

**The influence of socio-cultural environments on the performance of nascent entrepreneurs: Community culture, motivation, self efficacy and start-up success.**

Dr. Christian Hopp\*

Department of Business Administration  
Chair for International Personnel Management

University of Vienna  
A-1210 Vienna, Austria  
Tel: +43-1-4277-38166

[christian.hopp@univie.ac.at](mailto:christian.hopp@univie.ac.at)

Dr. Ute Stephan

Institute of Work Psychology (IWP) &  
Centre for Regional Economic and Enterprise Development (CREED)

University of Sheffield Management School  
Mushroom Lane, Sheffield, S10 2TN, United Kingdom  
+44 (0)114.222 32 86  
u.stephan@sheffield.ac.uk

\*Both authors contributed equally to this manuscript and are listed in alphabetical order.

**Acknowledgements:**

We thank Ian Macdonald and Tomasz Mickiewicz for valuable comments. All errors remain our own.

**This is a pre-print version of the manuscript for personal use. Please see**

**<http://dx.doi.org/10.1080/08985626.2012.742326> for the final version.**

Full citation:

Christian Hopp & Ute Stephan 2012. The influence of socio-cultural environments on the performance of nascent entrepreneurs: Community culture, motivation, self efficacy and start-up success. *Entrepreneurship & Regional Development*, 24:9-10, 917-945

**The influence of socio-cultural environments on the performance of nascent entrepreneurs: Community culture, motivation, self efficacy and start-up success.**

**Abstract**

The importance of informal institutions and in particular culture for entrepreneurship is a subject of ongoing interest. Past research has mostly concentrated on cross-national comparisons, cultural values, and the direct effects of culture on entrepreneurial behavior, but in the main found inconsistent results. The present research adds a fresh perspective to this research stream by turning attention to community-level culture and cultural norms. We hypothesize indirect effects of cultural norms on venture emergence. Specifically that community-level cultural norms (performance-based culture and socially-supportive institutional norms) impact important supply-side variables (entrepreneurial self-efficacy and entrepreneurial motivation) which in turn influence nascent entrepreneurs' success in creating operational ventures (venture emergence). We test our predictions on a unique longitudinal data set tracking nascent entrepreneurs venture creation efforts over a 5 year time span and find evidence supporting them. Our research contributes to a more fine-grained understanding of how culture, in particular perceptions of community cultural norms, influences venture emergence. Based on these findings we discuss how venture creation efforts can be supported. Our research highlights the embeddedness of entrepreneurial behavior and its immediate antecedent beliefs in the local, community context.

**Keywords:** Culture, cultural norms, PSED II, entrepreneurial process, self-efficacy, motivation, person-culture fit, endogeneity

# **The influence of socio-cultural environments on the performance of nascent entrepreneurs – an instrumental variable approach**

## **1. Introduction**

Entrepreneurship is important for national economies as it contributes to job creation, productivity and economic growth (Parker, 2009; Van Praag and Versloot, 2007). Our understanding of individual factors enabling and hindering entrepreneurship has significantly increased, however, it is only relatively recently that researchers have addressed the question of how embedded entrepreneurial behavior is in national institutions. In particular, cross-national research has yielded valuable insights into formal institutions influencing entrepreneurial behavior (e.g., Aidis, Estrin and Mickiewicz 2010; Bowen and DeClercq, 2008; Djankov, La Porta, Lopez-de-Silanes and Shleifer 2002; Levie and Autio, 2008; Van Stel, Storey and Thurik, 2007). By contrast, little research has addressed the role of informal institutions, including culture. This is surprising in light of how important to the shaping of economic behavior informal institutions are considered to be by different disciplinary approaches. This includes disciplines such as institutional economics, institutional sociology, international business and cross-cultural psychology (e.g., Hayton, George and Zahra 2002; North, 2005; Stephan and Uhlaner 2010; Thornton, Ribeiro-Soriano and Urbano 2011; Uhlaner and Thurik 2007).

The present research regards entrepreneurship as an economic behavior embedded in an institutional context and contributes to our understanding of the mechanisms by which informal institutions – in particular the perception of socio-cultural norms – impact the business creation process. We argue that the impact of socio-cultural norms on entrepreneurial start-up success may be mostly indirect through supply-side variables. In particular, we suggest that culture may impact on important individual beliefs, which in turn determine whether or not nascent entrepreneurs succeed in creating operational ventures. We focus on

cultures influence on two key individual beliefs: entrepreneurs' motivation to work hard to create an operational venture (start-up motivation) and their confidence that they have the skills required to create an operational venture (entrepreneurial self-efficacy). We draw on the person-culture fit perspective (Tung, Walls and Frese 2007) to suggest that the perceived cultural context impacts which nascent entrepreneurs persevere and which ones select out of the start-up process.

In particular, we propose that the perception of performance-based socio-cultural norms and the perception of socially supportive institutions (state and local government, financiers and community groups) independently impact key beliefs and both subsequently relate positively to nascent entrepreneurs' success in creating operational businesses. (Hereafter we refer to the successful creation of an operational business as venture emergence.) It is likely that cultural norms in a community lead to endogenous matching such that those entrepreneurs who better fit into the cultural context are more likely to succeed. In particular, strongly motivated and highly self-efficacious entrepreneurs will thrive in performance-based socio-cultural environments. Additionally, a socially-supportive institutional environment enables nascent entrepreneurs to access important resources to create their business, which has a positive motivating effect and also strengthens nascent entrepreneurs' self-efficacy, such that they will be able to succeed in their venture creation efforts.

Our research also provides a fresh perspective on the role that informal institutions play in entrepreneurship by highlighting the importance of the community context. Community has been variously defined (Rattan and Welter, 2011). We adopt a common geographic definition of a community and define the community as a proximal spatial area which is smaller than a state or county. A community captures an area such as a small town, a village, a collection of small villages, or a greater neighborhood within a larger city (see for instance Kilkenny et al., 1999 for a similar definition). This concentration on a community perspective can usefully complement past research, which has focused on the national context (e.g. Stephan and

Uhlaner 2010). Compared to national culture, community-level cultural norms reflect a more proximal context within which entrepreneurial action takes place. Community culture is both influenced by national culture and also distinct from it. Such a perspective is in line with research highlighting within-nation, regional heterogeneity in culture, entrepreneurial attitudes and behavior (Davidsson, 1995; García-Cabrera and Garcia-Soto 2009; also Tung, 2008). It is also consistent with the broader view that sub-national units (e.g., regions, organizations) have distinctive cultures that are nested within broader national cultures (House, Hanges, Javidan, Dorfman and Gupta, 2004; Leung, Bhagat, Buchan, Erez and Gibson, 2005). The purpose of the present research is it to suggest that community-level cultural norms are a useful concept due to the local nature of entrepreneurial activity (see below).

We test our proposition using an instrumental variable approach on data from the Panel Study of Entrepreneurial Dynamics II (PSED). This is a 5-year longitudinal dataset which follows a population-representative sample of nascent entrepreneurs, i.e. entrepreneurs who are trying to start a business. In using this representative data set of nascent entrepreneurs our research overcomes sample selection and survivor biases associated with using convenience samples of operating businesses. In contrast to cross-sectional designs, the longitudinal nature of the data set allows us to draw causal conclusions with regard to influences on venture emergence<sup>1</sup>.

Our study makes several contributions. First it supplements the literature on the institutional embeddedness of the entrepreneurial process and particularly the literature on informal institutions (e.g. Thornton, Ribeiro-Soriano and Urbano 2011; Stephan and Uhlaner, 2010) by adding the focus on community-level cultural norms. Second, past research on culture and entrepreneurship has concentrated on establishing a direct effect of culture on the

---

<sup>1</sup> Venture emergence is our dependent variable. A venture is said to have emerged when the business that the nascent entrepreneur tried to create generates a positive cash flow and the entrepreneur deems the business to be an operating venture.

level of entrepreneurship (e.g., Hayton et al., 2002; Stephan and Uhlaner, 2010; Uhlaner and Thurik, 2007; Wennekers, Thurik, Van Stel, and Noorderhaven, 2007). Our research investigates whether the important effects of culture on venture emergence are indirect, mediated though their impact on key individual beliefs (start-up motivation and entrepreneurial self-efficacy). In this way, our research contributes to a better understanding of contextual antecedents of start-up motivation and entrepreneurial self-efficacy. Past research demonstrates important consequences of these beliefs for entrepreneurial outcomes (venture emergence, venture growth, venture success, e.g., Baum and Locke, 2004; Cassar and Friedman, 2009; Townsend, Busenitz, and Arthurs, 2010; Rauch and Frese, 2007), yet, few studies investigate their antecedents.

## **2. Theory and hypotheses**

### ***2.1 Definition of entrepreneurship***

We adopt an occupational definition of entrepreneurs as individuals working for their own account and risk (e.g., Hebert and Link, 1982). We also share the view of entrepreneurship as a process. That is, business creation is a process taking place over a more or less extended period of time (e.g. Baron, 2007; Reynolds et al. 2005). One can differentiate an opportunity recognition phase, in which the venture idea is conceived, from an opportunity exploitation phase in which the idea is implemented and a venture is created (e.g., Shane and Venkataraman, 2000). However, the idea might still change during the implementation phase, shaped by opportunities and constraints the entrepreneur comes across (e.g. Sarasvathy 2001). The focus of our contribution is very much on this implementation, or nascent, phase. This is the period starting *after* an individual has decided to become an entrepreneur and ending with either the successful creation of an operational business or the disbanding of the venture creation efforts.

## ***2.2. Institutions and socio-cultural norms.***

Institutions can be defined as the “humanly devised constraints that structure political, economic and social interaction.” North (1991: 97). Institutions can be formal such as property rights, but they can also be informal such as codes of conduct, beliefs, values and norms (also North, 2005). We specifically focus on culture as an informal institution. Culture can be defined as a cultural group's characteristic way of perceiving its social environment (Triandis, 1996). Two measures of culture currently seem to dominate cross-cultural research: cultural values and cultural practices or norms. Contrary to popular belief, this distinction is important as cultural values and norms are found to be only weakly or even negatively related to each other (Fischer, 2006; Javidan, House, Dorfman, Hanges and Sully De Luque, 2006).

Past research on culture and entrepreneurship is dominated by the values perspective which has produced rather inconsistent findings. Some studies report that entrepreneurship rates are positively related to individualism, low power distance and low uncertainty avoidance, while other research finds the opposite pattern (see Hayton et al., 2002 for a review as well as Bowen and DeClercq, 2008; Hofstede, Noorderhaven, Thurik, Uhlaner Wennekers, and Wildeman, 2004; Wennekers et al., 2007).

