CONTEXTUAL INFLUENCES ON ENTREPRENEURIAL ACTIONS

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This is to certify that:

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Abstract

Research on entrepreneurial actions has thus far been dominated by individual-level and dispositional approaches. These approaches assume that individuals' entrepreneurial actions are regulated by individuals' enduring characteristics that operate in a similar way in all contexts and in total isolation with their surroundings. This assumption has continued to dominate research on entrepreneurial actions in spite of the widespread recognition of the fact that entrepreneurial actions are also influenced by contextual factors. The dispositional approach thus presents an under-socialized view of entrepreneurial opportunity creation and ignores that entrepreneurial process of opportunity discovery are strongly influenced by contextual factors, such as organisational environments, institutions, social reference groups, cultural orientations, environmental munificence. This thesis addresses this gap and contributes towards answering "*How do individuals' context influence entrepreneurial actions?"* We provide answer by extending McMullen and Shepherd's proposed theoretical model and argue that entrepreneurial actions depend upon *not only* an individual's personal feasibility and desirability considerations (McMullen and Shepherd 2006), *but also* upon the context within which the individual evaluates the consequences of those actions. In order to test and provide evidence in favour of this argument, an empirical design is proposed that comprises of three separate empirical studies, each of which considers the cross-level effects on entrepreneurial actions by combining the influences of individual-level as well contextual-level factors on those actions and offers explanations on the pertinent mechanisms through which an individual's context exercises a regulatory influence on entrepreneurial actions by individuals..

The thesis acknowledges and further consolidates the multi-level nature of entrepreneurial actions and considers cross-level effects by combining the influence of individual-level and contextual-level factors on entrepreneurial actions. A multi-level methodology has been developed and tested to bring forth the cross-level moderation effects of contextual factors that operate at a higher level on individual-level entrepreneurial actions. Three multi-level empirical studies feature in this thesis that elucidates the mechanisms through which an individual's context constitutes a regulatory influence on the feasibility and desirability to undertake entrepreneurial actions.

The first study examines the influence of prevailing norms in an individual's social reference group on individual-level entrepreneurial actions. The second empirical study

examines the influence of national-level cultural orientations on individual-level entrepreneurial actions and the third study investigates the influence of national-level cultural orientations on persistence in the entrepreneurial process. The third empirical study examines the influence of national-level cultural orientations on an individual's persistence into entrepreneurship.

Contents

Introduction 1
The Organisation of the Thesis 7
Definitions 9
Entrepreneurial Actions 12
Information processing – Search – Opportunity recognition/creation 12
Variance Inducing – Entry Decision – New venture Creation 15
Resource Mobilising – Growth seeking Behavior – Growth 15
Chapter 1: Feasibility Assessment and Entrepreneurial Actions 17
1.1 Self-efficacy and entrepreneurial actions 18
1.2 Cognition and entrepreneurial actions 19
Chapter 2: Desirability Assessment and Entrepreneurial Actions 24
2.1 Non-economic rationality 25
2.2 Economic rationality 27
Chapter 3: Institutions and Entrepreneurial Actions 31
3.1 Informal institutions and entrepreneurial actions 34
3.1.1 Social context and feasibility assessment of entrepreneurial actions 35
3.1.2 Social context and desirability assessment of entrepreneurial actions 38
3.1.3 Cultural context and feasibility assessment of entrepreneurial actions 39
3.1.4 Cultural context and desirability assessment of entrepreneurial actions 41
3.2 Formal institutions and entrepreneurial actions 42
3.2.1 Property rights protection regime 43
3.2.2 Rule of Law 44
3.2.3 Taxation 45
Chapter 4: Social Reference-Group as a Context and its Influence on Entrepreneurial Actions 47
4.1 Theory and Hypotheses 52
4.2 Methodology 57
4.3 Results 66
4.4 Conclusions 80
Chapter 5: National Cultural Orientations as a Context and its Influence on Entrepreneurial Actions 82
5.1 Theory and Hypotheses 85
5.2 Methodology 96

