, we believe that this particular component of the individualism/collectivism construct likely has a positive effect on OE rates. We based this argument on Aldrich and Cliff's (2003) family embeddedness perspective, which suggests that norms, values, and attitudes associated with family interaction are important factors in opportunity recognition, launch decision, and resource mobilization. Tiessen (1997) also argued that collectivism enhances entrepreneurship by leveraging external ties. Clearly, family collectivism represents a cultural value that maps consistently with embeddedness in and reliance on the family.

Research suggests that family positively affects the choice of entrepreneurial activities because family provides emotional support and a resource base (e.g., financing, labor, network contacts) to be leveraged (Chrisman, Chua, & Steier, 2002; Greve & Salaff, 2003; Sanders & Nee, 1996). Sirmon and Hitt (2003) argue that when entrepreneurs mobilize these resources appropriately, family provides a competitive advantage.

In addition, studies in developmental psychology show a connection between relatedness and achievement motivation. Strong connections with family allow children to work harder and ultimately become more successful. Children in collectivist cultures who

succeed bring pride to the family and share success with the family (Tamis-LeMonda et al., 2008). Hence, we hypothesize:

Hypothesis 4: Family collectivism relates positively to national rates of OE.

In sum, IATOE suggests that the GLOBE cultural values of performance orientation, individualism, assertiveness, and family collectivism increase the motivation for success and status resulting in increased societal rates of OE. Although we suggest culture dimensions novel to the study of entrepreneurship (e.g., performance orientation, assertiveness, and family collectivism), the general notion that cultural characteristics affect rates of entrepreneurial activity is not new (Hayton et al., 2002). What is novel in our theorizing is the argument that the main effects of culture or social institutions on societal rates of OE provide an incomplete understanding of the effects of the national context on OE. Rather, IATOE suggests that institutional factors strengthen or mitigate the cultural drivers to achieve economic and status success via opportunity entrepreneurship rather than traditional occupational paths. As such, we now consider an array of institutional factors that moderate the effects of IATOE-identified cultural values on OE.

Anomic Strain and the Combinative Effects of Social Institutions and National Culture: Implications for OE

Consistent with Messner and Rosenfeld's (2001) IAT and Merton's (1938, 1968) earlier view of anomie, we argue that the institutional factors of social stratification, education, and the political economic system, when combined with the cultural values noted above, mitigate or enhance anomic strains and, in turn, influence the rates of OE in societies. Although this is not an exhaustive list of societal institutions, it derives from theory and is consistent with prior research using anomie in cross-national research.

Social Stratification. Robert Merton's work on anomie focused on those aspects of social stratification that involve disparity in income and economic privilege. To the degree that the cultural values of success, wealth accumulation, and status are highly desired objectives in societies, there is pressure to strive toward such goals. Further, to the degree that a society is stratified, those at the lower end of income and economic privilege are disproportionately denied access to opportunities for accomplishing the culturally valued objectives of wealth and status. According to Merton (1938, 1968), diminished access constitutes a blockage to goal attainment and results in anomie and a strain toward deviance. Specifically in our case, when societies have greater culturally valued ends such as achievement and wealth accumulation and certain segments of the population are denied access to achieve such ends by the stratified system, there is an increased proclivity to achieve through positively deviant means, i.e., OE. For example, findings suggest that due to less desirable employment opportunities, poor immigrant groups in a culture face blockages in achieving wealth and status (e.g., Berry, 1997). While their reaction may be negative deviant adaptation (e.g., Fernández-Kelly & Konczal, 2005), importantly, evidence also suggests that immigrant groups have higher rates of entrepreneurship (e.g., Portes & Shafer, 2007).

In sum, arguments based on Merton's deviance theory and research suggest that greater social stratification indicates restricted access to resources and restricted opportunity for achievement and wealth accumulation through conventional occupational paths. This context provides incentives to seek economic productivity through innovation, in our

case, the positively deviant creativity that is OE. In addition, when the cultural values that provide more motivation for achievement and success combine with greater stratification, anomic strain increases resulting in higher rates of OE.

Hypothesis 5a–d: The cultural values performance orientation (hypothesis 5a), assertiveness (hypothesis 5b), individualism (hypothesis 5c), and family collectivism (hypothesis 5d) interact with the levels of social stratification such that, when levels of social stratification are greater, these cultural values have stronger relationships with societal rates of OE.

Education. The two functions of the social institution of education relevant to IATOE are the socialization function and the allocation function (Brinton, 2005; Meyer, 1977). In the socialization function, educational systems transmit values that increase concerns for others, politeness, and even a rejection of violence that might temper the effects of more performance and aggressive cultural characteristics. Cross-national research shows that nations with more inclusive educational systems have greater post-materialist values (Inglehart, 1997). Rather than economic and material achievements, post-materialist values prioritize quality of life and self-expression. As such, better-developed and accessible educational institutions socialize people to hold values that offset the materialist values, which promote achievement by any means. In its allocation function, developed and accessible educational systems also provide the training and skills that allow more people access to better paying and more intrinsically satisfying jobs (Blau & Duncan, 1967; Brinton). Nations with accessible and well-developed educational systems thus have more readily available means to achieve material success without resorting to less mainstream career paths.

As such, the most direct implication from IAT is that well-developed accessible educational systems serve to lower rates of OE. Specifically, access to increased levels of education may initially discourage OE as it empowers and provides more people with the necessary skill levels to gain better paying and more intrinsically rewarding jobs without the risk of entrepreneurship. More people can achieve status and wealth accumulation through the mainstream path of educational achievement.