Stephan and Uhlaner (2010) suggest that among other things these inconsistent results may be because values are relatively distal to individual actions such as those required to create an operational business. We follow Stephan and Uhlaner's (2010) recommendation and focus on the perception of cultural norms, also called cultural practices, which are more directly linked to actual entrepreneurial behavior. For instance, research in social psychology powerfully shows that individuals are likely to display behavior in accordance with social norms prevalent in their environment – although they are not necessarily aware of the fact that social norms influence their conduct (e.g. Cialdini 2005). Thus, the cultural norms perspective fits well with study of the nascent or implementation phase, i.e. when nascent entrepreneurs need to act and complete various tasks to successfully launch their venture (e.g. Reynolds and

Curtis, 2008). Values may be a strong prior predictor of an initial decision to engage in entrepreneurship. However, for our study's nascent entrepreneurs this decision has already been made<sup>2</sup>.

Notably, Stephan and Uhlaner's (2010) study found a direct effect of socially-supportive cultural norms, but not of performance-based cultural norms on national entrepreneurship rates. They pointed to the fact that entrepreneurs are a minority of the working population within a country. Thus one reason for their unexpected result with regard to performance-based culture may be the fact that general measures of culture do not capture aspect relevant to entrepreneurship particularly well. The present research uses entrepreneurship-specific measures of culture and has thus the potential to extend their findings.

Whilst culture is most commonly conceptualized on the national level it is also acknowledged that smaller spatial units such as regions or communities may have a culture of their own (Davidsson 1995; García-Cabrera and Garcia-Soto 2009; Tung 2008). In the present study we focus on perceptions of community-level cultural norms, community as defined above. We feel this is an underdeveloped, but important perspective in culture and entrepreneurship research. Community-level culture is arguably more proximal to entrepreneurs' decisions and actions than national culture, and thus may be more consequential for the entrepreneurial process. Indeed entrepreneurship has been characterized as a locally embedded phenomenon, with most entrepreneurs starting businesses where they reside, were born, or have worked (see Brixy, Sternberg and Stueber, 2012 for a discussion), thus making community-level culture particularly relevant to the entrepreneurial process.

To summarize, the purpose of the present research is it to suggest that community-level cultural norms are a useful concept due to the local nature of entrepreneurial activity. To this end, we hold national culture and national formal institutions "constant" by focusing on entrepreneurs' perceptions of community culture within one nation. This is consistent with the

---

<sup>2</sup> In order to be classified as a nascent entrepreneur, individuals need to have indicated that they want to create a business and are currently taking first steps to this end.

view that national culture and formal institutions are shared within one country. House et al. (2004) report support for this notion with regard to cultural norms. There is necessarily some variation in formal institutions in federal nations such as the USA, although their influence on entrepreneurship may be less important than one would expect. For instance, a recent study by Bruce and Deskins (2011) found that across the US states, variation in tax laws was relatively small and had little impact on entrepreneurship. Similarly cross-national studies on, for instance, the consequences of specific regulation supporting entrepreneurship and the ease of doing business for entrepreneurship rates yield mixed results (e.g., Bowen and DeClercq, 2008; Van Stel, Storey and Thurik, 2007). In contrast, it seems that it is the fundamental institutional quality characterized by assurance of individual property rights and strong independent courts which is most consequential for entrepreneurship and which is arguably of similar quality across a nation such as the USA (e.g., Aidis, Estrin and Mickiewicz, 2008, 2010; McMullen, Bagby and Palich, 2008; also North, 2005).

### ***2.3. Self-efficacy, motivation and nascent entrepreneurs' businesses creation success***

In the previous section we discussed community-level socio-cultural norms and argued that they are most immediately relevant to nascent entrepreneurs' efforts to create an operational business. If this is accepted, the question arises how community-level socio-cultural norms would be conducive to entrepreneurs' efforts, and which particular socio-cultural norms would be important?

With regard to the first question – the “how” – we suggest that culture will exert its influence on entrepreneurial behavior particularly through supply-side variables, i.e. variables that impact the “supply” of potential entrepreneurs within a culture (Verheul, Wennekers, Audretsch and Thurik 2002; Stephan and Uhlaner 2010). A wide range of human capital and personality variables have been identified in past research as influencing the supply-side of entrepreneurship. Evidence from recent meta-analytic studies suggests that the effects of

specific personality traits and motivations (such as self-efficacy, achievement motivation, need for autonomy, innovativeness) on business creation and success are stronger than the effects of more generic human capital variables such as education and various types of work experience (e.g., managerial, leadership, or entrepreneurship experience) (Rauch and Frese, 2007; Unger, Rauch, Frese and Rosenbusch, 2011). Thus we concentrate on specific individual beliefs rather than human capital variables.

Our focus is on the implementation phase, i.e. the factors that enable venture emergence after the decision to become an entrepreneur has been made<sup>3</sup>. The implementation phase is arguably a phase particularly plagued with uncertainty, ambiguity, and in which the nascent entrepreneur faces many obstacles in reaching his/her goal of creating an operational venture. For instance, nascent entrepreneurs typically face resource constraints. Being a newcomer in the market also means that they have little legitimacy in the eyes of potential customers and suppliers. Not surprisingly then, a great number of aspiring entrepreneurs disband their venture due to the hardship they face (Delmar and Shane, 2003). Overall the implementation phase requires intense work effort over an extended time to complete multiple, challenging tasks and deal with uncertainty and setbacks (e.g. Reynolds and Curtin, 2009). In other words, nascent entrepreneurs need to be willing to work hard and be persistent in their goal pursuit despite the high uncertainty and obstacles faced.

Drawing on goal setting and socio cognitive theory (Bandura 1991; Bandura and Locke 2003; Locke and Latham 1991), we suggest that nascent entrepreneurs' with high start-up motivation and entrepreneurial self-efficacy will find it easier to deal with the challenges of creating an operational venture.

*Start-up motivation* refers to the entrepreneurs' willingness to exert effort in the venture creation process to "make the venture work". Thus, start-up motivation reflects the entrepreneurs' commitment to the goal of creating a venture (Dimov, 2010). The higher

---

<sup>3</sup> This is important as the relative importance of variables influencing the decision vs. implementation phase of the entrepreneurial process may vary (see Baron 2007).

nascent entrepreneurs' start-up motivation, the greater the chances that an operational venture will be created. This is consistent with goal setting theory (Locke and Latham, 1991, 2002) which more generally finds that goals energize individuals to work harder and smarter, resulting in better task performance. In particular, the more individuals feel committed to goals, as would be the case for nascent entrepreneurs with high start-up motivation, the more successful are they at achieving them (Locke and Latham, 2002, 2004).

Another crucial determinant of whether or not individuals achieve goals is whether or not they are confident that they have the skills and abilities needed to perform all the required tasks. In particular, *self-efficacy*, or expectations of personal efficacy determine whether a "...behavior will be initiated, how much effort will be expended, and how long it will be sustained in the face of obstacles and aversive experiences" (Bandura 1997, p. 191).

Evidence across a range of populations, research domains (from academic achievement, health behaviors to work performance), and methodological approaches (field and laboratory studies) provides consistent evidence that efficacy beliefs are significant contributors to motivation and performance (see Bandura and Locke 2003 for a review). Creating an operational venture requires substantial confidence into one's abilities to face the challenges ahead and to persist when facing obstacles (Markman and Baron, 2003). Consistent with this view, entrepreneurial self-efficacy has been found to be predictive of progress in establishing an operational venture (Cassar and Friedman, 2009; Townsend, Busenitz and Arthurs, 2010).

To sum up, start-up motivation and entrepreneurial self-efficacy (hereafter referred to simply as motivation and self-efficacy) are important determinants of whether or not nascent entrepreneurs complete the implementation phase and succeed in creating operational ventures. We suggest below that community cultural norms influence venture emergence through impacting these two key supply-side variables<sup>4</sup>. To define relevant aspects of culture,

---

<sup>4</sup> There might be additional influences of culture on the initial decision to become an entrepreneur. However, our focus is on the success of the implementation process of nascent entrepreneurs and not on the factors that incline them to become nascent entrepreneurs in the first place.

we draw on Stephan and Uhlaner's (2010) cross-national research. Their research suggests that two independent, higher-order dimensions capture the main variation of cultural norms across countries and that these two dimensions – performance-based and socially-supportive socio-cultural norms – are relevant to entrepreneurship.

### *2.3.1 Performance-based socio-cultural norms and nascent entrepreneurs' motivation and self-efficacy*

Performance-based cultures are cultures which reward individual accomplishment (Stephan and Uhlaner, 2010). They reflect “the extent to which a community encourages and rewards innovation, high standards and performance improvement” (Javidan, 2004, p. 239). Entrepreneurship is an achievement- and performance-orientated activity (e.g. McClelland 1976; Rauch and Frese 2007), in which individuals expend effort in return for expected financial and non-financial rewards. Non-financial rewards include for instance the high levels of autonomy, job satisfaction and well-being that entrepreneurs enjoy (Stephan and Roesler 2010; van Praag and Versloot 2007). In line with the notion of person-culture-fit (Tung, Walls and Frese 2007), entrepreneurship thus should thrive in socio-cultural environments which support performance-based behaviors including taking initiative, working to high standards, and achieving success through one's own personal effort rather than through status or inheritance (McClelland 1976; Stephan and Uhlaner 2010; Weber 1930). We build on and refine this argument below.

Entrepreneurship is a legitimate behavior in performance-based cultural contexts as it is in line with wider societal expectations of taking one's life in one's own hands and working hard to achieve a goal. Entrepreneurs who conform to these expectations, i.e. entrepreneurs who work hard and show the culturally approved “can do attitude” will find it easier, relatively speaking, to create an operational venture. Important stakeholders such as business partners, suppliers, financiers, customers and employees are more likely to regard these entrepreneurs

as capable and legitimate as they closely conform to their cultural expectations about effective performance-based behavior.

Conversely, entrepreneurs who are less aligned with cultural expectation around performance-orientation are more likely to withdraw from venture creation. These are entrepreneurs who are less determined to create a business, i.e. they are less willing or able to work very hard to create a business and/or have more doubt about their entrepreneurial abilities. These less strongly motivated and less self-efficacious entrepreneurs will be less legitimate in the eyes of important stakeholders as they are misaligned with the cultural norm. In other words, important stakeholders will have less faith in these entrepreneurs to succeed in creating successful businesses and consequently are less likely to support them. This in turn makes it yet more difficult for these entrepreneurs to create operational businesses and consequently they are more likely to give up their venture creation efforts.