5.3 Results 102
5.4 Conclusions ..... 111~~110~~
Chapter 6: National Cultural Orientations as a Context and its Influence on Persistence in Entrepreneurship ..... 113~~112~~
6.1 Theory and Hypotheses ..... 117~~116~~
6.2 Methodology ..... 128~~127~~
6.3 Results ..... 133~~132~~
6.4 Conclusions ..... 139~~138~~
Chapter 7: Entrepreneurial Actions and the Transformation of Institutions ..... 141~~140~~
Chapter 8: Discussion and Contributions ..... 143~~142~~
References ..... 147~~146~~

List of Figures

Figure 1: McMullen and Shepherd's (2006) model of entrepreneurial action.....2

Figure 2: Empirical design.....3

Figure 3: Theoretical framework of entrepreneurial actions.....11

Figure 4: Schematic and manifestations of entrepreneurial actions.....16

Figure 5: Theoretical model of feasibility assessment and entrepreneurial actions.....23

Figure 6: Theoretical framework of desirability assessment and entrepreneurial actions.....29

Figure 7: Socially conditioned rationality for feasibility of entrepreneurial actions.....37

Figure 8: Socially conditioned rationality for desirability of entrepreneurial actions.....38

Figure 9: Mechanism of influence of formal institutions on entrepreneurial behaviors.....46

Figure 10: Theoretical model of the influence of social reference group on entrepreneurial behaviors……..51

Figure 11: Interaction between social reference group's fear of failure and individual's exit experience.....76

Figure 12: Compositions of social reference groups……78

Figure 13: Theoretical model of the influence of culture on entrepreneurial actions.....93

Figure 14: Theoretical model of the influence of culture on entry into different stages of entrepreneurship.....132

List of Tables

Table 1: Sample descriptive for the study of social norms on entrepreneurial actions……67

Table 2: Descriptive statistics of dependent variables, predictors and controls used in the study of social norms on entrepreneurial behaviors.....68

Table 3: Correlation matrix of individual-level variables in the study of social norms on entrepreneurial actions……...68

Table 4: Correlation matrix of social group-level variables in the study of social norms on entrepreneurial actions……...69

Table 5: Effects on individual-level entry into entrepreneurship……70

Table 6: Effects on individual-level entrepreneurial growth aspirations……71

Table 7: Descriptive summary of reference groups……77

Table 8: Comparison of regression estimates using different reference groups……..78

Table 9: Comparison of multi-level estimates with OLS and no selection (λ) models……79

Table 10: Collinearity diagnostics……80

Table 11: Sample descriptive for the study of culture on entrepreneurial actions……102

Table 12: Descriptive statistics of dependent variables, predictors and controls used in the study of culture on entrepreneurial behaviors.....109

Table 13: Correlation matrix of individual-level variables in the study of culture on entrepreneurial actions……...110

Table 14: Correlation matrix of national-level variables in the study of culture on entrepreneurial actions……...111

Table 15: Effects of culture on individual-level entry into entrepreneurship……113

Table 16: Effects of culture on individual-level growth aspirations……..116

Table 17: Collinearity diagnostics……..119

Table 18: Sample descriptive for the study of culture on persistence in entrepreneurship…140

Table 19: Sample descriptive by year for the study of culture on persistence in entrepreneurship……141

Table 20: Descriptive statistics of dependent variables, predictors and controls used in the study of culture and persistence in entrepreneurship……145

Table 21: Correlation matrix for the sample of nascent entrepreneurs.....145

Table 22: Correlation matrix for the sample of new entrepreneurs.....146

Table 23: Correlation matrix for the sample of established entrepreneurs.....146

Table 24: Correlation matrix of control variables for the sample of nascent entrepreneurs.....146

Table 25: Correlation matrix of control variables for the sample of new entrepreneurs.....147

Table 26: Correlation matrix of control variables for sample of established entrepreneurs.....147

Table 27: Effects on entry to various stages of entrepreneurship.....148

Table 28: Collienarity diagnostics.....150

Table 29: Williamson's four-level hierarchy of institutions and time to change.....155

