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Institutional Environment and Entrepreneurial Cognitions: A Comparative Business Systems Perspective

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In this study, we investigate the relationship between institutional elements of the social environment and entrepreneurial cognitions, which lead to the individual's venture creation decision. Employing a sample of 757 entrepreneurs and non-entrepreneurs from eight countries we examine the extent to which institutions influence venture creation decisions, where entrepreneurial expert scripts act as a mediator. Results show that various institutional elements, such as legal and financial systems, affect venture arrangements and willingness scripts. Venture arrangements scripts, in turn, have the most significant impact on an individual's venture creation decision.

Introduction

The institutional patterns that "order reality and provide meaning to actions" (Thornton & Ocasio, 1999, p. 803) have a profound influence on economic outcomes of a society (Meyer & Rowan, 1991). However to date, entrepreneurship research has not extensively examined the process whereby the institutional environment impacts the venture creation decision (VCD). In this study, we propose and empirically test the extent to which institutions influence VCD, where entrepreneurial expert scripts[1] (Mitchell, Smith, Seawright, & Morse, 2000; Mitchell, Smith, et al., 2002) act as a mediator. In this mediated model, entrepreneurial cognitions and their antecedents are the focal point.

Bagozzi and Fornell (1982) suggest that the conceptual meaning of a construct is obtained through the specification of two links in the antecedents, definitions,

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1. The term "expert script" refers to a highly structured, sequentially ordered understanding of means–ends relationships in a specific field (Glaser, 1984; Leddo & Abelson, 1986). Scripts are defined as knowledge

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consequences chain: first, how the antecedents of the construct connect to the definition of the construct itself; and second, how a given construct connects to the consequences, implications, or results of that construct (p. 25). Entrepreneurial cognition research to date has focused primarily on the second link and has been successful in confirming that there are cognitive differences between entrepreneurs and non-entrepreneurs (that is, the consequences of entrepreneurial cognitions on the VCD), for example, Mitchell et al. (2000). However, the relationships between entrepreneurial cognitions and their antecedents remain relatively underexplored.

A wide range of factors has been proposed as antecedents of entrepreneurial cognitions, including cultural values, social contexts, personal variables, former experience, and gender (Busenitz & Lau, 1996; Gatewood, Shaver, Powers, & Gartner, 2002; Mitchell et al., 2000; Mitchell, Smith, et al., 2002). However, until now, the relationships between entrepreneurial cognitions and their antecedents have only been conceptualized with very general models (for example, Busenitz & Lau; Mitchell et al.), and empirical testing of these relationships has been limited (for example, Gatewood et al.; Mitchell et al., 2000; Mitchell, Smith, et al., 2002). Further, these general models have unduly restricted the range of antecedents; for example, Mitchell et al. (2000) only considered cultural values.

Fortunately, recent advances in the study of institutions, social structuring, and entrepreneurship (for example, Baker, Gedajlovic, & Lubatkin, 2005; Whitley, 1999) suggest that analyzing comparative entrepreneurial process can reveal finer grained connections between institutional antecedents and entrepreneurial cognitions. Herein, we continue this stream of research by empirically examining the role of institutional and societal systems (Scott, 1995) in the development of entrepreneurial cognitions that lead to the VCD (Mitchell et al., 2000; Mitchell, Smith, et al., 2002). Specifically, we investigate how the relationship between the legal, financial, and education systems and new venture creation are mediated by individual-level entrepreneurial cognitions as manifested by expert entrepreneurial scripts. For example, do certain features of the legal system have positive/negative impacts on entrepreneurial cognitions of individuals within the system? Is there any particular type of financial system that is more entrepreneurship-friendly? How does a country's education system influence individuals' cognitive makeup?

By addressing the question of how the institutional environment shapes entrepreneurial cognitions and VCD, we believe that this study contributes not only to theory development in the early stage of entrepreneurial cognitions research, but also to the international entrepreneurship research in general by bringing a broader socioeconomic perspective to the comparative study of entrepreneurship. This paper proceeds as follows: First, we review the literature that relates entrepreneurial scripts and institutional context to the VCD, which form the foundation of the conceptual linkage we investigate. Next, we explore the extent to which various institutional arrangements influence the cognitions of individuals based on the comparative business systems perspective (Whitley, 1999, 2002). We then empirically examine these relationships using a sample of 757 entrepreneurs and non-entrepreneurs in eight countries. Finally, we discuss the results and implications of our study for future research and practice.

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structures or schemas (Lord & Maher, 1991; Walsh, 1995) that contain organized knowledge about an information environment that gives meaning to concepts or stimuli (Fiske & Taylor, 1984). As a result, scripts permit experts to rapidly comprehend expertise-specific information (Schank & Abelson, 1977). Expert information processing theory generally treats the terms "knowledge structure" and "expert script" as synonymous. Please see Mitchell, Mitchell, and Mitchell (2009) for further details.

Literature Review

Entrepreneurial Cognitions

Entrepreneurial cognition research investigates entrepreneurs' ways of thinking and thus, puts the entrepreneur as the research focus (Mitchell et al., 2007). Entrepreneurial cognitions are defined to be "the knowledge structures that people use to make assessments, judgments, or decisions involving opportunity evaluation, venture creation, and growth" (Mitchell, Busenitz, et al., 2002, p. 97). During the last decade, research on entrepreneurial cognition has seen substantial developments in theory and empirical testing. For example, researchers have found that entrepreneurs have knowledge structures that are different from non-entrepreneurs, and that these differences influence the VCD (Baron, 2000; Busenitz & Barney, 1997; Chen, Greene, & Crick, 1998; Keh, Foo, & Lim, 2002; Krueger, 1993; Markman, Balkin, & Baron, 2002; Mitchell et al., 2000; Mitchell, Smith, et al., 2002). However, as previously noted, empirical testing of antecedent-type relationships has been limited, and the relationships between entrepreneurial cognitions and their antecedents remain underdeveloped. In this study, we address this research gap by examining how the macro-level institutional environment shapes individuals' entrepreneurial cognitions and VCD, and in doing so, suggest a combination of concepts from both entrepreneurial cognition research and institutional theory.

Essentially, the entrepreneurial cognition literature relevant to a "fusion" of concepts from institutional theory and entrepreneurial cognition research begins with Shapero and Sokol (1982), who suggested that new venture formation would occur when entrepreneurs thought first about desirability and later, about feasibility. Krueger and Brazeal (1994) then proposed that desirability and feasibility cognitions were actually concurrent—more gestalt-like. This idea, which is consistent with the social cognition concepts of authors such as Fiske and Taylor (1984), has been adopted by some entrepreneurial cognition researchers because it explains how individual behavior is shaped by person–environment interaction. It was on this foundation that Mitchell et al. (2000) built their explanation of how the expert information processing theory-based notion of arrangements, willingness, and ability cognitive scripts influenced the VCD.