However, consistent with arguments offered by economists (van der Sluis, van Praag, & Vijverberg, 2008), we believe that the association between education and OE is more complex than the basic theory suggests. Specifically, greater levels and access to education as well as a rising emphasis on entrepreneurship education at universities provide more skills to succeed in entrepreneurship making it more compelling and desirable as a path for goal accomplishment. In particular, the most advanced and accessible educational systems provide the opportunity to use technical and scientific skills to start new enterprises. Since the post-materialist values associated with better-developed educational systems increase concerns for self-expression (Inglehart, 1997), more educational development may also increase rates of OE driven not only by wealth achievement motives but also by self-actualizing motives. Thus, we argue that society educational development has a curvilinear relationship (U) with OE where higher educational development initially decreases OE, but as educational development continues to increase, its impact changes and increases OE.

In turn, when the effects of the cultural values pressing for wealth accumulation and success combine with educational development, we expect amplified effects from culture at the upper and lower extremes of educational development. Initially, as development and access to education increase, cultural pressures for wealth accumulation and success decrease OE as more people respond to these pressures by using education to achieve

status and wealth. In the context of very high levels of educational development, the effects of these same cultural values reverse. The cultural motivators of OE in societies that produce people with highly advanced skills and training spur the entrepreneurially predisposed to seek entrepreneurial career paths, perhaps with the safety net of returning to organizational careers should they fail. Thus, we hypothesize:

> **Hypothesis 6a–d:** The cultural values performance orientation (hypothesis 6a), assertiveness (hypothesis 6b), individualism (hypothesis 6c), and family collectivism (hypothesis 6d) interact with the level of educational development such that, at lower and increasing levels of accessible and developed educational systems, the cultural values decrease OE; while at higher and increasing levels of accessible and developed educational systems, the cultural values increase OE.

The Political–Economic System. Consistent with IAT, in our theorizing we focus on the intersection of the polity and the economy, particularly the political economy as fostered by government policies (Messner & Rosenfeld, 2001). As a social institution, the economy organizes the production and distribution of goods and services, and its major function is adaptation by satisfying basic material needs for survival (Messner & Rosenfeld; Turner, 1997). The IAT (Messner & Rosenfeld) calls attention to the dominance of the economy *vis-à-vis* other institutions, meaning that economic institutions have relatively more influence on societies. The economy compels individuals to accommodate the market rather than other institutional pressures because the market provides the necessary rewards linked to individual efforts. Yet, this situation results in a self-serving economic system where the priority is looking out for self-interest (Ralston, Holt, Terpstra, & Kai-Cheng, 1997). When strong market dominance is combined with cultural values that promote achievement and wealth accumulation, the result is increased anomic strain and an exaggerated level of deviant adaptation, here specifically positively deviant adaptation in the form of OE.

The polity as a social institution serves to mobilize and distribute power, and most importantly for IATOE, it serves to define and control economic systems (Messner & Rosenfeld, 2001). Specifically, because of its potential to mute the dominance of the economy, theory and research tend to focus on the extent of resource redistribution by governments. According to theory, wealth redistribution acts to countervail economic dominance.

Although governments vary in their appropriation and redistribution of economic wealth (Spencer, Murtha, & Lenway, 2005; Turner, 1997), in IATOE we focus specifically on the welfare economic benefits that differentiate political and economic systems because in polities dominated by more welfare socialist perspectives, decommodification predominates (Esping-Anderson, 1990). Decommodification involves policies that limit the degree to which society's members are treated as economic commodities because of subjection to economic dominance. Such policies involve social safety nets that protect people from the vicissitudes of the market and act as buffers from the harsh competitive forces that can characterize unrestricted capitalist systems. Redistributive benefits gained via progressive taxation reduce income differences while providing health care, welfare programs, and housing as security nets (Esping-Anderson). According to theory, redistribution disengages people from dependency on competitive market forces (Savolainen, 2000) by protecting them from the fickleness and variability of the market (Messner & Rosenfeld, 1997, p. 1394). In essence, decommodification acts to countervail contexts that encourage the pursuit of self-interest in economic activities.

When the state manages the economic system with the objective of protecting and providing for people with expansive benefits such as health care, welfare programs, housing, etc. (Rossides, 1990) and dictates earnings redistribution for equitable sharing of rewards (e.g., Brus & Laski, 1989; Davidsson & Henrekson, 2002), institutional incentives for prioritizing work and industriousness are reduced (Parboteeah & Cullen, 2003; Walder, 1992). Koellinger and Minniti (2009) found that increased unemployment benefits reduce nascent entrepreneurial activity. Such findings are consistent with the logic of IATOE predictions and suggest that such leveling of rewards may discourage individual initiatives and related OE. The likely result in such societies is a reduction in anomic strain and the muting of rates of OE induced by the cultural values that motivate wealth and status seeking. Thus:

Hypotheses 7a–d: The cultural values performance orientation (hypothesis 7a), aggressiveness (hypothesis 7b), individualism (hypothesis 7c), and family collectivism (hypothesis 7d) interact with extent of redistribution in an economic system such that, when levels of redistribution are greater, these cultural values have negative or reduced relationships with societal rates of OE.

Methods

Data and Sample

The data on entrepreneurship came from the Global Entrepreneurship Monitor's (GEM) annual assessment of worldwide entrepreneurship. We used 10 years of data from 2001 to 2010. The GEM study began as a partnership between London Business School and Babson College. It includes numerous national teams with the goal of providing an annual assessment of the national level of entrepreneurial activity in different countries. Beginning in 1999 with 10 countries, coverage expanded to more than 40 countries within a decade (Minniti, Bygrave, & Autio, 2006; see http://www.gemconsortium.org/default.aspx). Recent research showing the richness of the GEM data includes Baughn, Chua, and Neupert (2006), De Clercq et al. (2011), and McMullen, Bagby, and Palich (2008).