Introduction

The bulk of received entrepreneurship literature focuses on *only* the individual. Most of the studies have remained confined within the purview of a single country and have employed data collected exclusively at the individual-level (Shaver and Scott 1992, Chen et al 1998, Kruger and Brazeal 1994, Begley and Boyd 1987, Gartner 1988, Thornton 1999, Sorensen 2000). This micro-level approach adopted in entrepreneurship research have therefore utilised information available only at the individual-level to estimate the outcomes of entrepreneurial actions by individuals. Recently though, country-level studies on entrepreneurship have started to appear. This macro-level approach employs country-level predictors to explicate national aggregate rates of entrepreneurial activities, for example, rate of new business entry, rates of established businesses, etc. (Stephen & Uhlaner, 2010; Uhlaner & Thurik, 2007; Wennekers et al., 2007, Klyver and Thornton 2010). Since research has predominantly been carried at either the micro-level or at the macro-level and seldom in unison, there remains a gap in our understanding of *how do context influence entrepreneurial actions by individuals?* There have been only few studies to consider cross-level effects on entrepreneurial actions at the individual-level. So why is the study of cross-level effects important?

To provide an answer, one must understand that entrepreneurship is fundamentally an individual-level phenomenon that entails the pursuit of opportunity by individuals (or teams of individuals) (Shane and Venkataraman 2000, Shane 2000, Venkataraman 1997). However, individuals who have foresight are aware of the consequences of their actions, both economic as well as social. These consequences are moderated by context. For example, the protection of intellectual property rights might affect the distribution of returns to opportunity pursuit by individuals (e.g. Autio & Acs, 2010; Henrekson & Douhan, 2009) or for that matter, a country's culture might affect the individual's social standing in the event of entrepreneurial entry, success, or failure (e.g. Wagner & Sternberg, 2004). The individual's context, therefore, influences the economic and social trade-offs associated with alternative courses of action, such as the choice between self-employment and employed work.

The influence of an individual's context on his or her entrepreneurial action is duly recognised in the received literature. For example, Phan (2004, p 620) remarks: "One cannot fully understand, for example, opportunity recognition as an emergence phenomenon, without being sensitive to its higher contexts – culture, institutional arrangements, and

political-economic exigencies". Reverberating with the same idea, Shane and Venkataraman 2000 posit that: "[It is…] improbable that entrepreneurship can be explained solely by reference to the characteristics of certain people independent of the situations in which they find themselves". In spite of this recognition, only few studies, however, have explicitly considered cross-level effects by combining individual- and context-level data. Micro-level analyses have continued to erroneously employ individual-level operationalization of contextual factors. Macro-level analyses have persisted with the use of aggregate measures of entrepreneurial activities, ignoring the fact that entrepreneurship although influenced by context is still an individual-level endeavour. In this thesis, an attempt has thus been made to explicate the influence of context on entrepreneurial actions by individuals.

This thesis positions the theory towards explaining entrepreneurial actions in line with the theoretical model proposed by McMullen and Shepherd (2006) (shown in Figure 1 below) and holds promise to extend it further to accommodate the influence of cross-level effects of context on those actions. McMullen and Shepherd (2006) begin by recognising that there almost always exists opportunities in an individual's context. They term this as "third-person opportunity". Not all individuals would recognise these opportunities, let alone act upon them. However, individuals who recognise them and subsequently engage in entrepreneurial actions to pursue those opportunities are the ones that draw upon the outcomes of their *feasibility* and *desirability* assessments of pursuing those actions. These actionable opportunities then become what McMullen and Shepherd (2006) phrase as "first-person opportunity". Individuals simultaneously look to social norms and attitudes as well as prevailing cultural practices for cues on the feasibility and desirability of entrepreneurial actions. Thus, context matters for opportunity evaluation alongside with, and also beyond economic considerations.