Mitchell et al. (2000) argued that lack of venture arrangements scripts such as idea protection, access to a venture network, and resources may preclude expert script "entry," or the decision to create a venture. Venture willingness scripts such as seeking focus, commitment tolerance, and opportunity motivation may reduce the perceived uncertainty, thereby increasing the motivation to make VCDs (Krueger, 1993), which provides a precondition for script doing/enactment (Leddo & Abelson, 1986, p. 121). Finally, venture ability scripts such as ability–opportunity fit, venturing diagnostic ability, and venture situational knowledge may increase the level of self-efficacy in the assessment of person-in-situation (Gist & Mitchell, 1992), thus providing a basis for the enactment of a VCD. Based on a cross-cultural study of entrepreneurs and non-entrepreneurs, Mitchell et al. found that these cognitive scripts explain significant variance in the VCD. Thus, the person-in-venture-creation-situation type of "permeability" in the case of the cognitions–consequence link has been established, which provides a foundation for our investigation of the linkage between institutional situation-and-person antecedents and cognitions.

Institutions and Entrepreneurship

The linkage where institutions precede entrepreneurial cognitions can be conceptualized from the social cognition theory assertion that certain cognitions arise due to a

person's situational context (Fiske & Taylor, 1984). In recent years, it has been argued that the institutional arrangements, that is, macro-level socio-environmental factors comprised of the political, social, and legal ground rules that establish the basis for producing and distributing economic activities (North, 1990), shape such cognitions. For instance, variation in institutional environments creates differences in how technology-focused entrepreneurs (Ahlstrom & Bruton, 2002) and venture capitalists (Ahlstrom & Bruton, 2006; Bruton & Ahlstrom, 2003; Bruton, Fried, & Manigart, 2005; Zacharakis, McMullen, & Shepherd, 2007) operate in different countries and influences the governance of entrepreneurial firms (Steier, 2009). Further, government policy shapes the institutional environment in which entrepreneurial decisions are made and hence, can influence the allocation of entrepreneurial activities (Baumol, 1990; Bowen & De Clercq, 2008; Minniti, 2008).

Thus, it has been argued that the institutional environment can effectively create or destroy entrepreneurship in a country (Aldrich & Wiedenmayer, 1993), which then suggests that we need to study how specific country-level institutional differences contribute differently to levels and types of entrepreneurship (Baumol, 1990; Busenitz, Gomez, & Spencer, 2000). The previously noted suggestion by Baker et al. (2005) that analyzing comparative entrepreneurial process can reveal finer grained connections between institutional antecedents and entrepreneurial cognitions supports such study. Accordingly, McMullen, Bagby, and Palich (2008) investigated the relationship between country-level economic freedom and engagement in entrepreneurial action and found that entrepreneurship is positively related to labor freedom and that opportunity-motivated entrepreneurial activity in particular, is positively associated with property rights. Additionally, Aidis, Estrin, and Mickiewicz (2008), building upon Baumol (1990) and North (1990), suggested that Russia's weak institutional environment (indicated by perceived corruption) helps to explain its relatively low levels of entrepreneurship.

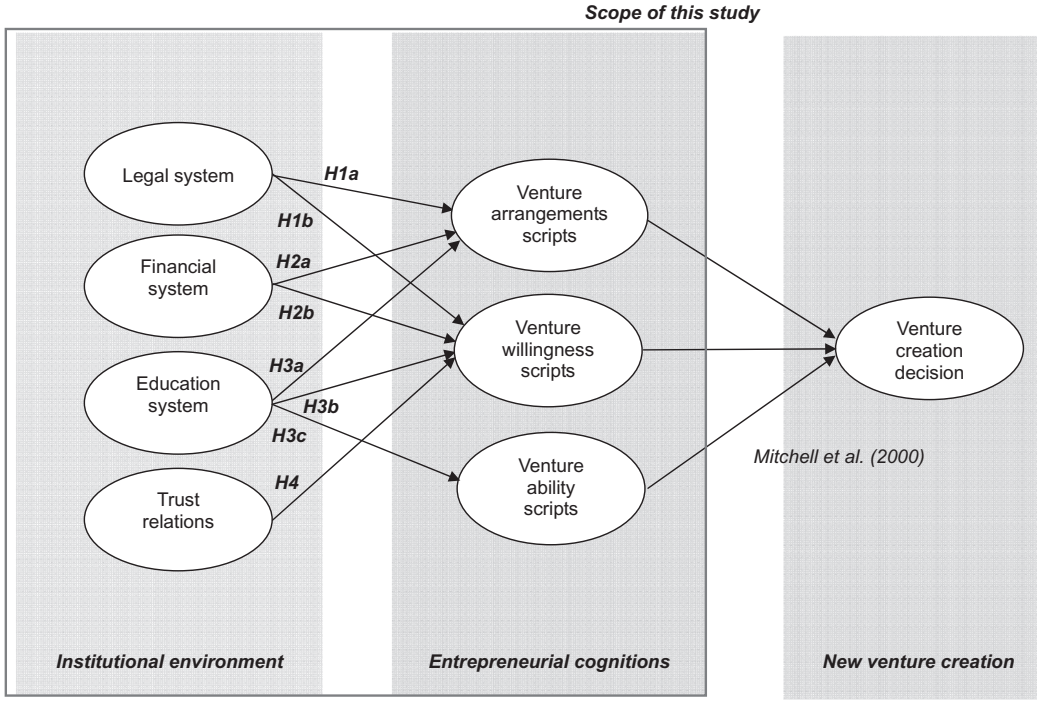
In our theorizing, we have noted that these findings fit within a larger conceptualization of institution-as-antecedent (for example, Whitley, 1999, 2002)—where divergent social structures result from different institutional elements. Whitley (1992) developed this argument suggesting that institutional arrangements shape the structure of markets and firms, differentiating business systems on the basis of institutions that are directly involved in the economic system such as the legal system, the financial system for accessing resources, and the education system. Utilizing this framework, we examine how institutions influence the production of social structures such as new VCDs, where entrepreneurial action scripts mediate the institution–structure relationship as illustrated in Figure 1.

Conceptual Model

As Figure 1 suggests, two sets of relationships are implicated by a conceptual model that situates entrepreneurial cognitions as a mediator in the institutions–VCD relationship. This relationship is consistent with Leddo and Abelson's (1986) study that found that the action-based knowledge structures (scripts, please see footnote 1) of individuals take into account a comprehensive reality. These scripts were found to be made up of information about both the situational context and the sequentially ordered knowledge required for performance within that situation, suggesting that decision making is affected by a configuration of forces including individual cognitions and that individual's institutional context. In this section, we begin by conceptualizing this "fulcrum" set of concepts—entrepreneurial cognitions—and then proceed to develop the logic for hypotheses that

Figure 1

The Conceptual Model



relate the model antecedents (institutions) to this mediator, which ultimately leads to the consequences (VCD) as established by Mitchell et al. (2000).

Entrepreneurial Cognitions: Arrangements, Willingness, and Ability Scripts

In this study, we adopt Mitchell et al.'s (Mitchell et al., 2000; Mitchell, Smith, et al., 2002) framework because it is particularly helpful in the exploration of the antecedents–cognitions link. This framework conceptualizes the VCD as a consequence of the three expert scripts—venture arrangements, willingness, and ability—and we believe that institutional factors will influence these scripts based on the previously noted person-in-situation assumption in social cognition theory (Fiske & Taylor, 1984). *Venture arrangements scripts* are the knowledge structures individuals possess about the arrangements needed to engage in an entrepreneurial activity (for example, contacts, relationships, resources, and assets. These structures include a protectable idea, access to resources, and venture specific skills. *Venture willingness scripts* support the entrepreneur's commitment to venturing and their receptivity to the idea of starting a new venture. They include seeking focus, commitment tolerance, and opportunity motivation. *Venture ability scripts* are the capabilities, skills, knowledge, norms, and attitudes that individuals require to create a venture, such as ability–opportunity fit, venturing diagnostic ability, and venture situational knowledge (Mitchell et al.; Mitchell, Smith, et al.).