The GEM's Adult Population Survey asks standard questions concerning business startup activities in each country. Private market research firms interview (primarily by telephone) a representative weighted sample of at least 2,000 adults between the ages of 18 to 64. Questionnaires are translated from English into the native language of each country. More detail on the data analysis is available in Reynolds et al. (2005).

Our sample included 42 nations observed over 10 years from 2001–2010 for which cultural and institutional data were available. We selected 2001 as the starting date as that was the first year that the GEM study separated opportunity and necessity entrepreneurship. Since the GEM team did not study all countries every year, our data were structured as an unbalanced pooled time series cross-sectional data set with 279 available observations. The pooled time series cross-sectional design allows examination of more complex models for cross-national study than can be accomplished with the necessarily limited number of countries with available data.

Nations studied were Argentina, Australia, Austria, Bolivia, Brazil, Canada, China, Colombia, Denmark, Ecuador, Egypt, England, Finland, France, Germany, Greece, Guatemala, Hong Kong, Hungary, India, Iran, Ireland, Israel, Italy, Japan, Korea, Malaysia, Mexico, Netherlands, New Zealand, Portugal, Russia, Singapore, Slovenia, South Africa, Spain, Sweden, Switzerland, Thailand, Turkey, United States, and Venezuela. These

countries represent approximately 20% of the available countries in the world but represent the majority of the world's population and commercial activity.

Measures

The dependent variable, *opportunity entrepreneurship rate* (OER), was each country's percentage of individuals engaged in early stage opportunity entrepreneurial activity as derived from the Global Entrepreneurship Monitor's (GEM) Adult Population Surveys. We separated opportunity from necessity entrepreneurship as our theory concerns cultural and institutional predictors of rates of entrepreneurship not driven by survival needs. Operationally, GEM defines an early stage entrepreneur as one involved in setting up a business to owner–managers of new business (up to 3.5 years old). Opportunity entrepreneurship was identified with the following question: "Are you involved in this start-up to take advantage of a business opportunity or because you have no better choices for work?" (Bosma, Jones, Autio, & Levie, 2008).

National Culture. For the culture constructs included in our study, we used selected national culture measures from the GLOBE study (House et al., 2004). To develop a set of national culture measures, House and colleagues conducted a broad-based, cross-national, cross-industry study involving 62 countries.[1] The resulting study produced ecological measures of several nation-level cultural dimensions relevant for our study. Although most measures of national culture in organizational research have used Hofstede's (2001) model, for our research, the GLOBE study provided not only more recent data but also indicators representing IAT constructs and coverage of an increased number of countries.

Unlike previous research on national culture, the GLOBE study measured cultural dimensions from two perspectives, what they called the "should be" and "as is" aspects of culture (House et al., 2004). The "should be" represent a society member's values regarding what should be the practices in their society. The "as is" represent a society member's perceptions of current practices. Because we were interested in aspiration value systems, consistent with past research (Martin, Cullen, Johnson, & Parboteeah, 2007), we used the "should be" measures. This approach avoids a possible confound of a unique reference group for the "as is" GLOBE measures (Javidan, House, Dorfman, Hanges, & De Luque, 2006; Peterson, 2004). The "should be" measures represent modal values of collectives, and the approach follows in the anthropological tradition of culture assessment (Kluckhohn & Strodtbeck, 1961). Importantly, given the ambiguous relationships between the GLOBE measures of values and practices (Taras, Steel, & Kirkman, 2010), the values (should be) approach is more consistent with the past research on culture and entrepreneurship and with both the Mertonian and IAT approaches to cultural. For the one measure in common with the Hofstede model, individualism, our "should be" GLOBE measure of institutional individualism correlated positively (.43) with the Hofstede indicator.

Our measures of performance orientation, assertiveness, individualism, and family collectivism come directly from the country-level scores published by House et al. (2004). The GLOBE measure of *performance orientation* assesses the extent to which a society

1. In addition to the book detailing the study, further information on the methodology can be found at the websites below:
http://business.nmsu.edu/programs-centers/globe/
http://www.thunderbird.edu/wwwfiles/sites/globe/pdf/GLOBE_Phase_2_Beta_Questionnaire.pdf

"encourages and rewards group members for performance improvement and excellence" (House et al., p. 239). The work of Trompenaars and Hampden-Turner (1998) provided the foundation for the GLOBE measure. The GLOBE measure of *assertiveness* assesses "the degree to which individuals are assertive, confrontational, and aggressive in their relationships with others" (House et al., p. 30). To operationalize the construct of *individualism*, we reverse coded the GLOBE measure of institutional collectivism, which reflects the degree to which societal values encourage and reward collective distribution of resources and collective action (House et al.). *Family collectivism* represents "the degree to which individuals express pride, loyalty, and interdependence in their families" (House et al., p. 463).

Social Institutions. To capture the extent of *social stratification*, we used the Gini index of income distribution. We used the United Nations annual Human Development Reports (http://hdr.undp.org/en/reports/) and the World Bank (http://data.worldbank.org/indicator) to obtain the Gini index values. The Gini index varies between 0, which reflects complete equality (all people have the same income), and 1, which indicates complete inequality (one person has all the income). Often represented graphically by the area between the Lorenz curve and the line of equality, the Gini is the most commonly used measure of inequality (e.g., Parboteeah & Cullen, 2003).

We measured *educational development* (i.e., accessibility) with the United Nations educational index available in the annual Human Development Reports (http://hdr.undp.org/en/reports/). This score is computed by the formula: 2/3 of adult literacy rates + 1/3 of mean years of schooling. It is generally accepted as indicating access to education in a country (e.g., Parboteeah & Cullen, 2003).