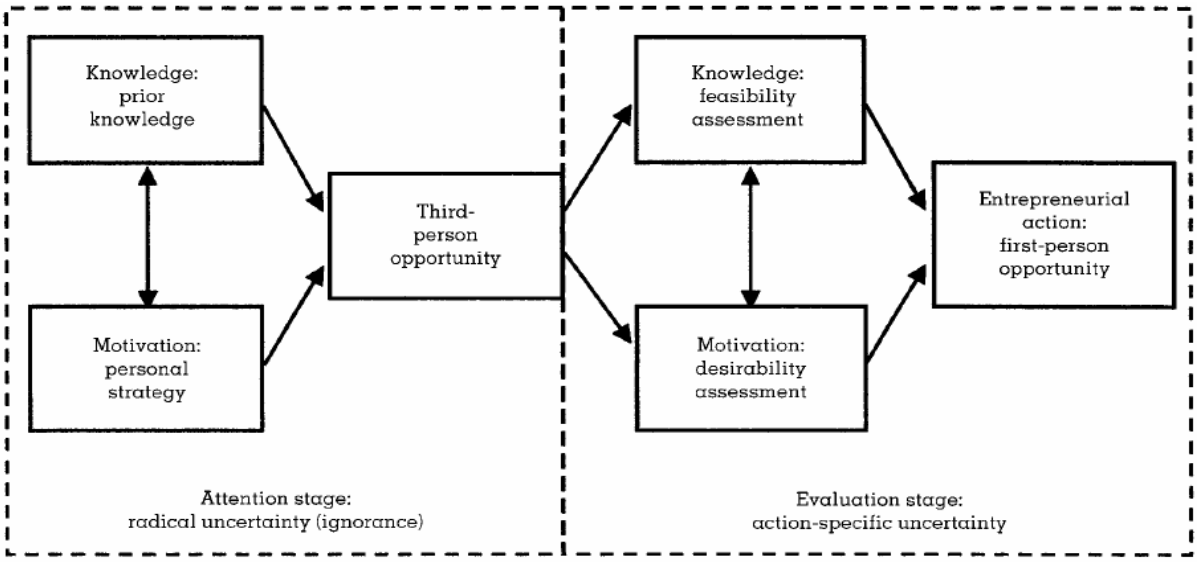


Figure 1 McMullen and Shepherd's (2006) model of entrepreneurial action

From this observation follows that a given third-person opportunity (opportunity for someone) may translate differently to a first-person opportunity (opportunity for me), depending upon *not only* an individual's personal feasibility and desirability considerations (McMullen and Shepherd 2006), *but also* upon the context within which the first-person evaluation is performed. In order to test and provide evidence in favour of this argument, an empirical design is proposed that comprises of three separate empirical studies, each of which considers cross-level effects on entrepreneurial actions by combining the influences of individual-level as well contextual-level factors on those actions. The schematic representation of the empirical design is shown in Figure 2 below.