According to information processing theory, these three cognitive scripts capture the two critical stages in the success or failure of planned behaviors: entry (venture arrangements scripts) and doing (venture willingness and ability scripts) (Leddo & Abelson, 1986). These script stages are similar to other staged conceptual models of venture creation, such as the intentions-based model (Ajzen, 1991), which first features venture feasibility and then desirability. Also, willingness and ability scripts invoking the venture "doing" stage is consistent with self-efficacy explanations (Bandura, 1977; McGee, Peterson, Mueller, & Sequeira, 2009; Mitchell et al., 2000). Thus, this script-based conceptualization of entrepreneurial cognitions is among those that are more comprehensive.

Institutional Arrangements and Entrepreneurial Cognitions

Institutional context impacts economic behavior (Choi, Raman, Usoltseva, & Lee, 1999; North, 1990; Peng, Sun, Pinkham, & Chen, 2009; Whitley, 1999, 2002), entrepreneurship in general (Baumol, 1990), and entrepreneurial cognitions in particular (Busenitz & Lau, 1996; Mitchell et al., 2000). It is widely accepted that institutions influence economic behaviors within the business system by generating and reproducing certain cognitive assumptions taken for granted by the members of the society (DiMaggio & Powell, 1991; Scott, 1995). Accordingly, we infer that institutional arrangements (that is, features of financial systems and other sociopolitical infrastructures) encourage or discourage entrepreneurship and that this process is mediated by individual cognitive scripts.

This assertion is admittedly cross-level (for example, where country-level variables are suggested to influence variables at the individual level). While this claim is somewhat new, it is not without precedent. A recent investigation of structural similarity across levels (Smith, Mitchell, & Mitchell, 2009) used composition models,[2] where a lower level process was "composed to the higher level by identifying critical higher level parameters, which are higher-level analogues of the lower level parameters, and describing interrelationships among higher level parameters, which are homologous (having the same relative position, value, or structure) to the lower level parameter relationships" (Chan, 1998, p. 241). Herein, we argue the reverse: that higher level processes (that is, business system assumptions) are composed to a lower level (that is, entrepreneurial cognitions), such that relevant comparisons can be made according to the person-in-situation logic previously presented.

To identify the institutional factors that are likely to influence individual entrepreneurial cognitions, we draw upon the comparative business systems perspective (Whitley, 1999, 2002). The comparative business systems perspective assumes that economic relationships and activities are socially constituted and institutionally variable and accordingly, that the ways competitive processes operate, their outcomes, and the nature of the actors engaged in them vary significantly between societal contexts (Whitley, 1999, p. 5). This multiple-facet approach has been advocated because it takes into account a comprehensive set of institutional factors and seeks to explain how and why forms of economic organization diverge in different countries in specific ways (Bowen & De Clercq, 2008; Carney, Gedajlovic, & Yang, 2009; Redding, 2005).

Whitley's (1999) framework identifies four groups of institutional factors that underlie economic decision making and behavior within a country and are therefore likely

2. The composition models refer to the models that specify the functional relationships among phenomena or constructs at different levels of analysis that reference essentially the same content but which are qualitatively different at different levels (Chan, 1998, p. 234; Rousseau, 1985).

antecedents of entrepreneurial cognitions. The framework defines a business system according to: the state (that is, its legal system), its financial system, its system for developing and controlling skills (that is, its education system), and trust and authority relations. These institutions are thought to influence the resources that are key to business success—financial, human, and social capital—and thereby act as the most immediate antecedent of business system-based thinking (Redding, 2005, p. 135).

Legal Systems. The features of legal structures and policies that shape individuals' cognitions include the dominance of the state and its willingness to share risks with private owners and the extent to which markets are formally regulated (Whitley, 1999). Regulatory protection of intellectual property through the "rule of law" can motivate entrepreneurial action (Bowen & De Clercq, 2008; Schumpeter, 1934). Sobel (2008) suggested that creative individuals are more likely to engage in productive market entrepreneurship when institutions provide secure property rights, based on a study of entrepreneurship in 48 U.S. states. McMullen et al.'s (2008) analysis of Global Entrepreneurship Monitor data from 36 countries also indicated that property rights are positively related to opportunity-motivated entrepreneurial activity. In addition, regulatory complexity (for example, excessive administrative formalities and bureaucracy) can shift individuals' preferences and negatively influence entrepreneurial activity (Bowen & De Clercq; Djankov, La Parta, Lopez-de-Silanes, & Schleifer, 2002; Grilo & Thurik, 2005; Klapper, Laeven, & Rajan, 2006). For instance, Capelleras, Mole, Greene, and Storey (2008) found that the highly regulated Spanish economy produces initially larger, but slower growing firms compared with the lightly regulated British economy.

We argue that a legal system with stronger property rights protection and less regulatory complexity (Soto, 2000) positively influences the level of entrepreneurship by shaping the entrepreneurial scripts of individuals within that society because of its entrepreneurial munificence. Information processing theory-based expectations suggest that the nature of the legal system will most directly impact script "entry" (through arrangements scripts) and at least the willingness scripts portion of script "doing." We therefore suggest:

Hypothesis 1a: The degree of entrepreneurial munificence of a country's legal system is positively related to the level of venture *arrangements* scripts.
Hypothesis 1b: The degree of entrepreneurial munificence of a country's legal system is positively related to the level of venture *willingness* scripts.

Financial Systems. The liquidity of financial systems as it influences entrepreneurial thinking tends to vary along a continuum between equity-focused financial systems and bank-based financial systems, which is the process by which capital is made available and priced (Whitley, 1999, p. 49). A given country's financial system is reflected by such indicators as the relative size of its stock market when compared with that of banks, the relative intensity of activity in stock markets compared with the banking sector, and the relative efficiency of stock markets compared with banking sectors (Beck, Demirgüç-Kunt, & Levine, 2000).

The equity-based financial systems typically rely upon large and liquid capital markets, such as stock markets, which mobilize and distribute capital through market processes, whereas bank-based financial systems emphasize banks and long-term credit institutions that allocate capital often through administrative processes targeted to particular sectors and activities (Whitley, 1999). Equity-based financial systems are prevalent in Anglo-Saxon countries such as the United States and the United Kingdom, while bank-based financial systems are typical in continental Europe and Japan (Choi et al.,

1999; Kwok & Tadesse, 2006). It is commonly believed that the higher liquidity levels found in equity-based capitalism favor research and innovation (Holmstrom & Triole, 1993), facilitate mergers and acquisitions (Jensen & Murphy, 1990), and encourage risk management (Levine, 1991). As such, an equity-based financial system is perceived to enhance entrepreneurship and economic growth more than a bank-based financial system (Levine, 2002).

We reason that well-developed networks that link venture capital firms to public stock markets are an integral part of more liquid equity-based systems, which relates positively to venture arrangements scripts. Equity-based system liquidity also enables easier financial harvest, which is likely to be positively related to venture willingness scripts. We therefore expect:

Hypothesis 2a: The degree to which a country's financial system is equity-based (versus bank-based) is positively related to venture *arrangements* scripts.