Our measure for *economic redistribution* included three items: two came from the United Nations Human Development Reports' measures of "priorities in public spending," including public expenditures on education and health as a percentage of gross domestic product. The third indicator, from the World Bank and OECD (http://www.oecd.org/ctp/taxdatabase), was the highest marginal tax rate. These indicators were standardized and summed and had an Alpha = .75. Consistent with theoretical arguments of Turner (1997), we reasoned that countries that are more redistributive have a higher degree of governmental intervention reflected in government expenditures and revenues.

Control Variables. All control variables came from World Bank data (http://data.worldbank.org/). Consistent with most multi-nation research by economists on self-employment as a proxy for entrepreneurship (e.g., Noorderhaven, Thurik, Wennekers, & van Stel, 2004), we used GDP *per capita* as a control variable. Since past research (Wennekers, van Stel, Thurik, & Reynolds, 2005) found a curvilinear relationship with total entrepreneurship activity and GDP *per capita*, we also introduced a squared term. Substantive results were unchanged so we did not include the squared term in the models below. Sociological evidence on immigrants, and particularly those from more collectivist cultures, suggests that they are more prone to entrepreneurial activity because they can draw on the resources, social capital, and trustworthiness associated with their groups (Portes & Shafer, 2007; Sanders & Nee, 1996). As such, to adjust for the possible increased likelihood of immigrants starting entrepreneurial activities, we used the percentage of immigrant stock as a control variable.[2]

2. Since the initial data-gathering stage of this study, the World Bank has modified its online data access. In the now free version, some indicators available previously are no longer available. To add 2010 to the study,

Analyses Techniques

Our analyses included 12 pooled time series, cross-sectional models. Model 1 tested the main effects hypotheses for national culture and social institutions with control variables predicting national rates of OE. All other models tested the interactive effects for the cultural variables with social stratification, educational development, and redistribution. Due to the complex nonlinear interactions with educational development, we examined each cultural variable separately except for institutional individualism and family collectivism, which are related constructs.

The *F*-tests for each model suggested that year fixed-effects models were appropriate (Wooldridge, 2002). Year fixed effects represent underlying changes in OER across time at the national level that are not accounted for by observed country-level variables in the models. Because the national culture variables are time invariant, a fixed-effect model for nations was not possible. We used a modified Wald statistic to test for heteroskedasticity as recommended by Baum (2001). The test for first-order serial correlation was the Wooldridge test for autocorrelation in the errors of a linear-panel model as recommended by Drukker (2003). These tests indicated the presence of heteroskedasticity and modest levels of serial correlation. As such, we used generalized least squares to test our hypotheses and to correct for heteroskedasticity and common AR(1) serial correlation.

Given the moderately high correlations among GDP, education, and social stratification, we examined variance inflation factor (VIF) statistics for an ordinary least squares (OLS) version of the model, and only the VIF for GDP was greater than four suggesting that multicollinearity was not a problem. However, because of the higher VIF for GDP and higher correlations with other variables, we estimated all models reported below without GDP. The results in terms of direction and significance did not change.

Results

Table 1 shows a matrix of correlations and sample statistics for all variables used in this study. Table 2 shows the models for hypothesis testing.

Figures 2–4 provides plots of the interaction effects to aid in interpretation. To aid in interpretation, variables were standardized. The plots represent predicted levels of OER by the cultural variables at high (+1 standard deviation [SD] above the mean) and low (−1 SD below the mean) levels of each social institution variable, with the exception of education. To capture the nonlinear relationships, we plotted four illustrative levels, +/−1.5 SD (high, low) and +/−.75 SD (mid high, mid low).

Model 1 in Table 2 shows the main effects of all culture, institutional, and control variables entered simultaneously. Supporting hypotheses 1 and 4, performance orientation and family collectivism had positive effects on OER. Contrary to hypotheses 2 and 3, assertiveness predicted OER negatively, and individualism had no effect. With regard to the social institutions, social stratification and educational development related positively to OER while redistribution had a negative effect. Model 5 shows the expected nonlinear effect of educational development included to test the nonlinear interaction effects with the cultural variables. Figure 3 shows a plot of this U-shaped relationship.

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we supplemented the online data with information available in publications by the World Bank and the UN. We also used additional sources such as the CIA World Fact Book, NationMaster.com, and country websites to replace missing data from the World Bank and the UN.

Table 1

Descriptive Statistics and Correlations

	Opportunity entrepreneurship rates (OER)	Performance orientation (PO)	Assertiveness (AS)	Individualism (IND)	Family collectivism (FC)	Social stratification (SS)	Educational development (ED)	Redistributive polity (RED)	GDP *per capita*-GDP	Percent immigrant of population (% IM)
M/SD	4.96/3.18	5.92/.31	3.820/.70	2.25/.49	4.68/.35	39.27/10.12	.75/.15	.00/2.44	15,430/ 11,780	8.71/10.09
PO	.331**									
AS	−.043	−.123*								
IND	−.222**	−.442**	.317**							
FC	.403**	.527**	−.080	−.175**						
SS	.315**	.188**	.011	−.418**	.084					
ED	−.170**	−.151*	−.104	.498**	.007	−.625**				
RED	−.211**	−.077	−.185**	.360**	−.033	−.659**	.683**			
GDP	−.264**	−.237**	.036	.471**	−.170**	−.619**	.786**	.562**		
% IM	−.104	−.118*	.047	.270**	−.020	−.147*	.423**	.147*	.581**	

* $p < .05$, ** $p < .01$; n = 279.