In sum, we suggest that the expectation to demonstrate a hard working attitude combined with determined and confident high-performance behavior is stronger in performance-based cultures. Thus strongly motivated and highly self-efficacious entrepreneurs will thrive in these cultural contexts. They will be seen as legitimate by important stakeholders and consequently have relatively easier access to resources, both of which are crucial to succeed in creating operational ventures. Conversely, less strongly motivated and self-efficacious entrepreneurs will experience more difficulties as they are seen as less legitimate and less likely to succeed by important stakeholders and consequently will find it difficult to access important resources. In other words, performance-based cultural norms in a community are likely lead to endogenous matching between the norms and corresponding compatible potential entrepreneurs. Highly motivated and self-efficacious entrepreneurs fit more closely, and comparably less strongly motivated and self-efficacious entrepreneurs fit less well with performance-based cultural norms. Thus,

H1: The perception of performance-based cultural norms is positively associated with higher levels of H1a) start-up motivation and H1b) entrepreneurial self-efficacy in nascent entrepreneurs.

### *2.3.2 Socially-supportive institutional environment and nascent entrepreneurs' motivation and self-efficacy*

As much as entrepreneurship is a performance-based behavior and success in the venture creation process is due to the efforts of the nascent entrepreneur, entrepreneurship is also a behavior contingent on social support through others (e.g. Stephan and Uhlaner 2010; Thornton et al. 2011). Nascent entrepreneurs are likely to lack the resources that are needed to complete all relevant and critical tasks to create a new business (Pfeffer and Salancik, 1978; Davidsson and Honig, 2003). Indeed the major challenge in creating an operational venture is to access sufficient resources, both tangible, such as finance and also intangible such as information and emotional support (e.g., Aldrich, Rosen and Woodward, 1987; Bruederl and Preisendoerfer 1998; Hitt et al., 2011). The importance of the various types of social support for the venture creation process are most frequently discussed with reference to social capital, or the “goodwill that is engendered by the fabric of social relations and that can be mobilized to facilitate action” (Adler and Kwon 2002, p. 17). According to Cope, Jack, and Rose (2007), the term social capital also applies to broader external networks such as actors in the community, who might help founders to coordinate the foundation process more effectively.

Thus an environment in which various community actors from local investors, through government, to community groups actively support business creation efforts is likely to enhance entrepreneurs' access to resources and make their venture creation efforts ultimately successful. In turn, the display of support by various community actors gives the emerging venture added legitimacy with its various stakeholders thereby further enhancing its chances of success. Cross-national evidence supports this reasoning and finds cultures with stronger

socially supportive norms to have higher subsequent rates of business creation (Stephan and Uhlaner 2010).

We suggest that the perceptions of community support from government, financiers and local groups will increase nascent entrepreneurs' motivation to expend effort in the venture creation process, thus making its success more likely. In other words, the more nascent entrepreneurs perceive community support to be available, the more they will feel motivated to "keep going" and invest greater effort in the venture creation process rather than abandon it. Venture creation is typically a long, effortful process. Knowing that "one is not alone" and can tap into community support and resources if need be, is reassuring for the nascent entrepreneur and motivates them to forge ahead in their venture creation efforts. For instance, past research within work settings shows that the perception of the availability of social support impacts employees' work motivation (Van Yperen and Hagedoorn 2003).

H2a: The perception of socially-supportive institutional environments is positively associated with higher levels of start-up motivation in nascent entrepreneurs.

Socially supportive institutional environments may also empower nascent entrepreneurs through building their entrepreneurial self-efficacy. Research in organisational behaviour suggests that socially supportive cultural environments enhance individuals' self-efficacy beliefs (e.g. Choi and Chang 2009). In such environments individuals feel safe to experiment and try out various things without fear of failure, thus increasing their faith in their abilities to master challenges. Such behaviours are arguably also critical to venture creation efforts, where barriers abound and entrepreneurs often need to engage in trial and error to find which course of action gets them further in their venture creation efforts (Sarasvathy 2001). Supportive environments which allow for such experimentation have a greater tolerance towards making mistakes and failures, which is crucial for learning and developing mastery

beliefs (e.g., Edmondson, 1999, 2004; Stephan and Uhlaner, 2010; also Gelfand, Frese and Salmon, 2011). Thus,

H2b: The perception of socially-supportive institutional environments is positively associated with higher levels of self-efficacy in nascent entrepreneurs.

### **3. Methodology**

#### ***3.1. Dataset***

We draw on the Second Panel Study of Entrepreneurial Dynamics (PSED II) dataset. The PSED II is a representative survey of entrepreneurial activities in the United States that portrays individuals during their business creation process. It describes the characteristics of nascent entrepreneurs, documents the sequence of venture organizing activities, summarizes the types and quantities of resources committed, and characterizes the new ventures. Detailed descriptions of the methods and sampling used to generate PSED II and an overview on the data structure can be found in Reynolds and Curtin (2009).

In late 2005, nascent entrepreneurs were first identified through telephone interviews with a population-representative probability sample of 31,845 individuals of which 1,214 individuals were classified as active nascent entrepreneurs. A follow-up interview of these nascent entrepreneurs was conducted in early 2006, and then followed by yearly interviews. The last follow-up interview was completed in January 2010. In other words the PSEDII provides longitudinal data on entrepreneurial activity over a time span of 5 years.

The original sample of active nascent entrepreneurs was identified through their answers to screening questions as to whether they were intending to start a new firm, had already carried out some activity to help start the business, expected to own part of the firm, and did not already have an operational business. Nascent entrepreneurs were thus involved in an ongoing but not yet operational start-up. This sampling strategy ensures representative data

and also alleviates distortions caused by survivor bias. Research commonly focuses on existing firms thereby excluding those firms that were started but never became operational.

Throughout the data collection process, nascent entrepreneurs answered a detailed set of questions about start-up activities designed to capture their progress in creating an operational venture. The 5-year longitudinal data structure and the meticulous documentation of a large number of start-up activities enables drawing causal inferences among dependent and independent variables.

Figure 1 gives an overview of the number of respondents used in the present research. Wave A in 2005/2006 identified 1,214 nascent entrepreneurs that returned the questionnaire; the number drops subsequently due to non-response and disbandment of entrepreneurial activities to 972 nascent entrepreneurs in Wave B (2007) and 746, 526, and 435 for Waves C to E (2008, 2009 and 2010 respectively). Of all 1,214 nascent entrepreneurs sampled, 460 disbanded their venture and 228 perceived their venture as operational. Another 247 nascent entrepreneurs reported ongoing activities as per Wave E, but did not perceive their venture as operational. Lastly, 279 nascent entrepreneurs omitted at least one wave. These observations are excluded from the present analysis.<sup>5</sup> Our final sample thus consists of 590 nascent entrepreneurs (see also end of section 3.2. below).

### ***3.2 Dependent variable: Completion of entrepreneurial organizing activities***

Researchers have discussed a wide variety of measures to determine the point at which a nascent venture becomes an operational business: the ability to raise external money, the legal establishment of the new venture, the first sales, a positive cash flow, reaching the break-even point, etc. (Gartner and Carter, 2003; Davidsson and Gordon, 2011). Bygrave (1989) asserts that the only way to know whether the new venture will generate persistent business is to wait

---

<sup>5</sup> We tested for sample selection and attrition biases on our explanatory variables and whether or not respondents were omitting the filing of responses. Among the variables, only age and education influence the subsequent filing of responses positively (at the 1%, and 5% level, respectively). Hence, the sample studied resembles a slightly more educated and older population of nascent entrepreneurs than the initial sample of entrepreneurs. However, none of the other main explanatory variables is related to non-response across the waves.

until it is generating positive cash flows. Other researchers claim that there are limitations of cash flow as a measure for the completeness of the organizing activities. For instance, Bhide (2000) argues that cash flow is not likely to be an early goal of most high-potential new ventures. Katz and Cabezuelo (2004) make the case that nascent entrepreneurs are not always sophisticated enough to precisely calculate positive cash flows.

Our dependent variable is the occurrence of the first positive cash flow combined with a self-reported measure of being operational (vs. disbanding the venture). Our measure thus overcomes problems associated with the use of either researcher-defined or self-reported outcome measures through combining the two. In particular, our dependent variable, venture emergence, takes the value of 1 if nascent entrepreneurs' ventures generate positive cash flow – enough to cover managerial salaries – and entrepreneurs' report that their venture is operational. It combines questions A35 and A41 of PSED 2: whether monthly revenues ever exceeded monthly expenses (including salaries for the managers), and whether, based on this achievement, respondents would characterize their venture as being operational (Appendix 1).

We compare these with entrepreneurs that indicate to have terminated the venture. In particular, we follow Delmar and Shane (2003) and investigate in the case of disengagement, whether *all* entrepreneurs involved in the venture report disengagement. If others are still working on the venture, we do not treat the venture as disbanded just because the key respondent disengaged from it. If all members of the start-up team disengaged from the venture, then our dependent variable takes on the value of zero. We omit the data if others are still working on the venture as the venture is not yet disbanded (some people are “still trying” to launch it). Similarly we exclude all respondents who are “still trying” to launch a venture as per wave E. This procedure follows Davidsson and Gordon (2011) who suggest excluding the “still trying” category (see also Parker and Belghitar, 2006) when investigating venture emergence. The rationale is that those who are still trying after an extended period of time can best be described as “dilettante dreamers” or hobbyists nascent entrepreneurs, who are

arguably not serious about their start-up efforts. For them the nascent phase captures something qualitative different (Davidsson and Gordon, 2011; Parker and Belghitar, 2006).

To explore potential biases, we test whether differences exist between, on the one hand, the sample of nascent entrepreneurs who engaged in first business activities within the 5-year interval described above and the 24 month window prior to the first interview, and on the other hand, those entrepreneurs who undertook their first activity prior to this 7 year period. Gartner and Carter (2003) and Lichtenstein et al. (2007) suggest including only entrepreneurs who reported first activity within 24 months prior to the first interview. Their approach is similar to Delmar and Shane (2003), who, to accommodate potential censoring and selection biases, included only start-ups that underwent activities within the year of the interview.

T-tests reveal that the two groups differ substantially in terms of education and labor market experience (entrepreneurs that undertook their first activity prior to the specified 7 year time frame have on average an higher education and more labor market experience). To avoid biases we use coarsened exact matching on education and labor market experience, to make the sample coherent (Singh and Agrawal, 2011; Marx, Singh and Fleming, 2011). Matching removes heterogeneity across groups and removes distortions and bias caused by self-selection. We rely on the matching implementation in Stata, to choose the bins based on Scott's rule (1992) rather than providing cut-off points (Iacus, King, and Porro, 2011; Marx, Singh, and Fleming, 2011).