Hypothesis 2b: The degree to which a country's financial system is equity-based (versus bank-based) is positively related to venture *willingness* scripts.

Education Systems. Education and training systems are integral components of the socioeconomic infrastructure that encourage individuals to be more entrepreneurial and hence, develop higher levels of venture scripts (Vesper, 1996). This system consists of two broad and interrelated sets of institutions: first, the education and training system, and second, the institutions that control the terms on which the owners of skills sell them in labor markets and how those markets are organized (Whitley, 1999).

There are broadly two possible theoretical explanations for the relationship between education systems and entrepreneurial cognitions. First, this relationship can be explained by the resource dependency logic (for example, Pfeffer & Salancik, 1978). New ventures depend on a supply of skilled labor and this particular institution deals with the human resources that are available to privately owned economic actors (Whitley, 1999, p. 47). Thus, it is likely that individuals from a country with higher quality education systems (manifested by the population level of education) will perceive the environment to be more entrepreneurially munificent because they have better access to high-quality human resources (for example, Begley, Tan, & Schoch, 2005), hence the higher level of venture arrangement and willingness scripts. In this vein, Bowen and De Clercq (2008) recently found that institutional arrangements, such as entrepreneurship education, significantly influence society's allocation of entrepreneurial effort.

On the other hand, education may be conducive to the focal individual's venture creation by enhancing his or her own human capital, that is, the knowledge structures related to entrepreneurship–venture arrangements, willingness, and ability scripts. Empirically, it has been found that education influences the decision to be self-employed (Evans & Leighton, 1986; Robinson & Sexton, 1994). Furthermore, researchers have found that the educated are more likely to start businesses (Davidsson & Honig, 2003; Delmar & Davidsson, 2000; Reynolds, 1991). Education also improves the individual's willingness to start a new venture due to the increased self-efficacy (increasing belief in one's own "orchestration capacity") that comes from possessing both specific technical and general social knowledge (for example, Gist & Mitchell, 1992). These findings suggest that education enhances an individual's likelihood for venture creation, yielding higher levels of venture scripts pertaining to both entry (venture arrangements and willingness scripts) and doing (venture ability scripts). Accordingly, we expect:

Hypothesis 3a: A country's average level of education is positively related to venture *arrangements* scripts.

Hypothesis 3b: A country's average level of education is positively related to venture *willingness* scripts.

Hypothesis 3c: A country's average level of education is positively related to venture *ability* scripts.

Trust Relations. Finally, the "background" institutions that influence the reliability of the parties engaged in economic transactions significantly influence the type of economic behavior that takes place within a country (Whitley, 1999). Of particular relevance to entrepreneurship is a country's level of corruption, which is the extent to which public power is misused for private benefit in business transactions (Bowen & De Clercq, 2008; Soto, 2000). Corruption reflects inefficient, weak institutions governing trust relations (Djankov et al., 2002). In a country where corruption prevails, the "rule of man" gradually replaces the "rule of law." The latter is predictable and facilitates entrepreneurial plans and actions; the former undermines the stability and reliability of these institutions (McMullen et al., 2008). It has been argued that there are benefits associated with corruption in economic development and entrepreneurship (Nye, 1967), such as reducing transaction costs through informal networking especially in countries where formal institutions are not well developed (Lee & Oh, 2007). However, it is generally believed that returns from corruption are unlikely to be sustainable in the long run as demonstrated by the Asian economic crisis (Luo, 2002).

Uncertainty induced by corruption may discourage potential entrepreneurs from starting a business (Aidis et al., 2008; Bowen & De Clercq, 2008). Moreover, researchers have found that in former Soviet Union countries, higher levels of corruption discouraged business owners from expanding because of the risk that their firms would be expropriated by corrupt officials (Aidis & Mickiewicz, 2006; Barkhatova, 2000). In an extensive analysis to ascertain why Western economies prosper while others languish, Soto (2000) supported the work of Olson (1996, 1998) that identifies corruption as the key reason for "dead capital" due to the uncertainty that comes from lack of trust. Researchers have also found that higher levels of corruption are associated with lower productivity and lower output growth across countries (Sachs & Warner, 1995). We therefore reason that since corruption has been found to increase uncertainty and distrust in the business environment, they are likely to decrease the willingness of individuals to engage in entrepreneurial activities in the long run. Thus, we expect:

Hypothesis 4: A country's level of corruption is negatively related to venture willingness scripts.

In sum, we suggest that because the institutional environment is critical in fostering entrepreneurial activity (Bowen & De Clercq, 2008; Yeung, 2002), and because business systems have consistently been found to impact entrepreneurship (Ireland, Tihanyi, & Webb, 2008; Reynolds, Storey, & Westhead, 1994; Thomas & Mueller, 2000; Zahra, Ireland, Gutierrez, & Hitt, 2000), the business system-as-antecedent approach is useful for conceptualizing the tests needed to answer our research question.

Methods

Data Gathering

The data on entrepreneurial cognitions and VCDs were collected from a sample of 757 entrepreneurs and non-entrepreneurial business managers from eight

countries. The respondents classified as entrepreneurs had started at least three businesses, one of which ran successfully for at least a year or they were currently running a successful business that had been in operation for over 2 years. Non-entrepreneurial business managers had not started an entrepreneurial venture but had business management experience and/or training. The difficulty in accessing sampling frames for probability samples[3] in social science research (Pedhazur & Schmelkin, 1991) is even more complex in international settings (McDougall & Oviatt, 1997). Thus, we used a purposeful sampling approach recommended for theory development in entrepreneurial cognitions research (Mitchell et al., 2000).

Members of the research team worked in conjunction with local assistants to select, within countries, respondents who reflected a range of business experiences, industries, education, and ages from local entrepreneur and manager populations identified through local chambers of commerce, small business development centers, and contacts provided by local business schools. Then, data collectors, who were natives of the countries, asked the potential respondents to complete the survey instrument. For respondents from non-English speaking countries, the survey instrument was translated, back-translated, and then reconciled by independent bilingual speakers to ensure measurement equivalence/invariance (Vandenberg, 2002). A self-administered, structured survey was personally delivered and retrieved from all of the participants, which resulted in a high response rate of 98%.

The sample varied significantly along both of the key theoretical dimensions of this study: institutional arrangements and the VCD (that is, entrepreneur vs. non-entrepreneur), thus providing a purposeful sample suitable for a comparative business systems study of entrepreneurial cognitions. The sample included 326 (43%) entrepreneurs and 431 (57%) non-entrepreneur business managers. Table 1 shows sample characteristics and descriptive statistics.

Measurement

Institutional Arrangements (Business System). Data on institutions were mainly derived from the World Bank's New Database on Financial Structure and Development (Beck et al., 2000). The entrepreneurial munificence of the legal system (LSYS) was measured by two indicators: property rights (f_prop97: scale from 1–5) and regulation policies related to opening and keeping a business (f_regu97: scale from 1 to 5), both calculated based on the data collected in 1997. A higher score for property rights indicates that private property is better protected; a higher score on regulation means that regulations are straightforward, less burdensome, and applied uniformly to all businesses (La Porta, Lopez-de-Silanes, Shleifer, & Vishny, 1999). The financial system (FSYS) was operationalized with three variables: the relative size of the stock market to that of banks (structure-size), the relative intensity of activity in stock markets vis-à-vis the banking sector (structure-activity), and the relative efficiency of stock markets vis-à-vis the banking sectors (structure-efficiency). These variables were based on data for the period between 1980 and 1995 (Beck et al.; Levine, 2002).