Table 2

Pooled Time Series Cross-Section GLS Analysis of OER

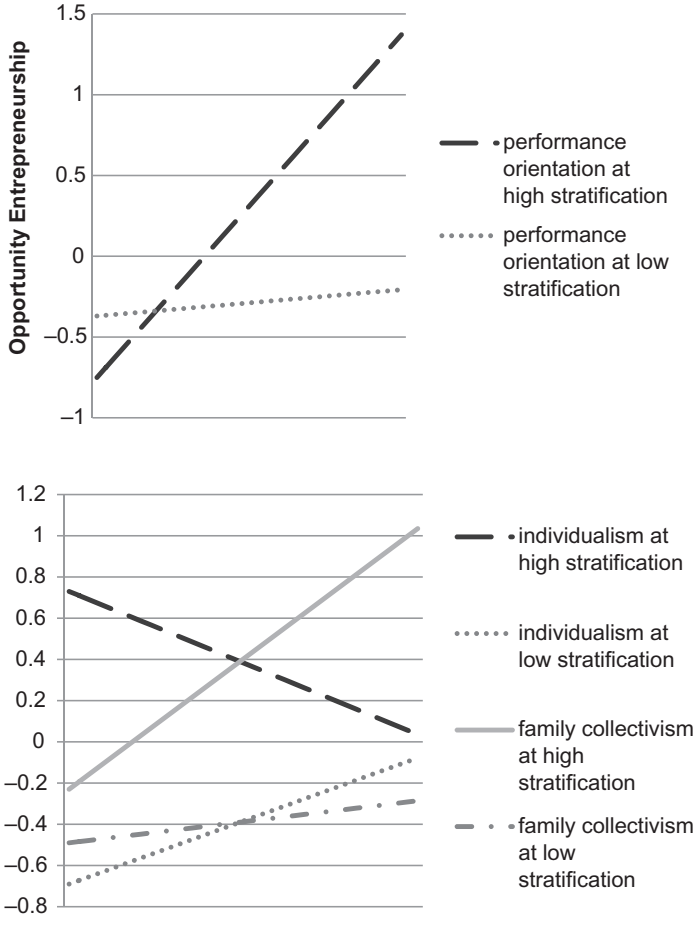
Variables

		Models											
Hypothesized sign		1	2	3	4	5	6	7	8	9	10	11	12
National culture													
Performance orientation—PO	+	.16**	.28***	.15**	.07	.09	.49***	.13*	.15**	.10	.32***	.11*	.11
Assertiveness—AS	+	−.12*	−.10	−.13*	−.12*	−.18**	−.06	−.07	−.13*	−.19***	−.11*	−.12**	−.07
Individualism—IND	+	.03	.10*	.03	−.01	−.02	.00	−.01	−.28***	−.00	.08	.08	−.04
Family collectivism—FCOL	+	.27**	.15	.26***	.18**	.34***	.18**	.35***	.19**	.24**	.17**	.36***	.23***
Social institutions													
Social stratification—SS		.32***	.29***	.33***	.39***	.47***	.38***	.45***	.26***	.42***	.26***	.34***	.24***
Educational dev.—ED		.18***	.18***	.18**	.20**	.27**	.08	.18*	−.99*	.11	.14*	.36**	.19*
Redistribution—RED		−.18**	−.19**	−.18**	−.16**	−.14	−.12	−.12	−.10	−.15*	−.32***	−.25***	−1.42***
Controls[†]													
GDP		.05	.02	.05	.05	.25**	.26**	.26**	.23*	.25**	.14	−.06	−.12
% Immigrants		−.17**	−.11	.18**	.11	−.21***	−.14*	−.22***	−.15*	−.22***	−.14*	−.28***	.07
Interaction effects													
PO × SS	+		.24***										
AS × SS	+			.05									
IND × SS	+				−.16***								
FCOL × SS	+				.13***								
ED * ED = ED^2	U					.37***	.38***	.48***	.22***	.55***			
PO × ED^2[‡]	U						−.27**						
AS × ED^2	U							−.14*					
IND × ED^2	U								.34**				
FCOL × ED^2	U									.24**			
PO × RED	−										−.34***		
AS × RED	−											−.34***	
IND × RED	−												.50***
FCOL × RED	−												−.12**

* $p < .05$.
** $p < .01$.
*** $p < .001$.
[†] Dummy variables for Year omitted for table simplification.
[‡] Two-way interactions with education omitted for table simplification.
GDP, gross domestic product; GLS, generalized least squares; OER, opportunity entrepreneurship rate.

Figure 2

Moderating Effects of Social Stratification on Cultural Drivers of Opportunity Entrepreneurship (OE)