In sum, our final sample consists of 590 start-ups. 279 observations are excluded due to the omission of at least one wave. 247 observations are excluded because either others are still working on the venture (hence, no disbandment took place although the respondent disengaged from the venture) or the respondent indicated "still trying" as the status per wave E. Information on the socio-cultural variables is missing for 27 observations, and for 15 observations at least one of the control variables is missing, reducing the sample to 646 observations. Lastly, we employ coarsened exact matching to reduce distortions caused by the

timing of activities based on differences in human capital endowments. This leads to the exclusion of a further 56 observations for which no close match across the groups can be found.

### **3.3 *Analysis strategy***

We estimate a standard probit model alongside an instrumental variable probit model to analyze the effect of socio-cultural environments on entrepreneurial self-efficacy and start-up motivation, and on the subsequent likelihood of venture emergence. As argued above, we suggest that socio-cultural environments affect venture emergence not directly but rather indirectly through impacting the supply side of entrepreneurship – in particular start-up motivation and entrepreneurial self-efficacy. In other words, motivation and self-efficacy are endogenously determined by socio-cultural environments.

In essence, start-up motivation and self-efficacy appear as causal variables in the estimation model for venture emergence but are correlated with the error terms of such a model (Block, Hoogerheide, and Thurik, 2011). This correlation is due to omitted variables, such as perception of cultural norms as argued above. Given that individuals are likely to display behavior in accordance with social norms prevalent in their environment, we need to separate the indirect effect of social cultural norms from the subsequent performance implications of the corresponding endogenous supply side variables. To accommodate this endogenous nature of self-efficacy and motivation, we employ an instrumental variable analysis where start-up motivation and entrepreneurial self-efficacy are instrumented by the perception of the socio-cultural community environment (i.e. performance-based and socially-supportive cultures).

Table 2 reports the “traditional” probit estimations without endogeneity correction and the two instrumental variable regressions. In the presence of endogenous matching between the environmental context and the entrepreneurial characteristics traditional probit estimates are biased and the effect for supply-side variables is underestimated. Hence, we report both

approaches to make the models comparable and to discuss the issue of endogeneity as suggested by our hypotheses.

### **3.4 Explanatory variables: Start-up motivation and entrepreneurial self-efficacy**

*Start-up Motivation:* We follow Dimov (2010) and include questions from PSED II, Wave A on start-up motivation into our empirical analysis (see Appendix 2). In contrast to Dimov (2010) our measure of start-up motivation comprises of two questions, the third question that was part of Dimov's analysis based on the PSED I, was not included in the PSED II. However, combining the relevant questions available in PSED II results in a satisfactory Cronbach's alpha of 0.71, comparable to Dimov (2010).

*Entrepreneurial Self-Efficacy:* We include a measure of specific (as opposed to generalized) self-efficacy, measuring entrepreneurs' confidence to succeed in their venture creation efforts. We measure perceptions of entrepreneurial self-efficacy using the five questions identified by Dimov (2010) (see Appendix 3). Respondents answered these questions in Wave A of the PSED II study. They have a satisfactory Cronbach's alpha of 0.68 in the present research.

### **3.5 Instrumental variables: Perceptions of community culture**

Respondents' perceptions of cultural norms in their community were gathered in Wave A of the PSED II study. Stephan and Uhlaner (2010) found performance-based and socially-supportive cultural norms to be the two independent factors underlying a wide range of cultural dimensions. Informed by their study we applied confirmatory and exploratory factor analyses to test whether a similar structure is underlying perceptions of community cultural norms in the PSED II. We found a two factor model that shows excellent model fit. All items loaded significantly and substantially (over .60) on one of two factors, with no substantial cross-loadings. We termed the first factor *performance-based culture*. Its five items characterize cultural norms relating to performance (Appendix 4 displays the items). Cronbach's Alpha reliability was .84. We labeled the second factor *socially supportive*

*institutional environment* (Appendix 5 displays the items) as it captures the availability of social capital, or social support for starting entrepreneurs from various community sources and actors. Cronbach's Alpha reliability is .66.<sup>6</sup>

Our measure of community cultural norms is in line with multi-level theory and particularly research on item-referents (e.g. Chan, 1998; Klein and Kozlowski, 2000) and advances in cross-cultural research (e.g., Fischer, 2006; House et al., 2004). That is, the questions specifically reference the community when they ask respondents about their perceptions of typical behaviors in the *community in which they live* (Appendix 4 and 5).

### ***3.6 Control variables***

We operationalize *human capital* of nascent entrepreneurs using the most widely-cited factors including formal education (e.g., Evans and Leighton, 1989; Dickson, Solomon, and Weaver, 2008; Unger et al., 2011), labor market experience (e.g., Bosma et al, 2004), and entrepreneurial experience (e.g., Robinson and Sexton, 1994; Bosma et al, 2004). A factor analysis (with varimax rotation) yields a clear 3-factor structure for these three measures. The underlying questions are shown in the appendices 6, 7 and 8. The variables are calculated for solo entrepreneurs and entrepreneurial teams. In the latter cases, we include the average team level human capital across all members of the entrepreneurial team.

*Formal Education:* In the PSED II, respondents were asked to indicate the highest level of education that all members of the entrepreneurial team had completed. We recoded

---

<sup>6</sup> To ensure that we are not only picking up national cultural norms with our measure, we tested for sub-national, regional variations in the perception of community cultural norms. We estimated two OLS regressions using performance based community culture and socially supportive institutional environment as the dependent variable respectively. We use information on 12 regions, cities and rural areas as made available in the PSED II dataset as predictor variables in our analysis. Coefficients for Midwest regions are negative and significant for both community cultures ( $\beta = -0.273$  and  $\beta = -0.372$ ,  $p < 0.05$  respectively). Coefficients for South Atlantic and Pacific are positive and significant for performance based community cultures ( $\beta = 0.227$  and  $\beta = 0.176$ ,  $p < 0.1$ ). Lastly coefficients for both dependent variables are negative and significant for metropolitan areas cultures ( $\beta = -0.097$  and  $\beta = -0.105$ ,  $p < 0.05$  respectively). In other words, we find the perception of community cultural norms to differ across regions, which indicated that our measures tap into meaningful sub-national, regional cultural variation, rather than measuring national culture alone. These tests are of course not perfect as we define community to be smaller than any broad region (see introduction). Such fine grained information is not available in the PSED dataset however.

this variable, ranging from elementary school to PhD, into number of years of education (see e.g. Davidsson and Honig, 2003; Iacus, King, and Porro, 2011, and Appendix 6).

*Labor Market Experience:* PSED II provides information about the years of work experience in the industry a new venture is active in, years of full-time paid work experience, and years of managerial, supervisory, or administrative responsibilities of the nascent entrepreneurs. The Cronbach's alpha is 0.72 across these three items (see Appendix 7).

*Entrepreneurial Experience:* We use information on the number of other businesses the respondents previously helped to start as an owner, and the number of other businesses they have owned. Cronbach's alpha is 0.65 (Appendix 8).

*Industry:* Since the role of business planning can differ across industries, we account for these effects by including industry dummy variables. We control for retail, consumer services, health, consulting, manufacturing and construction, real estate and finance and other industries. We omit "other industries" as the reference group in each regression to avoid perfect collinearity. Inclusion of industry dummies is indicated in the corresponding table.

*Age:* We control for the age of the entrepreneurs, using the average over all team members as indicated in Wave A.

*Team Size:* We control for team size using all team members as indicated by the respondents to the questionnaire in Wave A.

*Competition:* We measure the perception of competition using a three-point scale. 3 means "there are many other businesses offering the same product or service," 2 means "there are few other businesses offering the same product or service," 1 means "there are no other businesses offering the same product or service." (see Appendix 9).

*Market Newness:* We measure the perception of market newness by using the answer to the question whether the product is unfamiliar to all, some or none of the potential customers (Appendix 10). The variable uses a three-point scale. The scale is: "3" equals "all customers will be unfamiliar with this new product or service", "2" equals "some customers

will be unfamiliar with this new product or service”, and “1” equals “none of the customers will be unfamiliar with this new product or service”. The variable represents newness of a product to customers (see Dahlqvist and Wiklund, 2011).

## 4. Results

### 4.1. Descriptive statistics

Table 1 summarizes the details for the study sample of 590 nascent entrepreneurial ventures. Among these, 30% considered their venture to be operational while some 70% disbanded their start-up. These rates are similar to other studies that analyze the creation of new firms in the US (Spletzer et al., 2004; Reynolds, 2009). On average, nascent entrepreneurs in the sample have an education equivalent to 15 years of schooling and 13 years of work experience. Two out of three nascent entrepreneurs either owned a new venture previously or helped someone to start a business.

[Insert table 1 about here]

### 4.2. Hypotheses tests

Table 2 reports the standard probit regression using the personal beliefs and socio-cultural norms as independent variables and the instrumental variable results, including the first stage estimates. Column 1 (model 1) reports the standard probit model with *start-up motivation* and cultural norms as separate regressors. We see that in this standard probit model none of the variables is significant at conventional levels. However, once we endogenize start-up motivation (columns 2 and 3, models 2a and 2b), both performance-based and socially supportive cultures influence start-up motivation positively ( $\beta = 0.114$ ,  $p < 0.05$  and  $\beta = 0.098$ ,  $p < 0.05$ , respectively model 2a). Moreover, the coefficient for start-up motivation turns significant ( $\beta = 0.725$ ,  $p < 0.01$ ) and exhibits a positive sign for the effect on venture emergence (model 2b).

A similar pattern of results is evident for *entrepreneurial self-efficacy*. The standard probit model in column 4 (model 3, table 2) reveals that self-efficacy has a positive and significant impact on new venture emergence ( $\beta = 0.245$ ,  $p < 0.05$ ), but none of the cultural norms is significant at conventional levels. Once we control for possible endogeneity of entrepreneurial self-efficacy (columns 5 and 6, models 4a and 4b), the first stage results document that performance-based cultures raise the level of entrepreneurial self-efficacy ( $\beta = 0.099$ ,  $p < 0.01$ ) and in turn, the impact of entrepreneurial self-efficacy on venture emergence increases strongly ( $\beta = 1.210$ ,  $p < 0.01$ ).

[Insert table 2 about here]

The Wald test of exogeneity ( $p=0.069$  and  $p=0.097$ ) reveals that the instrumental variable approach reported is warranted. Moreover, when regressing the instruments and control variables on the instrumented variables the corresponding F-statistic is significant at the 1% level for both regressions. In addition, we also tested for the suitability of our instruments using the Amemiya-Lee-Newey minimum chi-square statistic (Amemiya, 1978; Lee, 1992; Newey, 1987). For both socio-cultural instrumental variable models, the null hypothesis of valid instruments is not rejected. The instruments are therefore suitable and the model is not over-identified. These tests suggest that results from standard probit analysis are biased and should not be interpreted (Kennedy, 2008; Block, Hoogerheide, and Thurik, 2011).