3. A sampling frame, or sample frame, refers to "the set of people that has a chance to be selected" (Fowler, 2002, p. 11). Probability samples refer to the samples where each member or item in the population has an equal or known chance of selection set by the sampling procedure (Fowler, p. 11), for example, random or stratified samples.

Table 1

Sample Characteristics and Descriptive Statistics[†]

	Mean	s.d.	Country							
			USA	CAN	UK	AUS	JPN	GER	FRA	ITA
Sample size (n = 757)			119	139	97	57	53	98	99	95
Legal system (LSYS)										
Property protection	4.74	.44	5.00	5.00	5.00	5.00	5.00	5.00	4.00	4.00
Regulatory complexity	3.66	.47	4.00	4.00	4.00	3.00	4.00	3.00	4.00	3.00
Financial system (FSYS)										
Structure-size	–.62	.67	–.11	–.06	.02	–.09	–.35	–1.53	–1.42	–1.45
Structure-activity	–1.37	.66	–.64	–1.14	–.74	–1.18	–1.00	–1.52	–2.28	–2.52
Structure-efficiency	–5.35	.63	–4.38	–5.59	–4.79	–5.58	–5.24	–5.26	–5.60	–6.54
Education system (ESYS)										
Schooling years	9.12	1.86	12.00	10.34	8.70	10.12	9.20	8.83	6.88	6.16
Trust relations (TREL)										
Corruption	5.22	.65	5.18	6.00	5.46	5.11	5.11	5.36	5.43	3.68
Venture creation (%)	43	49	45	50	51	21	11	45	47	45
Age	40.08	11.81	35	38	43	38	43	45	41	41
Gender (% male)	75	43	78	38	74	70	94	69	67	74
Bureaucratic quality	5.79	.52	6.00	6.00	6.00	6.00	5.89	5.96	6.00	4.43
Common law (% common law)	54	50	1	1	1	1	0	0	0	0
Cultural dimension scores[‡]										
Power distance	44.12	10.94	40	39	35	36	54	35	68	50
Individualism	77.89	12.17	91	80	89	90	46	67	71	76
Masculinity	58.89	18.32	62	52	66	61	95	66	43	70
Uncertainty avoidance	61.95	12.42	46	48	35	51	92	65	86	75

[†] In each cell (except for means and s.d.s), the numbers denote actual coding of country level variables. Venture creation, age, and gender denote country mean value of each variable. Full descriptive statistics are available upon request from the corresponding author.
[‡] Adopted from Hofstede (1991).
s.d., standard deviation

The education system (ESYS) was measured by the average schooling years for the total population aged over 25 in 1990 (Schooling90: Barro & Lee, 1996). Finally, trust and authority relation (TREL) was represented by the level of corruption (corrupt). The data for this variable were originally derived from the International Country Risk Guide (Knack & Keefer, 1995; see La Porta et al., 1999) for the period 1982–1995, with a scale from 0 (high level of corruption) to 10 (low level of corruption). Previous studies have established the validity of these measures (Kwok & Tadesse, 2006; La Porta et al.; Levine, 2002; Tadesse, 2002). The institutional variable scores for the eight countries studied are shown in Table 1.

Cognitive Scripts. We adopted our method for measuring entrepreneurial cognitions constructs–venture arrangements, willingness, and ability scripts from Mitchell et al. (2000), who developed a script-scenario construction model based on expert information processing theory (Glaser, 1984; Leddo & Abelson, 1986). This paired-script cue approach was designed so that expert entrepreneurs would choose script recognition cues,

and inexpert non-entrepreneurs would choose distracter cues in each situation posed.[4] A 48-item self-administered survey questionnaire was pretested and tested for face and construct validity. The validity of these measures has been established through previous studies (Mitchell et al., 2000; Mitchell, Smith, et al., 2002).

These scripts were defined as composite latent variables with formative indicators[5] based on the criteria recommended by Jarvis, MacKenzie, and Podsakoff (2003, p. 203). Each construct is formed of several different dimensions relevant to a VCD (see Mitchell, Smith, et al., 2002). As formative indicators, these dimensions are not necessarily correlated. However, one must assure indicator (first-order construct) level unidimensionality. We conducted an exploratory factor analysis and extracted three factors for each construct. Some of the subconstruct dimensions and items were subsequently dropped. For the *venture arrangements scripts* (ARR), we extracted protectable idea (items 14, 35), resource access (items 18, 20), and venture-specific skills (items 36, 47). For the *venture willingness scripts* (WIL), we extracted seeking focus (items 33, 37, 41), commitment tolerance (items 31, 32), and opportunity motivation (items 7, 12). For the *venture ability scripts* (ABL), we extracted ability–opportunity fit (items 44, 48), venturing diagnostic ability (items 9, 11), and venture situational knowledge (items 16, 29). The items were summed to form first-order constructs (such as protectable idea), which were then used as indicators of latent variables (second-order constructs) in our conceptual model.

Controls. We included two individual-level control variables in our model: age and gender. We controlled for age because people acquire entrepreneurial scripts through various experiences, and age is a proxy of experience (Mitchell et al., 2000). We also controlled for gender difference in entrepreneurial cognitions as suggested in the entrepreneurial cognition literature (Chen et al., 1998; Gatewood et al., 2002). At the macro level, we controlled for the general quality of the bureaucracy because the quality of a system, rather than qualitative differences among different systems, might be a more important factor when it comes to entrepreneurially munificent settings. The data for this variable (scaled from 0–10) were originally derived from the International Country Risk Guide (Beck et al., 2000). A high score indicates that the country demonstrates autonomy from political pressures and possesses the strength and expertise to govern without drastic changes in policy or interruptions to government services. A high score also means that the country has an established mechanism for recruiting and training. We also included a common law dummy (1 for common law origin and 0 for civil law origin) to control for the general legal environment. We included a path from the common law dummy to the financial systems construct based on the thesis that the financial system may be based on the legal system. For instance, common law countries generally tend to deploy equity-based financial systems (Kwok & Tadesse, 2006).

In addition, we controlled for country-level cultural values. This study extended recent work by Kwok and Tadesse (2006), which examined the relationship between financial system and culture (more specifically, uncertainty avoidance), and empirically

4. The respondents were asked to choose between paired options, for example, "when investing in a new venture, I think it is worse to: a) wait too long, and miss a great opportunity; or b) plunge in without enough information to know the real risks" (opportunity motivation). See Mitchell et al. (2000) for more information about the questionnaire.