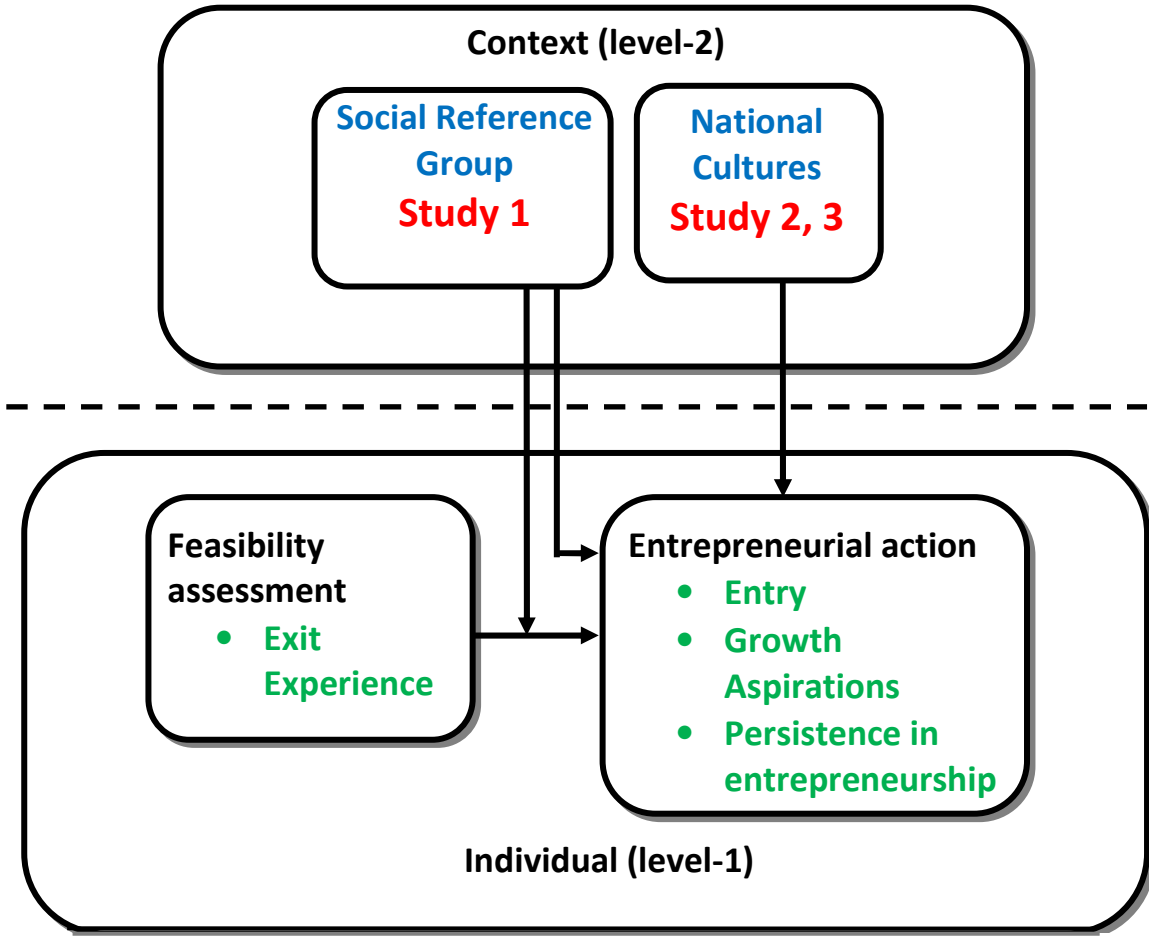


Figure 2 Empirical design

In each of the three studies, entrepreneurial actions by individuals have been operationalized by either entry into entrepreneurship, growth aspirations or persistence in entrepreneurship. An individual's exit experience from previous entrepreneurial efforts has been used as a proxy for feasibility of pursuing entrepreneurial actions in Study 1. An individual's context is operationalized by social reference group in Study 1 and by national-level cultures in Studies 2 and 3 respectively. While all of the three studies consider the cross-level direct effects of context on individual-level entrepreneurial actions, Study 1 also accommodates for the cross-level moderating effect on those actions.

Study 1 examines the influence of prevailing norms in an individual's social reference group and how negative group-attitudes towards entrepreneurial failures moderate the effect of previous exit experience on entrepreneurial growth aspirations. It integrates psychological and sociological theories of social norms and entrepreneurship into a multi-level model where

entrepreneurial agents self-select to engage in growth-oriented behavior based on their exposure to social norms and learning from previous entrepreneurial experience. Multi-level selection analyses reveal that while exit experience from previous entrepreneurial efforts - symbolizing human capital and thus a measure of an individual's feasibility of entrepreneurial actions - influence entrepreneurial growth aspirations, social norms prevailing in an individual's social reference group simultaneously influence growth aspirations by moderating the influence of the prior exit experience.

Study 2 examines the influence of country-level cultural orientations on entry into entrepreneurship and entrepreneurial growth aspirations. It was found that while societal-level institutional collectivism associated *negatively* with entrepreneurial entry suggesting that individualistic orientations encourage variance-inducing acts of entry, it associated *positively* with individual-level entrepreneurial growth aspirations, suggesting that institutional collectivism encourages risk-taking by facilitating societal risk-sharing and promoting collective endeavours towards resource-mobilising behaviours.

Study 3 examines the influence of country-level cultural orientations on persistence in entrepreneurship. Utilising a process based theory of entrepreneurship the study first establishes entrepreneurship to be comprised of multiple stages and subsequently shows how cultural norms influence the entrepreneurial process in dissimilar ways at these different stages. The findings claim to challenge two popularly held notions that cultural norms have similar effects on all stages of the entrepreneurial process and that individualistic societies are the most entrepreneurial. While collectivist societies tend to inhibit variance-inducing act of entrepreneurial-entry, they enhance entrepreneurial risk-taking by collective risk-sharing and resource-mobilizing acts in subsequent stages of entrepreneurship. By looking at the influence of cultural norms on the stages, this study accommodates for the possibility that national culture could exercise non-static as well as a more lasting influence on individual-level entrepreneurial actions, and thus, it may influence, for example, the persistence of individuals in the entrepreneurial process.