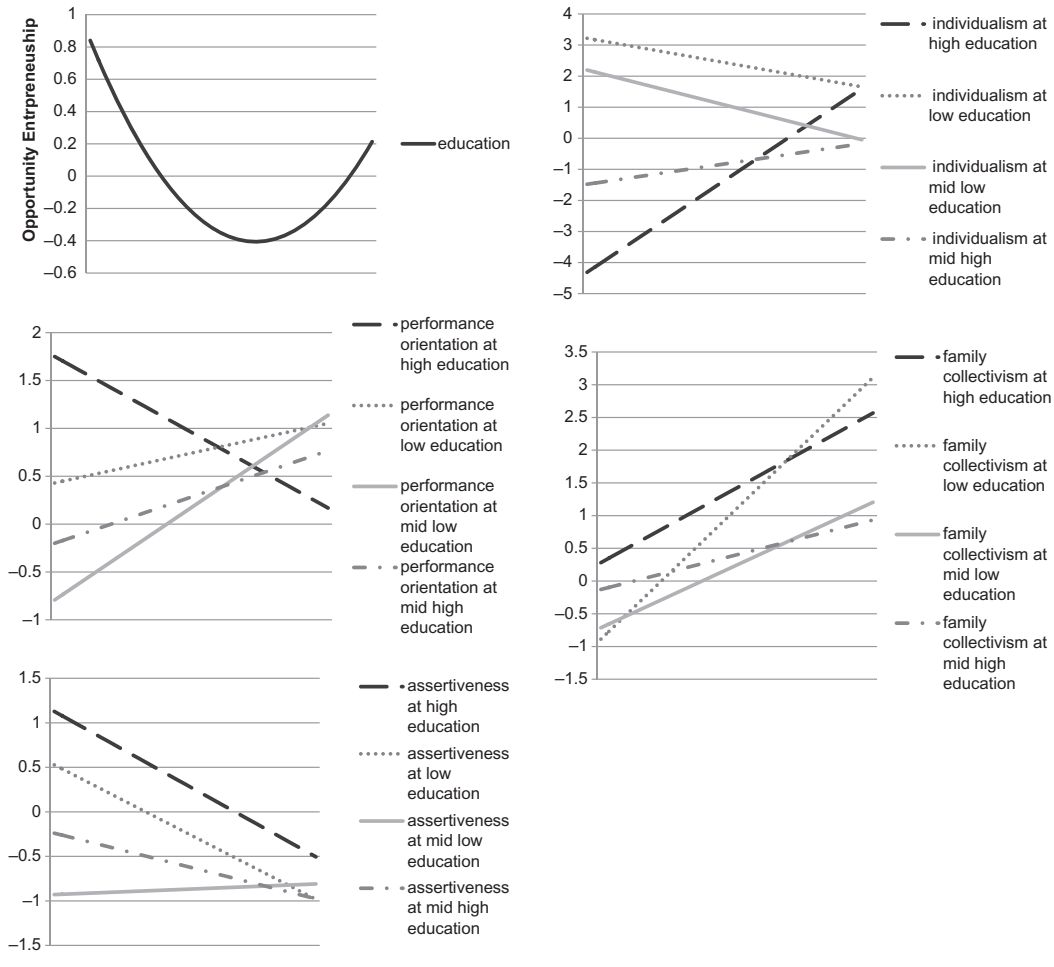


In hypotheses 5a–d, we predicted interaction effects between the cultural values of performance orientation, assertiveness, individualism, and family collectivism with social stratification. Models 2–4 in Table 2 show the results for these hypothesis tests. Supporting hypotheses 5a and 5d, we found significant positive interaction effects predicting OER for performance orientation and family collectiveness with social stratification. Counter to hypotheses 5b and 5c, we found no interactive effect for assertiveness with social stratification, and the interaction effect for institutional individualism was significant in the opposite direction.

As Figure 2 shows, and as predicted, the effects of performance orientation and family collectivism on OER increase as social stratification increases. Although institutional individualism had no main effects on OER, at higher levels of stratification, its effects are negative. While somewhat surprising given past research and theory, this relationship is similar to Pinillos and Reyes's (2011) findings reporting negative relationships for Hofstede's individualism measure with both necessity and OE. Essentially, the data show

Figure 3

Nonlinear and Moderating Effects of Educational Development on Cultural Drivers of Opportunity Entrepreneurship (OE)

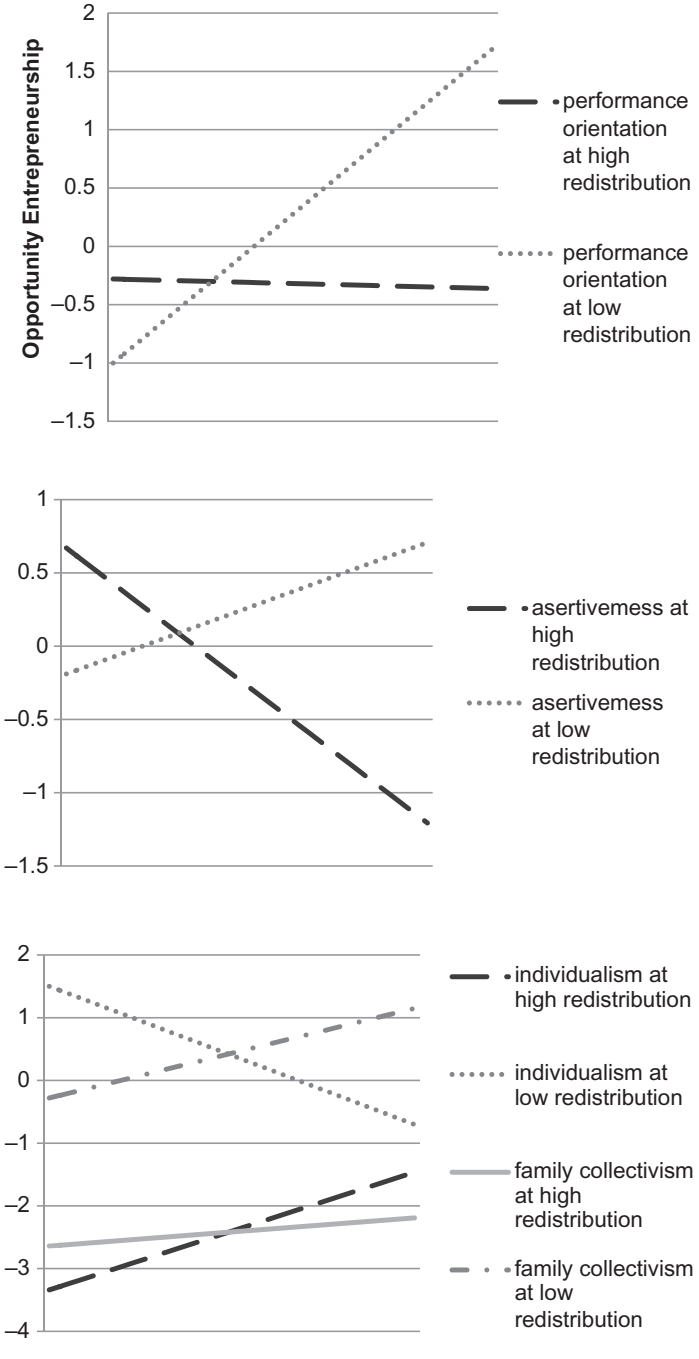


that both family collectivism and institutional collectivism have similar relationships with OER contingent on the levels of stratification.