In sum, the two instrumental variable regressions document evidence that controlling for endogenous selection into entrepreneurial activities matters, i.e. community cultural norms influence start-up motivation and entrepreneurial self-efficacy.

## 5. Discussion

Drawing on a 5-year longitudinal study of nascent entrepreneurs and their venture creation efforts, we tested mechanisms by which informal institutions – in particular the perception of socio-cultural norms – impact the business creation process. In line with our arguments we found that community-level cultural norms influence venture emergence indirectly through their impact on nascent entrepreneurs' start-up motivation and entrepreneurial self-efficacy beliefs, i.e. key supply-side variables. Performance-based and socially-supportive community cultural norms shape important individual beliefs, which in turn determine whether or not nascent entrepreneurs succeed in creating operational ventures. We found full support for our hypotheses that performance-based culture impacts entrepreneurial self-efficacy and start-up motivation. For socially-supportive institutions we found the hypothesized influence on start-up motivation but not on entrepreneurial self-efficacy.

We believe that our study makes two important contributions to the relatively under researched field of cultural norms and entrepreneurship. First, our study contributes to research on culture by providing a fresh perspective of community-level as opposed to nation- or regional-level culture and the importance of these community-level cultural norms for venture emergence.

Second, it highlights culture's role as a "background" variable in that cultural influences on entrepreneurial behavior may best be considered as indirect effects impacting key supply-side variables, in our case important individual beliefs. We show that entrepreneurial self-efficacy and start-up motivation are endogenously influenced by community-level culture. In doing so, our research provides a conceptual framework to bridge and integrate the literatures on culture on the one hand and individual-level determinants of entrepreneurship such as self-efficacy on the other hand. Here our study goes beyond past research that either equated culture with individual-level personality characteristics or proxies culture by the region or country in which the entrepreneur lives (e.g. Thomas and Mueller 2000). It also advances past

research which used culture scores from existing data bases and merged these with country-level prevalence rates of entrepreneurship – neglecting for the most part individual-level antecedents (e.g. Stephan and Uhlaner 2010; Uhlaner and Thurik 2007; Wennekers et al. 2007).

Taken together, our findings re-iterate the need for more contextualized theories of entrepreneurship (Baker, Gedajlovic and Lubatkin 2005) and show that cultural norms matter. They also provide evidence that culture influences individual-level antecedents of entrepreneurship rather than treating these individual factor as rooted purely in individual experiences and perhaps even genes (e.g. Nicolaou, Shane, Cherkas, Hunkin and Spector, 2008).

Our research is the first to demonstrate these relationships for community-level culture and in a longitudinal study of venture emergence. It complements recent cross-national, cross-sectional research which finds similar associations on aggregate country-level scores of national culture and national aggregates of individual beliefs (Stephan and Uhlaner 2010). Taken together, our research highlights how embedded in the local, community context entrepreneurial behavior and its immediate antecedent beliefs are.

Our results with regard to *performance-based culture* are the strongest. They indicate that these cultures encourage and support those with strong start-up motivation and entrepreneurial self-efficacy to complete the venture creation process. These determined “can do” entrepreneurs align closely with the cultural performance norm and are thus more likely to be seen as legitimate, more likely receive support from key stakeholder and are more likely to succeed in creating an operational venture. The opposite is true for less strongly motivated and self-efficacious nascent entrepreneurs who are less likely to receive support as they do not align with the cultural norm. At first, such selection processes seem to be a good thing as they may deter those nascent entrepreneurs who are less likely to create operational businesses from wasting time and effort in pursuing an entrepreneurial career. Nevertheless, when

overall levels of entrepreneurship are already low in a community, such selection processes may not be desirable, particularly as there may be other means to support those with lower self-efficacy in the venture creation process and indeed in building the necessary entrepreneurial self-efficacy and motivation. Whilst, in performance-based cultures such individuals may be discouraged from pursuing entrepreneurial careers early on and are more likely to give up early in the venture creation process thus precluding any opportunity to provide support to them.

With regard to *socially-supportive culture* we found the expected effect on start-up motivation. The implication is that the perception of available community support from government, financiers and local groups reassures and motivates the nascent entrepreneur to expend effort. It will be relatively easier for nascent entrepreneurs in such socio-cultural environments to access important resources when creating their ventures and to legitimize their venture in the eyes of important stakeholders due to support from important community actors.

The second influence path that we hypothesized – that socially-supportive culture influences entrepreneurial self-efficacy – was not supported. This is surprising as a past cross-national study found support for an equivalent relationship in which socially-supportive cultural norms impacted entrepreneurial self-efficacy and business creation efforts in turn (Stephan and Uhlaner 2010). The probable explanation lies in the somewhat different measures of socially supportive culture. The current study focused specifically on the *socially supportive institutional environment*, i.e. the extent to which nascent entrepreneurs perceive relevant community actors to be supportive, including government, financiers and community groups. By contrast, Stephan and Uhlaners' measure captured a more generic notion of socially supportive culture. This was socially supportive culture as the cooperative norms resulting from how *friendly and supportive people* in a culture are in general. Thus it may be that self-efficacy takes relatively long to develop and is furthered by the underlying

cooperative norms in a society. However, support available from various institutional actors within a community does not seem to have the same effect on entrepreneurial self-efficacy.

Our research is characterized by a number of *strengths*. The early stage screening within PSED II ensures that the data are representative and more importantly, reduces distortions caused by potential survivor bias. The re-interviewing over the course of five years and the fine grained capture of venture organizing activities over this period facilitates causal inferences among dependent and independent variables. The combination of emerged and terminated ventures along with our matching to ensure sample homogeneity allow us to overcome limitations associated with right censoring and heterogeneous time horizons for nascent entrepreneurship (Dimov, 2010; Davidsson and Gordon, 2011; Lichtenstein et al., 2007).

Our study improves upon past research by employing entrepreneurship-specific measures of cultural norms rather than using generic measure of culture unrelated to entrepreneurship. Past studies on culture and entrepreneurship typically draw on measures of general culture such as Hofstede's values (e.g. Wennekers et al. 2007). This could be problematic as entrepreneurs are typically a minority within their own culture – the majority of the workforce across countries works in dependent employment arrangements. Thus it may be that perceptions of general culture do not capture those aspects of culture particularly relevant to entrepreneurs. In particular, the only other study we know of that investigates cultural *norms* in relationship to entrepreneurship measures generic performance-based and socially supportive cultural norms (Stephan and Uhlaner 2010). Our study supplements this research by contributing and validating a measure of these cultural dimensions specifically tailored for and relevant to entrepreneurship. Future research could combine both general and entrepreneurship-specific measures of cultural norms and also cultural values to further advance our understanding about how culture impacts entrepreneurship.

No study is perfect and ours is no exception. The perceptions of community cultural norms as well as nascent entrepreneurs' reports of their motivation and self-efficacy were both collected in Wave A of the PSED II survey. This opens the possibility of common method bias affecting the reporting of both cultural norms and personal beliefs. However, several facts make common method bias a less likely explanation of the current findings. First, in terms of questionnaire design, the questions we used to measure our constructs of interests were distributed across the entire questionnaire which captured many more constructs, thus reducing the likelihood that respondents answered them in a similar fashion. In addition, the question on cultural norms and nascent entrepreneurs motivation and self-efficacy use different item referents – descriptions of community-level behavior vs. evaluation of own beliefs – which further alleviates common method bias concerns. Second in terms of statistical controls, we conducted Harman's one factor test on all items included in our model as recommended by Podsakoff and Organ (1986). If common method bias occurs then one common factor should be extracted. We found no evidence for such a factor.

Finally, drawing on multi-level theory and in particular research on item-referents we suggested that our study captures community-level culture. We see community-level culture as nested within and influenced by national culture, but at the same time also distinct from community-level culture. Equivalent research in organizational behavior finds organizational cultures to be influenced by national culture but also to be distinct from them (e.g. House et al., 2004). We found first empirical evidence that our community-level cultural norms indeed capture sub-national variation by finding that they vary across geographical regions (see footnote 6). However, we look forward to future studies measuring both community- and national culture within the same study to build robust evidence on their relationship and on their relative influence on entrepreneurial behavior.

While we adopt a geographical definition of community, other definitions, e.g. ethnic or professional community, are also possible<sup>7</sup>. Thus although the term seemed self-evident in our research, respondents might have understood it differently. Future studies could explore respondents' concepts of community and when surveying respondents could provide a more fine-grained description as to what they mean by community.

In line with the extant literature, we have stressed the importance of high self-efficacy beliefs for entrepreneurs' success in creating operational ventures (e.g. Cassar and Friedman, 2009; Rauch and Frese, 2007). However, there could be "too much of a good thing". It may be possible that there is an inverted u-shaped effect (e.g. Warr, 2007) such that highly self-efficacious entrepreneurs in later, less uncertain stages of the entrepreneurial process (e.g. managing an operational business on a daily basis) suffer from overconfidence in their skills and thus make less optimal decisions (Koellinger, Minniti and Schade, 2006).

## **6. Conclusion**

Policymakers are interested in increasing entrepreneurial activity (Gilbert, Audretsch, and McDougall, 2004). On the country level, new firm entry through entrepreneurial activities can enhance economic growth, innovation, and productivity (Aghion et al., 2009). Our work documents that enhancing entrepreneurial activity has more facets, than a dichotomous decision to become an entrepreneur might reveal. In line with literature that sees entrepreneurship as a locally embedded phenomenon, we find that entrepreneurs and their personal characteristics differ widely across sub-national, community cultural contexts. Thus the community context should be taken into account when tailoring assistance and advice to entrepreneurs. Our research highlights the embeddedness of entrepreneurial behavior and its immediate antecedent beliefs in the local, community context.

---

<sup>7</sup> We thank an anonymous reviewer for pointing this out.