These three studies, thus, provide a timely response to the repeated calls for the need for suitable methodological techniques by developing and testing multi-level analysis methods that are capable of estimating the combined effect of individual-level and contextual-level factors on individual-level entrepreneurial actions. These studies have been reported in details in subsequent chapters of this thesis (Chapter 4: page 46 – 85, Chapter 5: page 86 – 123 and

Chapter 6: page 124 – 153). A summary of the three studies have been provided in Table 1 below.

Table 1 Summary of the empirical studies undertaken in this thesis

STUDIES	CONTEXTUAL INFLUENCES ON ENTREPRENEURIAL ACTIONS
1	Examines the influence of prevailing norms in an individual's social reference group and how do negative attitudes towards entrepreneurial failures moderate the effect of previous exit experience on entrepreneurial growth aspirations
2	Examines the influence of country-level cultural orientations on entry into entrepreneurship and entrepreneurial growth aspirations
3	Examines the influence of country-level cultural orientations on the persistence in entrepreneurship

The Organisation of the Thesis

Individuals make decisions to perform entrepreneurial actions that are contingent upon the environment in which they operate. Hence, considerations of contextual factors as determinants of entrepreneurial actions become all the more critical. This thesis attempts to present a comprehensive view that looks into the influence of individual-level as well as contextual-level determinants of individuals' entrepreneurial actions. The thesis comprises of eight chapters.

In Chapter 1 titled "Feasibility Assessment and Entrepreneurial Actions", drawing upon the supply-side perspectives of entrepreneurship, I articulate on the individual-level attributes that influence an individual's *feasibility* assessment towards undertaking entrepreneurial actions.

In Chapter 2 titled "Desirability Assessment and Entrepreneurial Actions", while still drawing upon the supply-side perspectives of entrepreneurship, I articulate on the individual-level economic and non-economic rationalities that influence an individual's *desirability* assessment towards undertaking entrepreneurial actions. I propose a theory of utility maximization that forms the basis of an individuals' desirability to pursue entrepreneurial actions.

In Chapter 3 titled "Institutions and Entrepreneurial Actions", while drawing upon the demand-side perspectives of entrepreneurship, I present a general discussion on the links between institutions and entrepreneurship.

In Chapter 4 titled "Social Reference-Group as a Context and its Influence on Entrepreneurial Actions", while still focussing on the demand-side perspectives of entrepreneurship, I examine the influence of prevailing norms in an individual's social reference group and how negative group-attitudes towards entrepreneurial failures moderate the effect of previous exit experience on entrepreneurial growth aspirations

In Chapter 5 titled "National Cultural Orientations as a Context and its Influence on Entrepreneurial Actions", while still focussing on the demand-side perspectives of entrepreneurship; I examine the influence of country-level cultural orientations on entry into entrepreneurship and entrepreneurial growth aspirations

In Chapter 6 titled “National Cultural Orientations as a Context and its Influence on Persistence in Entrepreneurship”, I examine the influence of country-level cultural orientations on persistence in entrepreneurship.

In Chapter 7 titled “Entrepreneurial Actions and the Transformation of Institutions”, I discuss how entrepreneurial actions sustain a positive feedback mechanism that gradually brings about changes in institutions that subsequently triggers more entrepreneurial actions.

In Chapter 8 titled “Contributions”, I present the overall contribution of my thesis towards theory development. Chapter 9 titled “Conclusion and Discussion” concludes the thesis.

Definitions

The *supply-side* perspective of entrepreneurship focuses on the availability of *"suitable"* individuals to occupy entrepreneurial roles (Thornton 1999). In filling these roles, an entrepreneur is the one that possesses unique personality attributes, such as innovativeness, risk taking propensity, etc., or the one that occupies positions such as small business manager, owner, new venture creator, etc (McMullen and Shepherd 2006). An entrepreneur could also be viewed as an organisational or economic function that is filled by an individual. In doing so, then, the individual carefully considers the economic pay off associated with opportunity that entails the pursuit of entrepreneurship. The *demand-side* perspective on the other hand emphasizes the idea that the entrepreneur is one who in addition to his personal evaluation of the prospects of exploiting an opportunity also responds to the opportunities, constraints and trade-offs in his context while contemplating the creation of new business organisations. In this research, the main objective is to combine the supply and demand side perspectives of entrepreneurship and simultaneously look into the combined influence of individual-level and contextual-level factors on an individual's pursuit of entrepreneurial actions. Hence, definitions of entrepreneurship, entrepreneurial actions and context are in order.