In hypotheses 6a–d, we predicted that the cultural values of performance orientation, assertiveness, individualism, and family collectivism interact with the level of educational development and access increasing societal rates of OER at lower levels of educational development, decreasing OER at moderate levels of educational development and, in turn, increasing OER at the higher levels of educational development. As shown in Table 2, all cultural variables had significant nonlinear interactions with educational development in predicting OER. Figure 3 shows that performance orientation has a general positive effect on OER at lower to mid levels of educational development, partially supporting hypothesis 6a. At the highest levels of educational development, performance orientation reduces levels of OER, counter to hypothesis 6a. Thus, for performance orientation, while we did find the expected increase in OER at lower levels of educational development, we did not

Figure 4

Moderating Effects of Redistribution on Cultural Drivers of Opportunity Entrepreneurship (OE)



find the expected plateau and reversal to a positive effect at higher levels. The dominant pattern for assertiveness is negative and not consistent with our hypothesis 6b, although assertiveness did show a positive effect at mid levels of educational development. Figure 3 for individualism shows partial support for hypothesis 6c with a rise in OER for the highest levels of educational development but contrary to hypothesis 6c, individualism fails to drive more OER at lower levels of educational development. The effects for family collectivism generally support hypothesis 6d as family collectivism has its strongest predictors of OER at low and high levels of educational development and has moderate effects at mid levels of educational development.

Models 9–12 tested hypotheses 7a–d, which suggested that the cultural values of performance orientation, assertiveness, individualism, and family collectivism, when combined with a more redistributive economic system, produce lower rates of OER. As seen in Models 9, 10, and 12 and illustrated in Figure 4, the effects for performance orientation, assertiveness, and family collectivism were consistent with hypotheses 7a, b, and d. In the more redistributive economic systems, these cultural values have either negative or reduced effects on OER. Individualism has effects opposite than predicted and again, as with performance orientation, is more consistent with the pattern for family collectivism.

Discussion and Conclusions

We drew on literatures from international entrepreneurship, management, sociology, criminology, and economics to develop and test the IOTE as a theoretical framework for understanding why the combined cultural and institutional contexts of societies lead to different rates of OE. Our study fits into a growing body of recent cross-national research seeking to explain differences in rates of entrepreneurial activity, many of which use the GEM data. These studies show that an array of institutional factors influence rates of entrepreneurship (De Clercq et al., 2011; McMullen et al., 2008) and that cultural and institutional factors moderate individual-level predictors of rates of new business activity (Stenholm et al., 2013). Differing from these and other institutional and cultural research, our study is a theoretically driven examination of the *combinative* effects of cultural and institutional variables on national rates of OE. To our knowledge, this is the first study to examine the interaction effects of an array of cultural and institutional characteristics on national rates of OE.

In addition to studying the interactions between culture and institutions, this theory also led to the exploration of cultural dimensions not considered previously in the cross-national entrepreneurship literature. We used the GLOBE cultural model for its closer fit to our theory and considered variables such as family collectivism and assertiveness that are new to this literature. In the institutional context, IATOE uniquely suggested a cross-national comparison of social stratification rather than a within country focus on minority groups and entrepreneurship. IATOE also calls attention to the effects of a redistributive economy on OE, an issue not treated in the institutional literature in management.

Most institutional studies and nearly all cultural studies investigating cross-national differences in rates of entrepreneurship are cross-sectional (see De Clercq et al., 2011, for an exception). Hofstede (2001) argues that national cultures are relatively stable so our measure of them can be time invariant, but the same might not be true for institutional factors. In perhaps the longest time frame in studying rates of entrepreneurship, our

models allow institutional variables and rates of opportunity entrepreneurship to vary over 10 years and not assume a fixed relationship with a static national context.

We theorized OE activity as a creative and positively deviant adaptation to anomic strain created by cultural values in combination with various institutional factors in societies. The strength of the IATOE approach is that it identifies various societal constellations of cultural and institutional factors in which a nation's potential supply of entrepreneurs are more likely to attend to and exploit entrepreneurial opportunities. Although IATOE is rooted in institutional anomie theory and its application to crime and negative deviance, based on our own theoretical reasoning and recent applications to innovation in organizations (Mainemelis, 2010), we extended and modified the original theory extensively for application to OE.

Consistent with theorizing based on a strict following of IAT, the findings indicate that cultural values related to achievement and materialistic success (i.e., performance orientation) lead to increased rates of entrepreneurship when traditional paths to life's successes are blocked or inhibited. To the degree that performance orientation dominates cultural values, in the context of higher levels of social stratification, less developed educational systems, and less redistributive economies, more of those entrepreneurially predisposed choose OE as an occupational path. The somewhat related cultural value of assertiveness only seems to drive opportunity entrepreneurship in societies lacking social safety nets.

Following a strict interpretation of IATOE as derived from IAT, we theorized that individualism, in the appropriate institutional context, should lead to higher rates of entrepreneurial activity. Similarly, the popular conceptions of the individualist entrepreneur as well as some prior research (George & Zahra, 2002) support this contention. However, there is also evidence (Pinillos & Reyes, 2011) that economic development moderates the relationship between individualism and both OE and necessity entrepreneurship, such that individualism leads to higher rates of entrepreneurial activity in more developed nations, and collectivism has a positive effect in less developed nations. Since we controlled for general economic development, our findings suggest that perhaps it is not economic development *per se* but, rather, better educational systems that encourage higher rates of OE in more individualistic nations; while lower educational development/access encourages higher rates of OE in more collectivist nations. Given the recent debates regarding the Hofstede and GLOBE culture measures (Hofstede, 2010; Taras et al., 2010), it is important to know that our findings for individualism were robust as they replicated findings for the Hofstede measure of individualism.