5. In contrast to the reflective model, the composite latent variable model does not assume that the measures are all caused by a single underlying construct. Instead, the measures (indicators) all have an impact on (or cause) a single construct, and these indicators are referred to as causal or formative indicators (Jarvis et al., 2003, p. 201).

incorporate Redding's (2005) contention that culture underlies institutions by including paths between cultural values and institutional variables. We also controlled for the influence of cultural values on cognitive scripts, based on the extant literature on entrepreneurial cognitions (Busenitz & Lau, 1996; George & Zahra, 2002, Mitchell et al., 2000; Mitchell, Smith, et al., 2002). Data on cultural values were adopted from Hofstede (1991) as shown in Table 1. Finally, we included the VCD as our ultimate dependent latent variable to control for the findings from a previous study (Mitchell, Smith, et al.). By doing so, we investigated the influence of institutions on VCD where entrepreneurial scripts act as a mediator. VCD was a single-item construct with a dummy indicator. Entrepreneurs were assumed to have made a VCD (coded 1; 0 otherwise) when the respondents reported that they had started three or more businesses, at least one of which is a profitable, ongoing entity, or started at least one business that has been in existence for at least 2 years (Mitchell, Smith, et al.).

Analysis

We used a partial least squares approach (PLS-Graph Version 3.0, developed by Wynne W. Chin) to analyze the data collected. We believe that the PLS provides several advantages over other methodologies for this particular study.[6] First, PLS is a structural equation modeling tool that allows us to simultaneously analyze multiple criterion and predictor constructs and analyze unobservable theoretical variables (Barclay, Higgins, & Thompson, 1995). Second, PLS accommodates constructs with formative indicators, avoiding the various statistical issues associated with covariance structure analysis tools such as LISREL (Diamantopoulos & Winklhofer, 2001; MacCallum & Browne, 1993). Third, PLS provides a powerful validity assessment tool that takes account of random and systematic measurement errors (Fornell & Larcker, 1981). Fourth, PLS is known for providing robust results, even in the presence of multicollinearity within blocks of manifest and between latent variables (Naik & Tsai, 2000). PLS is recommended for predictive models (Barclay et al.) and is particularly suitable for conducting studies in the early stages of theory development and for testing comprehensive structural models (Johansson & Yip, 1994).

Results

Our structural model (see Figure 2) shows that institutional arrangements, legal, and financial systems in particular, significantly affect venture arrangements and willingness scripts, which in turn, affect the VCD. Venture arrangements scripts have the most significant impact.

The Measurement Model

The state (legal systems) and financial systems are specified as constructs with reflective indicators. These constructs demonstrated reasonable levels of internal consistency (.75 and .94, respectively), convergent validity (average variance extracted of .60

6. For example, we acknowledge that our multilevel empirical model is built on an implicit assumption that institutional context homogenously influences individual-level entrepreneurial cognitions and venture creation decisions and hence, might be subject to potential biases from ecological fallacy. However, our data and structural model were not well suited to a multilevel analytical tool such as hierarchical linear modeling.

Figure 2

Results of PLS Model Estimation

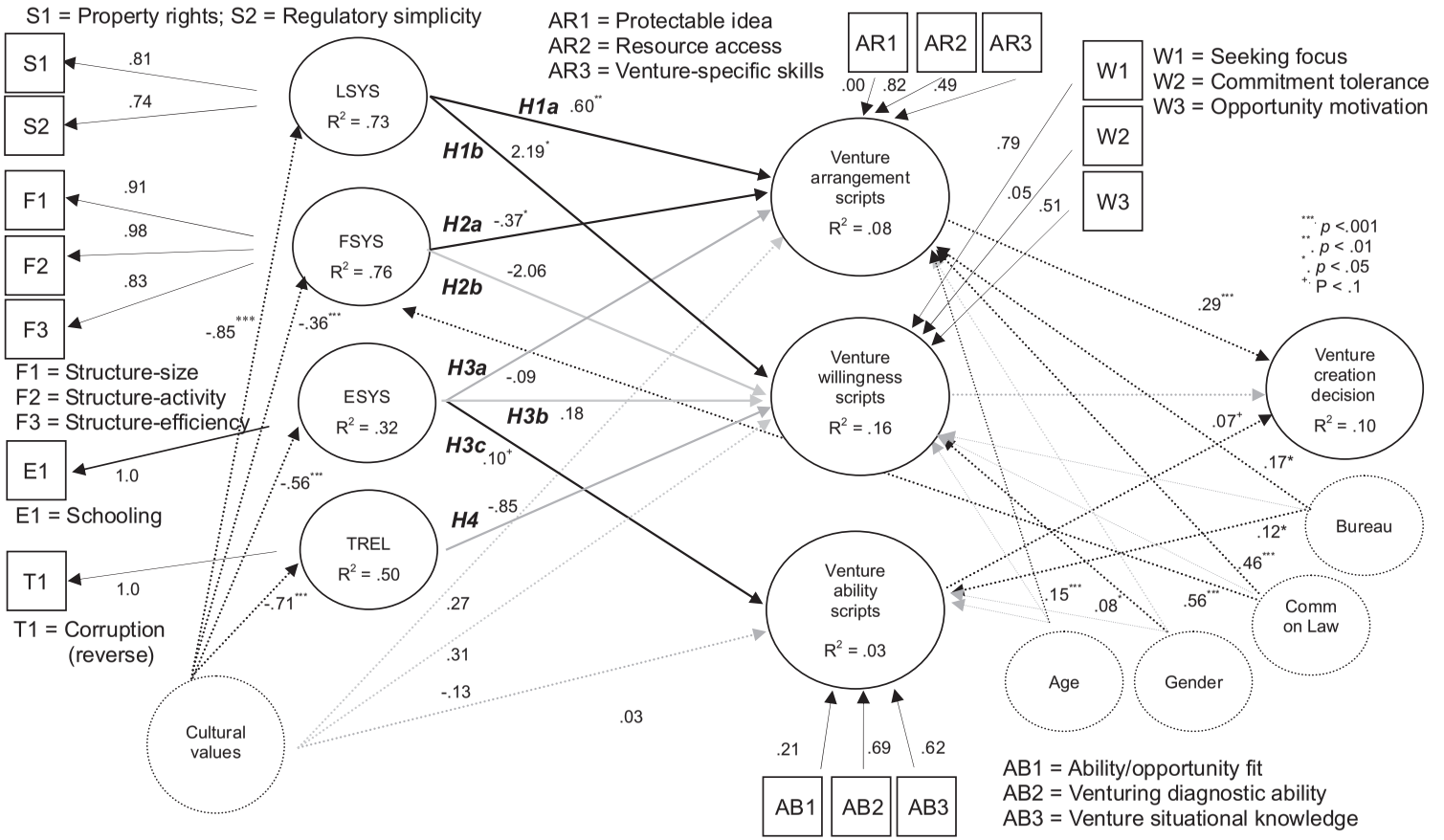


Table 2

PLS Analysis Results: the Measurement Model[†]

	No. items	Internal consistency[‡]	Correlation of constructs						
			LSYS	FSYS	ESYS	TREL	ARR	WIL	ABL
Legal system	2	.75	**.77**						
Financial system	3	.94	.92**	**.91**					
Education system	1	—	.79**	.86**	—				
Trust relations	1	—	.76**	.56**	.53**	—			
Arrangements scripts	3	.57	.15**	.16**	.14**	.09*	**.61**		
Willingness scripts	3	.59	.14**	.06	.13**	.06	.20**	**.62**	
Ability scripts	3	.57	.07*	.06	.09*	.06	.20**	.18**	**.60**

* $p < .05$; ** $p < .01$.

[†] Number of items, internal consistency, and correlation of constructs (hypothesized model).