We start from the notion that entrepreneurship is an opportunity seeking behavior that operates at multiple levels and is both an *economically* as well as a *contextually consequential* behavior. We draw inspirations from Hebert and Link's (1988) portrayal of an entrepreneur as the one who responds to and creates changes through his entrepreneurial actions. In this study, e*ntrepreneurial action* refers to a certain behavior in response to a decision taken in favour of the pursuit of entrepreneurship. Hence, entrepreneurial action is an entrepreneurial behavior performed by the entrepreneur. This definition of entrepreneurial action is coherent with the social science perspectives that view entrepreneurship as a behavioural process rather than a single event entry (Aldrich 1999, Santarelli and Vivarelli 2007). At each of the steps involved in the entrepreneurial process, an entrepreneur makes careful assessment of the *feasibility, desirability and motivations* to pursue opportunities further (McMullen and Shepherd 2006). While an individual's feasibility assessment of undertaking certain entrepreneurial actions is drawn from his knowledge base, acquired skills, entrepreneurial self-efficacy, cognition, etc., his desirability assessment of such actions are drawn from two distinct set of rationales: *economic* and *non-economic rationales.* Both these rationales concern an individual's motivations for utility maximization such that these

motivations, then, become the main driver of the desirability to undertake entrepreneurial actions. In addition to factors contributed solely by the individual, his or her *context* too drives an individual's desirability to undertake such entrepreneurial actions. Before introducing my theoretical model, a brief description of an individual's context is in order.

The theory on organisational behaviour has given a fair deal of attention in articulating how context affects organisational behaviour. The idea of "contextualisation" has been addressed too. Rousseau and Fried define: "Contextualization entails linking observations to a set of relevant facts, events, or points of view that make possible research and theory that form part of a larger whole" (2001: 1). Cappelli and Sherer depict context as "the surroundings associated with phenomena which help to illuminate that [sic] phenomena, typically factors associated with units of analysis above those expressly under investigation" (1991: 56). Mowday and Sutton characterize context as "stimuli and phenomena that surround and thus exist in the environment external to the individual, most often at a different level of analysis" (1993: 198). Johns define context as "situational opportunities and constraints that affect the occurrence and meaning of organizational behavior as well as functional relationships between variables" (2006: 386).

Although the above definitions of context were designed to apply within the purview of organisations, they are far reaching and, as would be ascertained throughout this study, they hold true in settings designed for research in entrepreneurship also. Specifically, two forms of institutions are considered as representation of an individual's context: *formal* and *informal* (Aldrich 1990, Thornton 1999, Anderson and Miller 2003, Hofstede 1980, Baumol 1990, Sobel 2008, Audretsch et al 2007). Two pertinent forms of informal institutions (a) social context and (b) cultural context: would be considered. Codified rules and regulations would accommodate an individual's formal institutional context. This study would look into how institutions, representing an individual's context influence his or her motivations to undertake certain entrepreneurial actions. Particularly significant for research in entrepreneurship, therefore, is the consideration of cross-level direct and moderation influence of context on individual-level entrepreneurial actions. In other words, it would be particularly insightful to look into how an individual's desirability to engage into certain entrepreneurial actions is contingent upon the context in which such actions are undertaken. In the following, I propose the theoretical model of entrepreneurial actions.

Individuals undertake entrepreneurial actions in response to decisions taken based upon the outcome of their feasibility and desirability assessments of those actions. An individual's assessment of his or her knowledge, skills, self-efficacy, ability, cognition, etc determines whether or not performing those actions are feasible. Whether or not, one will engage in entrepreneurial actions could also be a decision that depends upon the outcome of desirability assessment – whether one is motivated enough to act (McMullen and Shepherd 2006). Economic as well non-economic rationality could shape these motivations. These motivations, in addition to being shaped by individual's economic and non-economic rationality considerations, could also be contingent upon the context in which the individual acts. Hence, factors operating at multiple levels drive entrepreneurial actions. A simplistic theoretical frame is shown in Figure 2 below.