Based on the idea that there is a "collectivist achievement orientation" (Phalet & Schonpflug, 2001) and that family embeddedness encourages entrepreneurship (Aldrich & Cliff, 2003; Tiessen, 1997), we examined the effects of family collectivism on OE. Family collectivism is a variable heretofore not studied in the cross-national entrepreneurship research. Our findings for family collectivism were uniformly consistent with IATOE. Family collectivism drives more OE in more highly stratified societies and societies with less redistributive economies. When economic success and status achievement are blocked via social stratification or not de-motivated by government security, family collectivism encourages more OE. Higher levels of family collectivism also predict more OE when educational development is low, suggesting the family supports family members seeking entrepreneurial opportunities when access to education is lower and thus blocking achievement via educational attainment. Yet, in societies with the most highly developed educational systems, family collectivism again supports OE, suggesting perhaps that family support allows the more entrepreneurially predisposed to seek returns outside of traditional occupational paths using the skills gained from education.

Our general explanation for the positive effects of family collectivism on OE that are consistent with IATOE and perhaps for the interaction effect of individualism with educational development/access is rooted in evidence suggesting that entrepreneurship is facilitated when entrepreneurs, and particularly those from more collectivist cultures, are embedded in social systems (Kim & Aldrich, 2005; Portes & Shafer, 2007; Sanders & Nee, 1996). Recent research (Stephan & Uhlaner, 2010) and earlier arguments by Tiessen (1997) seem to support this argument. Likewise, our findings also support this contention. When faced with blocked access to traditional achievement mechanisms such as education, an OE occupational choice becomes more attractive if one can find support from one's in-group that possibly mitigate its risk. Interestingly, individualist cultural values and family collectivist cultural values seem to serve as more powerful drivers of OE in countries with better performing educational systems, perhaps because such systems provide the necessary training and skills to encourage breaking from more traditional organization-based occupational careers both with and without family support.

Among the institutional variables considered in this study, the position of the educational system is unique. Education's curvilinear relationship with OE and its nonlinear interactions with the cultural drivers of OE suggest that a society's educational system might simultaneously enhance and mitigate cultural values that support OE. Although we do not have sufficiently fine-grained data to assess this directly, we suspect that cultural drivers of entrepreneurship interact with the nature of educational systems to produce different forms of OE from the more or less productive to the more or technically based.

Limitations and Future Research

As recently as 2010, Bruton et al. (2010) noted the use of multi-country databases as the exception and not the rule in institutional studies of entrepreneurship. The availability of the GEM data has helped cross-national entrepreneurship research overcome this problem at least to some degree (e.g., De Clercq et al., 2011; McMullen et al., 2008; Stenholm et al., 2013). However, such cross-national research has some inherent limitations.

Perhaps the major limitation is that studies using data from GEM or other information on business foundings usually take data from other secondary sources. Such archival data limit the options for construct development. For example, although it is the only measure used in large-sample cross-national research, some speculate that the self-identification of opportunity entrepreneurship may overestimate this choice (Acs, 2006). Archival data on nations also affect sample sizes. Each new data source typically reduces the countries in a sample due to lack of overlap. For example, in studies of national culture, depending on the model of national culture used, it is very difficult to have a country sample size near 50. Without the use of a panel design, sample sizes tend to be small and power low. However, even with panel data, the dominant models of national culture are static limiting considerations of the effects of cultural change on entrepreneurship.

Although our findings largely support IATOE, an all-inclusive, exhaustive treatment of all a society's cultural and institutional components is not possible based on a single theory. As such, we make no claim that IATOE includes all institutional and cultural factors that influence OE, and we identify some possible research extensions below. Rather, it provides a theoretical framework for understanding how a particular array of institutional and cultural characteristics affect national rates of OE.

Future research might extend the IATOE model by considering other social institutions not identified specifically by IAT but perhaps having moderating effects similar to those observed here. Institutions such as religion, rule of law, stability of the polity, and

patterns of labor relations may prove viable candidates. For example, beyond the direct effects (Brouwer, 2002) suggested by Weber's (1930) "protestant ethic" hypothesis, the logic of IATOE would suggest that religion (e.g., state religions, levels of religiosity, etc.) provides an institutional context that moderates cultural effects further inducing OE. Other aspects of the polity besides redistribution, such as a stable or unstable polity, may create or perhaps destroy OE in a country (Aldrich & Wiedenmayer, 1993; Jackson & Deeg, 2008). In societies where political leaders have more discretion, arbitrary enforcement and erratic administration of laws might mute cultural values and inhibit OE activity. Yet, paradoxically, political turmoil might concomitantly raise OE activity as a positively deviant adaptation. Work by Henisz (2000) regarding political hazards provides an institutional perspective on contexts that likely affect OE activity in a country. Labor relations patterns, i.e., the presence of labor unions, shape work, and the meaning of employment in a society (Western, 1998). Strong unionization socializes workers, encourages collective determination of wages, provides security nets and protection (e.g., health insurance), and increases benefits thus diminishing the attractiveness of individual efforts such as OE (Fullagar, McCoy, & Shull, 1992). Following IATOE logic, strong institutionalized unionization would likely suppress the effects of pro-OE cultural values. Finally, cultural/institutional models might also examine necessity entrepreneurship. Some findings (e.g., Acs, 2006) suggest that the ratio of necessity to opportunity entrepreneurship depends on GDP, which we used as control to factor out its effects.

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