[‡] $$\text{Internal Consistency} = \frac{(\Sigma\lambda_{yi})^2}{(\Sigma\lambda_{yi})^2 + \Sigma\text{Var}(\varepsilon_i)}$$

where $\text{Var}(\varepsilon_i) = 1 - \lambda_{yi}^2$

[§] Diagonal elements in the "correlation of constructs" matrix are the square roots of average variance extracted $\left(\text{AVE} = \frac{\Sigma\lambda_{yi}^2}{\Sigma\lambda_{yi}^2 + \Sigma\text{Var}(\varepsilon_i)}\right)$. For adequate discriminant validity, diagonal elements should be greater than corresponding off-diagonal elements (Barclay et al., 1995).

LSYS, legal system; FSYS, financial system; ESYS, education system; TREL, trust relations; ARR, arrangements scripts; WIL, willingness scripts; ABL, ability scripts.

and .83, respectively), and discriminant validity based on Fornell and Larcker's (1981) guidelines as shown in Table 2.

As previously noted, indicators for cognitive scripts are specified as formative (see Figure 2 for individual weights). Measurement issues, such as reliability, take on a different meaning with formative constructs (Johansson & Yip, 1994), and it can be misleading to evaluate the measurement model on conventional criteria (Bollen & Lennox, 1991). Formative indicators are independent components of a construct so they might not be highly correlated, which is to say they might not load together. Cronbach's alpha is not an appropriate assessment of reliability at the item level because we cannot assume unidimensionallity of constructs (Mitchell et al., 2000). However, item weights can be transformed into loadings, which are then used to interpret the results and calculate construct-level reliabilities (Barclay et al., 1995). We calculated internal consistency, convergent validity, and discriminant validity for our constructs using Fornell and Larcker's (1981) guidelines where applicable (See Table 2).

The internal consistency values for the cognitive scripts (ranging from .57 to .59) do not completely satisfy the reliability benchmark of .7 (Barclay et al., 1995). However, the values are still reasonable considering the multidimensionality of these constructs. Meanwhile, it is noteworthy that these constructs have discriminant validity. Every construct shared more variance with its indicators than it shared with other constructs in the model, and no item loaded more highly on another construct than it did on the construct it measures (Barclay et al.).

The Structural Model

PLS provides jackknifed statistics and bootstrap resampling procedures for examining the significance of paths among constructs (Barclay et al., 1995). The results are generally robust, and the approach has become standard practice (Johansson & Yip, 1994). Figure 2 and Table 3 show path coefficients and their significance levels along with the results of hypotheses testing.

Among the four institutional factors that constitute a business system, the legal (LSYS) and financial (FSYS) systems were found to significantly influence venture arrangements and willingness scripts. Specifically, our hypotheses that the degree of entrepreneurial munificence of a legal system is positively associated with the individual-level venture arrangement scripts (H1a: path coefficient = .90; $p < .01$) and venture willingness scripts (H1b: path coefficient = 2.19; $p < .05$) were supported. The significant path between FSYS and venture arrangements scripts (path coefficient = –.37; $p < .05$) suggests that the degree to which a country's financial system is market-based (vis-à-vis bank-based) is associated with a lower level of individuals' venture arrangements scripts, which is in fact contrary to our hypothesized relationship (H2a). Our results did not support the hypothesis that equity-based financial systems (compared with bank-based financial systems) are related to higher level of venture willingness scripts (H2b).

We hypothesized that a country's education system (ESYS) may affect various aspects of entrepreneurial cognitions (H3a, H3b, and H3c). However, the paths between the ESYS and venturing scripts were not statistically significant over and above the effects of the other institutional factors in our model, except for the path between ESYS and venture ability scripts, which was marginally significant (path coefficient = .10; $p < .1$), thus supporting only Hypothesis 3c. Finally, we did not find support for our hypothesis

Table 3

PLS Analysis Results: the Structural Model[†]

Paths hypotheses (supported hypotheses in bold)		Standardized path coefficient—direct effect (std error)	*t*-value for path	Indirect effect	Total effect[‡]
H1a	LSYS→Arrangements scripts	.60 (.20)	2.96**		.60
H1b	→Willingness scripts	2.19 (1.08)	2.03*		2.19
	→Venture creation			.19	.19
H2a	FSYS→Arrangements scripts	–.37 (.17)	2.17*		–.37
H2b	→Willingness scripts	–2.06 (1.53)	1.35		–2.06
	→Venture creation			–.17	–.17
H3a	ESYS→Arrangements scripts	–.09 (.08)	1.06		–.09
H3b	→Willingness scripts	.18 (.12)	1.49		.18
H3c	→Ability scripts	.10 (.06)	1.77+		.10
	→Venture creation			–.01	–.01
H4	TREL→Willingness scripts	–.85 (1.05)	.81		–.85
	→Venture creation			–.03	–.03

+ $p < .1$. * $p < .05$; ** $p < .01$; *** $p < .001$.
[†] Control variables were not included in this table.
[‡] Total effect = direct effect + indirect effect.

that there may be negative relationships between the level of corruption (TREL) and venture willingness scripts (H4) despite previous contentions that unfair intervention by economic actors can create uncertainty that may discourage entrepreneurial activities (Baumol, 1990; Bowen & De Clercq, 2008). Our results did show a positive correlation between trust relationships and venture willingness scripts, but this relationship was not statistically significant.

PLS also enables us to calculate the direct and indirect effects (and hence, total effect) of each independent latent variable on endogenous constructs (see Table 3). Among institutional variables, LSYS had the most substantial impact on venture arrangements scripts (total effect = .60) and venture willingness scripts (total effect = 2.19). ESYS was the only institutional variable that was hypothesized to be connected to venture ability scripts (total effect = .06), although the path was not statistically significant. The R^2 values for the endogenous constructs indicate the predictive power of a model (Barclay et al., 1995). Our model explains 16% of the variance in venture willingness scripts and 8% of variance in venture arrangements scripts, which is substantial considering the complex nature of an individual's cognitive makeup. On the other hand, only 3% of the variance in venture ability scripts was explained by institutional factors and our control variables.

In sum, we established that different aspects of institutional environments affect different aspects of entrepreneurial cognitions. Our results indicated that features of legal systems, such as property rights protection and regulatory complexity, significantly impact venture arrangements and willingness scripts. The type of financial system significantly influenced the individual's level of venture arrangements scripts.

Discussion

Our findings and their implications help to further develop the theory of entrepreneurial cognitions. We were able to holistically examine relationships between cognitive scripts and various institutional arrangements in the context of a VCD. More specifically, our results indicate that individuals in countries with more property rights protection and less complex regulatory regimes demonstrated higher levels of venture arrangements and willingness scripts. Strong property rights protection provides isolating mechanisms for entrepreneurial innovation and value creation (protectable idea–venture arrangements scripts) and motivates entrepreneurial action (opportunity motivation–venture willingness scripts). On the other hand, the extant literature has documented that regulatory complexity discourages entrepreneurship (Grilo & Thurik, 2005). Our findings add to this line of thought by demonstrating that regulatory complexity significantly influences the level of individuals' entrepreneurial cognition within the country, which in turn, influences their VCD.