## 7. References

- Adler, P.S. and Kwon, S. 2002. Social Capital: Prospects for a New Concept. *Academy of Management Review*, 27(1), 17—40.
- Aghion, P., R. Blundell, R. Griffith, P. Howitt and S. Prantl 2009. The effects of entry on incumbent innovation and productivity, *The Review of Economics and Statistics*, 91 (1): 20–32
- Aidis, R., Estrin, S. and Mickiewicz, T. 2008. Institutions and Entrepreneurship Development in Russia: A Comparative Perspective. *Journal of Business Venturing* 23, 656-672.
- Aidis, R., Estrin, S., and Mickiewicz, T. M. 2010. Size matters: Entrepreneurial entry and government. *Small Business Economics*. advanced online publication DOI: 10.1007/s11187-010-9299-y.
- Aldrich, H.E., Rosen, D., and Woodward, B. 1987. The impact of social networks on business foundings and profit: A longitudinal study. In N. Churchill et al. (Eds.), *Frontiers of Entrepreneurship Research 1987*: 154 -168. Wellesley, MA: Center for Entrepreneurial Studies, Babson College
- Amemiya, T. 1978. The estimation of a simultaneous equation generalized probit model. *Econometrica* 46(5): 1193–1205.
- Baker, T., Gedajlovic, E. and Lubatkin, M. 2005. A Framework for Comparing Entrepreneurship Processes across Nations. *Journal of International Business Studies*, 36: 492-504.
- Baum, J. and Locke, E.A. 2004. The Relationship of Entrepreneurial Traits, Skill, and Motivation to Subsequent Venture Growth. *Journal of Applied Psychology*, 89(4): 587–598.
- Bandura, A., and Locke, E. A. 2003. Negative self-efficacy and goal effects revisited. *Journal of Applied Psychology*, 88(1): 87-99.
- Bandura, A. 1997. Self-efficacy: the exercise of control. New York: W. H. Freeman and Co.
- Bandura, A. 1991. Social cognitive theory of self-regulation. *Organizational Behavior and Human Decision Processes*, 50(2): 248-287.
- Baron, R.A. 2007. Entrepreneurship: A process perspective. In J.R. Baum, M. Frese and R.A. Baron (eds.) *The psychology of entrepreneurship*: 19-39. Mahwah, NJ: Lawrence Erlbaum.
- Bhidé, A. 2000. The origin and evolution of new businesses. Oxford University Press, N.Y.
- Block, J., L. Hoogerheide and R. Thurik, 2011. Education and entrepreneurial choice: An instrumental variables analysis, *International Small Business Journal* (In Press)
- Bosma, N., M. van Praag, R. Thurik and G. de Wit. 2004. The value of human and social capital investments for the business performance of startups, *Small Business Economics*, 23(3): 227-236.
- Bowen, H.P., and De Clercq, D. 2008. Institutional context and the allocation of entrepreneurial effort. *Journal of International Business Studies*, 39(4): 747-767.
- Brixy, U., Sternberg, R. and Stüber, H. 2012. The Selectiveness of the Entrepreneurial Process. *Journal of Small Business Management*, 50: 105–131.
- Bruce, D. and Deskins, J. 2011. Can state tax policies be used to promote entrepreneurial activity? *Small Business Economics* advanced online publication DOI: 10.1007/s11187-010-9262-y.
- Bruederl, J., and Preisendoerfer, P. 1998. Network support and the success of newly founded businesses. *Small Business Economics*, 10(3): 213-225.
- Bygrave, W. 1989. Theory building in the entrepreneurship paradigm. *Journal of Business Venturing*, 8(3): 255–280.
- Cassar, G., & Friedman, H. 2009. Does self-efficacy affect entrepreneurial investment? *Strategic Entrepreneurship Journal*, 3(3): 241-260.

- Chan, D., 1998. Functional relations among constructs in the same content domain at different levels of analysis: A typology of composition models. *Journal of Applied Psychology*, 83(2):234-246.
- Choi, J. N., and Chang, Y.J. 2009. Innovation implementation in the public sector: An integration of institutional and collective dynamics. *Journal of Applied Psychology*, 94(1): 245–253
- Cialdini, R.B. 2005. Basic Social Influence Is Underestimated. *Psychological Inquiry*, 16 (4), 158–161
- Cope, J., Jack, S., and Rose, M.B. 2007. Social capital and entrepreneurship: An introduction. *International Small Business Journal*, 25(3), 213-219.
- Dahlqvist, J. and J. Wiklund. 2011. Measuring the market newness of new ventures *Journal of Business Venturing* (in Press)
- Davidsson, P. 1995. Culture, structure and regional levels of entrepreneurship. *Entrepreneurship and Regional Development*, 7:1, 41 – 62
- Davidsson, P. and B. Honig 2003. The role of social and human capital among nascent entrepreneurs, *Journal of Business Venturing*, 18(3): 301-331.
- Davidsson, P. and S. Gordon 2011. Panel studies of new venture creation: a methods-focused review and suggestions for future research, *Small Business Economics* (in Press).
- Delmar, F. and S. Shane 2003. Does business planning facilitate the development of new ventures?, *Strategic Management Journal*, 24 (12): 1165–1185.
- Delmar, F. and S. Shane 2006. Does experience matter? The effect of founding team experience on the survival and sales of newly founded ventures, *Strategic Organization*, 4, 215–247.
- Dickson, P. T., G. Solomon and K. Weaver 2008. Entrepreneurial selection and success: Does education matter?, *Journal of Small Business and Enterprise Development*, 15(2): 239-258.
- Dimov D. 2010. Nascent entrepreneurs and venture emergence: Opportunity confidence, human capital, and early planning. *Journal of Management Studies*, 47(6): 1123-1153
- Djankov, S., La Porta, R., Lopez-de-Silanes, F., and Shleifer, A. 2002. The regulation of entry. *Quarterly Journal of Economics*, 117(1): 1–35.
- Edmondson, A. 1999. Psychological Safety and Learning Behavior in Work Teams. *Administrative Science Quarterly*, 44(2): 350-383.
- Edmondson, A. C. 2003. Managing the risk of learning: Psychological safety in work teams. In M. A. West, D. Tjosvold, and K. G. Smith (Eds.), *International Handbook of Organizational Teamwork and Cooperative Working* (Vol. 48, pp. 255-275). Wiley-Blackwell.
- Evans, D. and L. Leighton 1989. Some empirical aspects of entrepreneurship, *American Economic Review*, 79: 519-535.
- Fischer, R., 2006. Congruence and functions of personal and cultural values: do my values reflect my culture's values? *Personality and Social Psychology Bulletin*, 32(11): 1419-1431.
- García-Cabrera, A. M. and Garcia-Soto, M.G. 2009. Cultural differences and entrepreneurial behaviour: an intra-country cross-cultural analysis in Cape Verde. *Entrepreneurship and Regional Development* 20:5,451 — 483
- Gartner, W. and N. Carter 2003. Entrepreneurial behavior and firm organizing processes. In: Acs, Z.J., Audretsch, D.B. (Eds.), *Handbook of entrepreneurship research*. Kluwer Academic Publishers, Boston: 195-221.
- Gelfand, M. J., Frese, M., and Salamon, E. 2011. Cultural influences on error prevention, detection, and management. In D. A. Hofmann and M. Frese (Eds.), *Errors in Organizations* (pp. 273-315). New York, NY: Taylor & Francis Ltd.

- Gilbert, B., D. Audretsch and P. McDougall 2004. The Emergence of Entrepreneurship Policy, *Small Business Economics*, 22(3), 313-323
- Gorgievski, M., Ascalon, M.E. and Stephan, U. 2011. Small business owners' success criteria, a values approach to personal differences. *Journal of Small Business Management*, 49(2), 207-232.
- Gruber, M., I. MacMillan and J. Thompson 2008. Look Before You Leap: Market Opportunity Identification in Emerging Technology Firms, *Management Science*, 54(9): 1652-1665
- House, R.J., Hanges, P.J., Javidan, M., Dorfman, P.W., and Gupta V. (eds.) (2004). *Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies*. Sage: Thousand Oaks, CA.
- Hayton, J.C., George, G., and Zahra, S.A. 2002. National culture and entrepreneurship: A review of behavioral research. *Entrepreneurship Theory and Practice*, 26(4): 33-52.
- Hébert, R.F., and Link, A.N., 1982. *The entrepreneurs: Mainstream views and radical critiques*. New York: Praeger.
- Hofstede, G., Noorderhaven, N.G., Thurik, A.R., Uhlaner, L.M., Wennekers A.R.M., & Wildeman, R.E. 2004. Culture's role in entrepreneurship: Self-employment out of dissatisfaction. In T. Brown and J. Ulijn & (Eds.), *Innovation, entrepreneurship and culture: The interaction between technology, progress and economic growth*: 162-203. Cheltenham, UK: Edward Elgar.
- Hitt, M.A., Ireland, R.D., Sirmon, D.G. and Trahms, C. 2011. Strategic entrepreneurship: Creating value for individuals, organizations and society. *Academy of Management Perspectives*, 25(2): 57-75.
- Iacus, S., G. King and G. Porro 2011. Causal Inference Without Balance Checking: Coarsened Exact Matching. *Political Analysis* (in Press)
- Javidan, M. 2004. Performance Orientation. In R. J. House, P. J. Hanges, M. Javidan, P. W. Dorfman, and V. Gupta (Eds.), *Culture Leadership and Organizations The GLOBE study of 62 societies* (pp. 239-281). Thousand Oaks, CA: Sage.
- Javidan, M., House, R. J., Dorfman, P. W., Hanges, P. J., & Sully De Luque, M. 2006. Conceptualizing and measuring cultures and their consequences: a comparative review of GLOBE's and Hofstede's approaches. *Journal of International Business Studies*, 37(6): 897-914.
- Katz, J. and A. Cabezuelo 2004. Measures of financial sophistication. In: Gartner, W.B., Shaver, K.G., Carter, N.M., Renolds, P.D. (Eds.). *Handbook of entrepreneurial dynamics: The process of business creation*. Sage Publications, Thousand Oaks, CA: 658-688.
- Kennedy, P. 2008. *A Guide to Econometrics* (6th edn) Oxford: Blackwell Publishing.
- Kilkenny, M., Nalbarte, L., & Besser, T. 1999. Reciprocated community support and small town-small business success. *Entrepreneurship and Regional Development*, 11: 231-246.
- Klein, K. J., and Kozlowski, S. W. 2000. *Multilevel theory, research, and methods in organizations*. San Francisco: Jossey-Bass.
- Koellinger, P., Minniti, M. and Schade, C. 2006 I think I can, I think I can: Overconfidence and Entrepreneurial behavior, *Journal of Economic Psychology* 28: 502-527.
- Lee, L. 1992. Amemiya's generalized least squares and tests of overidentification in simultaneous equation models with qualitative or limited dependent variables. *Econometric Review* 11(3): 319-328.
- Leung, K., Bhagat, R. S., Buchan, N. R., Erez, M., and Gibson, C. B. 2005. Culture and international business: recent advances and their implications for future research. *Journal of International Business Studies*, 36(4): 357-378.