As previously noted, the significantly negative relationship between financial system (FSYS) and venture arrangements scripts is contrary to established theory and conventional wisdom, which suggests that Anglo-Saxon capitalism, symbolized by equity-based financial systems, emphasizes the individual, champions free markets, supports major innovations and entrepreneurship, and integrates venture capitalists into well-developed, independent financial markets (Choi et al., 1999). It has been argued that entrepreneurs in this type of business environment have access to independent financial markets and various types of risk capital (Bowen & De Clercq, 2008; Sarasvathy, 2004) and may be able to source superior resources and develop better venture-specific scripts, such as fund-raising skills.

On the other hand, our findings suggest that the conventional wisdom that equity-based financial systems are more entrepreneurial than bank-based financial systems might in fact be attributable to differences in cultural values, such as individualism, instead of to the way capital is priced and distributed. For example, equity-based economies (Anglo-Saxon capitalism) tend to be more individualistic, hence a higher score of individualism. This contradictory finding makes sense, given that only a limited number of entrepreneurs actually turn to independent financial markets, such as business angels and venture capitalists, for their start-up capital, even though high growth spurred by various types of risk capital has been the epitome of successful entrepreneurial ventures. Interestingly, the type of financial capital available (that is, equity-based or bank-based) did not significantly impact venture willingness scripts. This nonsignificant finding, along with our result for financial system and venture arrangements scripts, calls for further research on the relationship between the availability of various types of financial capital and entrepreneurial motivation.

The relationships between education system (ESYS) and venturing scripts were not significant, except for the marginally significant relationship between ESYS and venture ability scripts. It could be that entrepreneurship-specific education (Bowen & De Clercq, 2008) is more relevant to entrepreneurial cognition than the general level of education in the population. However, our data set did not allow us to investigate alternative explanations. We believe that further research on the link between education system and entrepreneurial cognitions is warranted, given that education system was the only factor we hypothesized to influence venture ability scripts. One possible explanation for our nonfinding on trust relationships (TREL) and venture willingness scripts is that trust relations matter more in venture management than in the VCD. For example, Whitley (1999, p. 51) argued that trust relations structure exchange relationships between business partners and between employers and employees, thereby creating differences in the way firms are governed and interact.

Finally, our control variables are worth a brief discussion. First, significant age differences in venture arrangements scripts (path coefficient = .15, $p < .001$) are consistent with theory. However, it was interesting to find a nonsignificant relationship between age and venture willingness and ability scripts. This result may be because creativity and innovativeness decline as experience is gained at the same time as the entrepreneur's self-efficacy and information-processing capacity increases (Reuber & Fischer, 1999). Second, it was not surprising to find some gender differences in venture scripts. For example, Chen et al. (1998) reported that females showed lower self-efficacy for entrepreneurship; Gatewood et al. (2002) found generally higher expectancies in male respondents than female respondents. We found gender differences in willingness scripts (path coefficient = .08, $p < .05$), but we did not find significant gender differences in venture arrangements and ability scripts. This may lead to interesting avenues of future gender-based entrepreneurial cognition research.

The paths between the cultural values and all the components of business system were highly significant. Thus, our result supports Redding's (2005) contention that culture underlies institutions and confirms the validity of explanations that financial systems are affected by national culture as well as legal systems (Kwok & Tadesse, 2006). We believe that further specifics of relationships between culture and institutions warrants future scholarly attention. It is also noteworthy that 10% of the variance in VCD ($R^2 = .10$) was explained by venture arrangements, ability, and willingness scripts. Our results support the argument that entrepreneurial cognitions can explain the VCD (Baron, 1998; Busenitz & Lau, 1996; Mitchell et al., 2000; Simon, Houghton, & Aquino, 1999) and confirm the explanatory power and viability of research based on cognitive scripts.

Our findings largely confirm Mitchell et al.'s (2000) previous study that found significant relationships between venture arrangement and ability scripts and VCD. Based on our findings, we conclude that institutional context significantly influences the VCD through cognitive scripts. Given that many aspects of a business system are determined by government policy, and hence, can be manipulated, this conclusion implies that the government has an important role in developing an entrepreneurially munificent institutional environment. Specifically, our results indicate that governments can encourage new venture creation by adopting a legal system with stronger property right protection and less regulatory complexity and providing an easier access to debt financing through the banking system.

Limitations and Future Research Directions

This article is one of the first comparative business systems studies in international entrepreneurship. As such, it is not without some limitations. First, this study took into account the multidimensionality of the business systems construct, but the measurement scheme relied upon a previously compiled data set. Some of our measures have been extensively researched and are well established, for instance, financial systems (Beck et al., 2000; Levine, 2002). However, other variables, such as education (Barro & Lee, 1996) and corruption (La Porta et al., 1999) have mostly been used as control variables in previous studies, rather than as measures for theoretical constructs within a comparative business systems framework. Future studies will be greatly facilitated if we can develop a more reliable and theoretically grounded measurement scheme for all the components of comparative business systems framework. We believe that these are the areas where our study could greatly benefit from collaboration with the international business research community.

Finally, our data set does not provide a basis for examining fine-grained causal relationships. This is despite the fact that our structural model implies causal relationships among constructs, and our data were compiled so that they reflected the chronological order of hypothesized relationships. For instance, our institutional variables are based on data covering a period between 1980 and 1995 (except legal systems measures that are based on 1997 data), while our dependant variables were collected in the late 1990s. Further longitudinal inquiry is needed to establish the causality and to reveal the process and mechanisms through which institutional environments affect entrepreneurial cognitions and ultimately, venture creation.

Our study suggests several possibilities for future research. Traditionally, international comparative entrepreneurship research has relied, almost exclusively, on two aspects: cross-cultural comparisons (for example, Mitchell et al., 2000; Mitchell, Smith, et al., 2002; Shane, 1993; Thomas & Mueller, 2000) and between-country differences (for example, Busenitz et al., 2000; Dodd & Patra, 2002). We hope that a comparative business systems approach (Whitley, 1999, 2002) based on socioeconomics will bring a broader perspective to the study of comparative international entrepreneurship. This is of great importance because as we have illustrated, culture is not the only socioenvironmental factor that influences entrepreneurs. Business systems are an alternative way of investigating various contextual influences and a meaningful way of interpreting data. Moreover, this approach is particularly relevant given its direct implications for economic policy. We believe that our findings add to Bowen and De Clercq's (2008) recent work to demonstrate the viability and potential of a comparative business systems approach in our field. Along with other scholars (Baker et al., 2005; Redding, 2005), we call for more research in this direction to reveal the specificities of these relationships.

We believe that our model should be further empirically examined using a larger sample including emerging markets in Latin America (for example, Mexico and Chile), East Asia (for example, South Korea and Taiwan), and Eastern Europe (for example, the Czech Republic and Hungary). This is a good direction for future research given the institutional reforms these countries have recently undergone and the eclectic approaches they have taken to encourage entrepreneurship. Future research may also look into other types of institutions such as political and religious institutions that can also affect individual-level entrepreneurial cognitions. In addition, researchers can look into the coevolving nature of various types of institutions, for example, interactions between legal and financial systems, and their impact on entrepreneurship.[7]

We also advocate more exploratory research on the relationships between entrepreneurial cognitions and their antecedents. In our model, institutional arrangements, along with cultural values, explained only a portion of variances among the three cognitive scripts. The question of "when, how, and why these cognitive scripts are formed and developed" remains to be answered, preferably through longitudinal investigations. In the end, as one of the prominent scholars in the field has put it, entrepreneurial cognition research is on the rise today because of a huge void waiting to be filled.

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