- Levie, J., and Autio, E. 2008. A theoretical grounding and test of the GEM model. *Small Business Economics*, 31(3): 235-263.
- Lichtenstein, B., N. Carter, K. Dooley and W. Gartner 2007. Complexity dynamics of nascent entrepreneurship, *Journal of Business Venturing*, 22(2): 236-261.
- Locke, E. A., and Latham, G. P. 1991. A theory of goal setting and task performance. Englewood Cliffs, NJ: Prentice Hall.
- Markman, G. and R. Baron 2003. Person-entrepreneurship Fit: Why Some People are More Successful as Entrepreneurs than Others, *Human Resource Management Review* 13(2): 281–301.
- Marx, M., J. Singh and L. Fleming 2010. *Regional Disadvantage? Non-competes and Brain Drain*, unpublished paper presented at the annual meetings of the Academy of Management, Montreal, August 2010.
- McClelland, D. C. 1976. *The achieving society*. New York: Irvington.
- McMullen, J.S., Bagby, D., and Palich, L. 2008. Economic freedom and the motivation to engage in entrepreneurial action. *Entrepreneurship Theory and Practice*, 32(5), 875–895.
- Newey, W. 1987. Efficient estimation of limited dependent variable models with endogenous explanatory variables. *Journal of Econometrics* 36(3): 231–250.
- Nicolaou, N., Shane, S., Cherkas, L, Hunkin J., and Spector, T.D. 2008. Is the Tendency to Engage in Entrepreneurship Genetic. *Management Science*, 54: 167-179.
- North, D.C. 1991. Institutions. *Journal of Economic Perspectives*, 5(2): 97-112.
- North, D.C. 2005. *Understanding the process of economic change*. Princeton: Princeton University Press.
- Parker, S. and Y. Belghitar 2006. What happens to nascent entrepreneurs? An econometric analysis of the PSED, *Small Business Economics*, 27(1): 81–101.
- Parker, S.C. 2009. *The economics of entrepreneurship*. Cambridge.
- Pfeffer, J. and Salancik, G. 1978. *The External Control of Organizations: A Resource Dependence Perspective*. Harper and Row, New York.
- Podsakoff, P. M. and Organ, D. W. 1986. ‘Self-reports in organizational research: problems and prospects. *Journal of Management*, 12, 531–44.
- Rattan, V. and Welpel, I. 2011. Community-based, social and societal entrepreneurship, *Entrepreneurship & Regional Development*, 23:5-6, 283-286
- Rauch, A., and Frese, M. 2007. Let’s put the person back into entrepreneurship research: A meta-analysis on the relationship between business owners’ personality traits, business creation, and success. *European Journal of Work and Organizational Psychology*, 16(4): 353-385.
- Reynolds, P. 2009. Screening item effects in estimating the prevalence of nascent entrepreneurs. *Small Business Economics*, 33(2), 151–163.
- Reynolds, P. and R. Curtin 2009. *Business Creation in the United States: Initial Explorations with the PSED II Data Set*. NYC, Springer.
- Reynolds, P.D., Bosma, N., Autio, E., Hunt, S., DeBono, N., Servais, I., Lopez-Garcia, P., and Chin, N. 2005. Global entrepreneurship monitor: Data collection design and implementation 1998-2003. *Small Business Economics*, 24(3): 205-231.
- Robinson, P. and E. Sexton 1994. The effect of education and experience on self-employment. *Journal of Business Venturing*, 9(2): 141-156.
- Sarasvathy, S.D. 2001. Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *Academy of Management Review*, 26: 243-263.
- Scott, D. 1992. Multivariate density estimation. Theory, practice and visualization. New York: John Wiley and Sons, Inc.

- Shane, S. and Venkataramen, S. 2000. The promise of entrepreneurship as a field of research. *Academy of Management Review*, 25(1): 217-226.
- Singh, J. and A. Agrawal 2011. Recruiting for Ideas: How Firms Exploit the Prior Inventions of New Hires, *Management Science*, 57(1): 129–150
- Spletzer, J., R. Faberman, A. Sadeghi, D. Talan and R. Clayton 2004. Business employment dynamics: New data on gross job gains and losses, *Monthly Labor Review*, 127 (4): 29–42.
- Stephan, U. and Roesler, U. 2010. Comparison of entrepreneurs and employees health in a national representative sample. *Journal of Occupational and Organisational Psychology*, 83(3), 717-738.
- Stephan, U. and Uhlaner, L. M. 2010. Performance based vs. Socially supportive culture: A cross-national study of descriptive norms and entrepreneurship. *Journal of International Business Studies*, 83: 717-738.
- Thomas, A.S. and Mueller, S.L. 2000. A Case for Comparative Entrepreneurship: Assessing the Relevance of Culture. *Journal of International Business Studies*, 31: 287-301
- Thornton, P.H., Ribeiro-Soriano, D. and Urbano, D. 2011. Socio-cultural factors and entrepreneurial activity: An overview. *International Small Business Journal* 29(2) 105–118.
- Townsend, D. M., Busenitz, L. W., & Arthurs, J. D. 2010. To start or not to start: Outcome and ability expectations in the decision to start a new venture. *Journal of Business Venturing*, 25(2): 192-202.
- Tung, R.L. 2008. The cross-cultural research imperative: the need to balance cross-national and intra-national diversity. *Journal of International Business Studies*, 39, 41–46.
- Tung, R.L., Walls, J., and Frese, M. 2007. Cross-cultural entrepreneurship: The case of China. In J.R. Baum, M. Frese, and R. Baron (Eds.), *The Psychology of Entrepreneurship*: 265-286. Mahwah, NJ: Lawrence Erlbaum Associates.
- Uhlaner, L. M. and Thurik, R. 2007. Postmaterialism influencing total entrepreneurial activity across nations. *Journal of Evolutionary Economics*, 17: 161-185.
- Unger, J., A. Rauch, M. Frese and N. Rosenbusch 2011. Human capital and entrepreneurial success: A meta-analytical review, *Journal of Business Venturing*, 26(3): 341-358
- Van Praag, C.M., and Versloot, P.H. 2007. What is the value of entrepreneurship? A review of recent research. *Small Business Economics*, 29(4): 351-382.
- Van Stel, A., Storey, D., and Thurik, R. 2007. The effect of business regulations on nascent and young business entrepreneurship. *Small Business Economics*, 28(2-3): 171 – 186.
- Van Yperen, N.W. and Hagedoorn, M. 2003. Do high job demands increase intrinsic motivation or fatigue or both? The role of job control and job social support. *Academy of Management Journal*. 46 (3), 339–348.
- Verheul, I., Wennekers, S., Audretsch, D., and Thurik, R. 2002. An eclectic theory of entrepreneurship: Policies, institutions and culture. In D.B. Audretsch, A.R. Thurik, I. Verheul and S. Wennekers (eds.), *Entrepreneurship: Determinants and policy in a European-US comparison*: 1-71. Boston/Dordrecht: Kluwer.
- Warr, P. 2007. *Work, Happiness, and Unhappiness*. New York: Routledge.
- Weber, M. 1930. *The protestant ethic and the spirit of capitalism*. New York: The Citadel Press.
- Wennekers, S., Thurik, R., Van Stel, A., and Noorderhaven, N. 2007. Uncertainty avoidance and the rate of business ownership across 21 OECD countries, 1976-2004. *Journal of Evolutionary Economics*, 17(2): 133-160.

## Appendix

**Table 1: Summary Statistics and Correlation Matrix**

|    | Variable                                      | Mean | 1     | 2     | 3     | 4     | 5     | 6     | 7     | 8     | 9     | 10    | 11    | 12    | 13    | 14    | 15    | 16    | 17    | 18    | 19    |
|----|-----------------------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1  | Perception of Emergence                       | 0.34 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 2  | Disbandment                                   | 0.70 | -0.86 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 3  | Self-Efficacy                                 | 4.3  | 0.12  | -0.12 |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 4  | Motivation                                    | 4.1  | 0.03  | -0.06 | 0.45  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 5  | Performance Based Culture                     | 3.8  | 0.07  | -0.05 | 0.14  | 0.09  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 6  | Socially Supportive Institutional Environment | 3.1  | 0.04  | -0.05 | 0.08  | 0.13  | 0.36  |       |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 7  | Education                                     | 14.5 | 0.09  | -0.07 | -0.01 | -0.14 | 0.14  | 0.04  |       |       |       |       |       |       |       |       |       |       |       |       |       |
| 8  | Labor Market Experience                       | 12.9 | 0.16  | -0.14 | 0.04  | 0.02  | 0.10  | 0.00  | 0.18  |       |       |       |       |       |       |       |       |       |       |       |       |
| 9  | Entrepreneurial Experience                    | 0.57 | 0.09  | -0.12 | 0.03  | -0.01 | 0.03  | -0.06 | 0.13  | 0.24  |       |       |       |       |       |       |       |       |       |       |       |
| 10 | Market Newness                                | 1.64 | -0.04 | 0.06  | 0.00  | 0.02  | -0.03 | -0.01 | -0.02 | -0.07 | 0.10  |       |       |       |       |       |       |       |       |       |       |
| 11 | Competition                                   | 1.34 | 0.01  | -0.01 | -0.04 | -0.07 | 0.02  | -0.01 | -0.02 | -0.02 | -0.08 | -0.28 |       |       |       |       |       |       |       |       |       |
| 12 | Team Size                                     | 1.59 | 0.00  | 0.00  | 0.00  | 0.00  | 0.08  | 0.07  | 0.02  | -0.05 | 0.04  | 0.02  | -0.07 |       |       |       |       |       |       |       |       |
| 13 | Age                                           | 42.7 | 0.04  | -0.02 | -0.05 | -0.04 | 0.11  | 0.06  | 0.16  | 0.77  | 0.21  | -0.03 | -0.05 | -0.04 |       |       |       |       |       |       |       |
| 14 | Retail                                        | 0.13 | -0.02 | 0.03  | 0.01  | 0.00  | 0.04  | -0.05 | -0.03 | 0.00  | 0.03  | 0.06  | -0.08 | -0.03 | -0.01 |       |       |       |       |       |       |
| 15 | Consumer Services                             | 0.37 | 0.01  | -0.03 | -0.03 | -0.02 | 0.00  | 0.06  | -0.05 | -0.04 | -0.07 | 0.02  | 0.02  | -0.02 | 0.02  | -0.29 |       |       |       |       |       |
| 16 | Health                                        | 0.07 | -0.03 | 0.02  | 0.05  | -0.02 | -0.02 | 0.04  | 0.09  | -0.02 | -0.05 | 0.03  | -0.09 | -0.02 | 0.01  | -0.11 | -0.22 |       |       |       |       |
| 17 | Manufacturing                                 | 0.07 | 0.05  | -0.04 | 0.03  | -0.07 | 0.03  | -0.04 | 0.20  | 0.08  | 0.15  | 0.00  | -0.04 | -0.04 | 0.06  | -0.11 | -0.21 | -0.08 |       |       |       |
| 18 | Real Estate                                   | 0.08 | 0.05  | -0.01 | 0.00  | 0.01  | -0.03 | -0.02 | 0.05  | -0.02 | 0.03  | -0.09 | 0.13  | -0.02 | -0.06 | -0.11 | -0.22 | -0.08 | -0.08 |       |       |
| 19 | Consulting                                    | 0.11 | -0.05 | 0.07  | 0.03  | 0.05  | 0.00  | 0.02  | -0.09 | 0.05  | -0.02 | 0.01  | 0.03  | 0.02  | 0.00  | -0.14 | -0.27 | -0.10 | -0.10 | -0.10 |       |
| 20 | Other Industries                              | 0.16 | -0.01 | -0.03 | -0.05 | 0.03  | -0.03 | -0.03 | -0.08 | -0.01 | -0.01 | -0.03 | 0.03  | 0.10  | -0.03 | -0.17 | -0.34 | -0.13 | -0.12 | -0.13 | -0.16 |

Summary Statistics and correlation matrix are based on 590 observations. All correlations above 0.1 are significant at least at the 5% level.

**Table 2: Probit and Instrumental Variable Regression**

|                                                       | (1)                  | (2a)                                   | (2b)                                             | (3)                  | (4a)                                          | (4b)                                             |
|-------------------------------------------------------|----------------------|----------------------------------------|--------------------------------------------------|----------------------|-----------------------------------------------|--------------------------------------------------|
|                                                       | Standard<br>Probit   | IV-Probit<br>1st Stage<br>(motivation) | IV-Probit<br>2nd Stage<br>(venture<br>emergence) | Standard<br>Probit   | IV-Probit<br>1st Stage<br>(self-<br>efficacy) | IV-Probit<br>2nd Stage<br>(venture<br>emergence) |
| Self-Efficacy                                         |                      |                                        |                                                  | 0.245**<br>(0.033)   |                                               | 1.210***<br>(0.009)                              |
| Motivation                                            | 0.0870<br>(0.210)    |                                        | 0.725***<br>(0.008)                              |                      |                                               |                                                  |
| Performance<br>Based Culture                          | 0.105<br>(0.201)     | 0.114**<br>(0.012)                     |                                                  | 0.0912<br>(0.268)    | 0.0990***<br>(0.001)                          |                                                  |
| Socially Support-<br>ive Institutional<br>Environment | 0.0585<br>(0.437)    | 0.0984**<br>(0.024)                    |                                                  | 0.0627<br>(0.403)    | 0.0247<br>(0.333)                             |                                                  |
| Labor Market<br>Experience                            | 0.059***<br>(0.000)  | 0.020***<br>(0.007)                    | 0.037**<br>(0.045)                               | 0.057***<br>(0.000)  | 0.016***<br>(0.000)                           | 0.033*<br>(0.095)                                |
| Education                                             | 0.0165<br>(0.611)    | -0.0722***<br>(0.000)                  | 0.0615*<br>(0.068)                               | 0.0116<br>(0.720)    | -0.00833<br>(0.480)                           | 0.0180<br>(0.554)                                |
| Entrepreneurial<br>Experience                         | 0.0617<br>(0.373)    | 0.00527<br>(0.903)                     | 0.0500<br>(0.445)                                | 0.0606<br>(0.383)    | 0.0108<br>(0.677)                             | 0.0401<br>(0.548)                                |
| Market Newness                                        | -0.0774<br>(0.335)   | -0.0133<br>(0.786)                     | -0.0572<br>(0.455)                               | -0.0766<br>(0.341)   | -0.00614<br>(0.835)                           | -0.0608<br>(0.431)                               |
| Competition                                           | -0.0249<br>(0.737)   | -0.0767*<br>(0.091)                    | 0.0290<br>(0.689)                                | -0.0237<br>(0.748)   | -0.0276<br>(0.313)                            | 0.00664<br>(0.926)                               |
| Team Size                                             | 0.0189<br>(0.787)    | -0.0114<br>(0.789)                     | 0.0235<br>(0.720)                                | 0.0206<br>(0.769)    | -0.00876<br>(0.733)                           | 0.0279<br>(0.673)                                |
| Age                                                   | -0.028***<br>(0.000) | -0.014***<br>(0.004)                   | -0.015<br>(0.148)                                | -0.027***<br>(0.001) | -0.012***<br>(0.000)                          | -0.012<br>(0.330)                                |
| Retail                                                | -0.0789<br>(0.701)   | -0.0589<br>(0.639)                     | -0.0257<br>(0.895)                               | -0.0999<br>(0.628)   | 0.0723<br>(0.339)                             | -0.164<br>(0.406)                                |
| Consumer<br>Services                                  | 0.0901<br>(0.574)    | -0.0851<br>(0.384)                     | 0.132<br>(0.380)                                 | 0.0685<br>(0.670)    | 0.0691<br>(0.240)                             | -0.00684<br>(0.966)                              |
| Health                                                | -0.101<br>(0.690)    | -0.115<br>(0.448)                      | -0.0133<br>(0.956)                               | -0.150<br>(0.555)    | 0.178*<br>(0.052)                             | -0.304<br>(0.226)                                |
| Consulting                                            | 0.232<br>(0.353)     | -0.171<br>(0.277)                      | 0.309<br>(0.188)                                 | 0.193<br>(0.441)     | 0.106<br>(0.261)                              | 0.0617<br>(0.808)                                |
| Real<br>Estate/Finance                                | 0.106<br>(0.639)     | -0.0370<br>(0.793)                     | 0.115<br>(0.591)                                 | 0.101<br>(0.657)     | 0.0241<br>(0.776)                             | 0.0638<br>(0.769)                                |
| Manufacturing/C<br>onstruction                        | -0.290<br>(0.185)    | 0.00336<br>(0.979)                     | -0.249<br>(0.229)                                | -0.310<br>(0.158)    | 0.0971<br>(0.210)                             | -0.366*<br>(0.077)                               |
| Constant                                              | -1.068<br>(0.119)    | 4.903***<br>(0.000)                    | -4.094***<br>(0.008)                             | -1.697**<br>(0.029)  | 4.282***<br>(0.000)                           | -5.723***<br>(0.009)                             |
| Observations                                          | 590                  | 590                                    | 590                                              | 590                  | 590                                           | 590                                              |
| Wald Chi--<br>Square                                  | 42.28                |                                        | 63.90                                            | 45.30                |                                               | 62.35                                            |
| Wald P-Value                                          | 0.000                |                                        | 0.000                                            | 0.000                |                                               | 0.000                                            |

Notes.

Marginal Effects, *p*-values in parentheses, \* *p*<0.1, \*\* *p*<.05, \*\*\* *p*<.01

## Appendices – Measurement Scales Overview

Item numbers refer to the numbering in the PSEDII dataset.

### Appendix 1) Dependent Variable: Venture Emergence

A35: What was the first month and year in which monthly revenue was greater than all monthly expenses, including salaries for the owners active in managing the business?

A41: It would appear that you are (IF ONE OWNER: managing /IF TWO OR MORE OWNERS: helping to manage) an operating business -- one with sales and revenue greater than the ongoing expenses including salaries. Would you agree with this description of the current status?

### Appendix 2 and 3) Personal Characteristics

For all questions below, respondents were asked: "Would you say that you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree?" We reverse coded responses such that higher values reflect higher self-efficacy and motivation.

#### 2) Start-up Motivation (cf. Dimov, 2010, Cronbach's Alpha in current study .71)

Y9. There is no limit as to how long I would give maximum effort to establish this new business.

Y10. My personal philosophy is to "do whatever it takes" to establish my own business.

#### 3) Entrepreneurial self efficacy (Dimov, 2010, Cronbach's Alpha in current study .68)

Y4. Starting this new business is much more desirable than other career opportunities I have.

Y5. If I start this new business, it will help me achieve other important goals in my life.

Y6. Overall, my skills and abilities will help me start this new business.

Y7. My past experience will be very valuable in starting this new business.

Y8. I am confident I can put in the effort needed to start this new business.

## **Appendix 4 and 5) Community-level culture**

For all questions below, respondents were asked: “Now I would like to talk to you about the community in which you now live. Please tell me whether you agree or disagree with the following statements. Would you say that you strongly agree, agree, neither agree nor disagree, disagree, or strongly disagree?” We reverse coded responses such that higher values reflect stronger performance-based and socially-supportive culture as well as stronger self-efficacy and motivation.

### **4) Performance-based culture (Cronbach’s Alpha .84)**

- P 1. The social norms and culture of the community where you live are highly supportive of success achieved through one’s own personal efforts.
- P2. The social norms and culture of your community emphasize self-sufficiency, autonomy, and personal initiative.
- P3. The social norms and culture of your community encourage entrepreneurial risk-taking.
- P4. The social norms and culture of your community encourage creativity and innovativeness.
- P5. The social norms and culture of your community emphasize the responsibility that the individual has in managing his or her own life.

### **5) Socially-supportive institutional environment (Cronbach’s Alpha .66)**

- P7. State and local governments in your community provide good support for those starting new businesses.
- P8. Bankers and other investors in your community go out of their way to help new businesses get started.
- P9. Community groups provide good support for those starting new businesses.

## **Appendix 6 through 10) Control variables**

### **6) Formal Education (cf. Iacus et al., 2011; Davidsson and Honig, 2003):**

H6. What is the highest level of education (you have/[NAME<sup>a</sup>] has) completed -- (up to the eighth grade, some high school, high school degree, technical or vocational degree, some college, community college degree, a bachelor's degree, some graduate training, a master's degree, or a law degree, medical degree, or Doctorate?)

### **7) Industry Experience (cf. Bosma et al, 2004, Cronbach's Alpha in current study .72)**

H11. How many years of work experience (have you/has [NAME<sup>a</sup>]) had in the industry where this new business will compete?

H20. How many years of full time, paid work experience (have you/has [NAME<sup>a</sup>]) had?

H21. For how many years, if any, (have/has) (you/[NAME<sup>a</sup>]) had managerial, supervisory, or administrative responsibilities?

### **8) Entrepreneurial Experience (cf. Bosma et al, 2004, Cronbach's Alpha in current study .65)**

H12. How many other businesses (have you/has [NAME<sup>a</sup>]) helped to start as an owner or part-owner?

H13. Besides the new business discussed in this interview, how many other businesses (do you/does [NAME<sup>a</sup>]) own?

### **9) Competition (cf. Dahlqvist and Wiklund, 2011)**

S2. Right now, are there many, few, or no other businesses offering the same products or services to your potential customers?

### **10) Market Newness (cf. Dahlqvist and Wiklund, 2011)**

S1. Will all, some, or none of your potential customers consider this product or service new and unfamiliar?

<sup>a</sup>This question is repeated for each member of the start-up team.

**Figure 1:** Sample overview