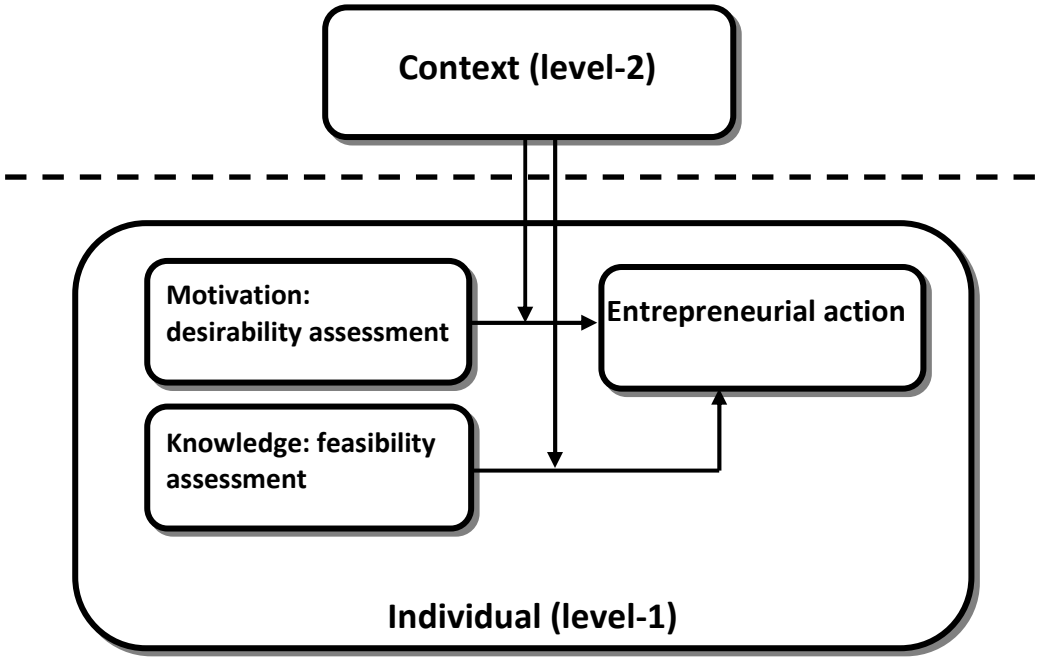


Figure 3 Theoretical framework of entrepreneurial action

Entrepreneurial Actions

From the outset of this section, the definition of entrepreneurial action has been presented. Entrepreneurial actions has been defined as: "Individuals' behavior that are shaped by entrepreneurial motivations and driven by individual-level processes those are oriented to meet desired entrepreneurial outcomes"

The foregoing definition is broad and hence open to vagueness. Entrepreneurial actions could be better understood by focusing on their manifestations. Three pertinent manifestations are proposed here: (a) *entrepreneurial opportunity search*; (b) *entrepreneurial entry* and; (c) *growth seeking behavior*. A corresponding *individual-level process* is linked to each of the three manifestations and each of the processes yield an *outcome*. This results in three unique sets of mechanisms that link a process, a manifestation of entrepreneurial action and the corresponding outcome. They are sets identified as: (a) *information processing – search – opportunity recognition/creation*; (b) *variance inducing – entrepreneurial entry – venture creation* and; (c) *resource mobilising – growth seeking – growth*. A proposed theoretical framework combining the *process-action-outcome* mechanisms is shown in Figure 3 below. A discussion of the key elements of this theoretical framework is what follows next.

Information processing – Search – Opportunity recognition/creation

Cooper et al., (1995: 108) remarks "Gaining insight into any systematic tendencies exhibited by entrepreneurs in gathering information would add to the understanding of entrepreneurial behavior" such that a significant portion of the processes involved in new venture creation involves searching and interpreting information. Searching for entrepreneurial opportunities based upon the extent to which information is being gathered and subsequently being processed is identified as a fundamental aspect of individuals' entrepreneurial actions. Austrian researchers like Kirzner and Hayek have led stress on the importance of information towards opportunity recognition. Kirzner (1973) suggests that the central role of the entrepreneur is to recognize and exploit opportunities by capitalizing on the economic disequilibria, through recognising information that others fail to intercept. This results from the fact that markets are composed of players who possess different information (Hayek 1945), such that opportunity discovery then becomes a function of the distribution of information in the society. Differences in the extent of such information allow some to identify opportunities that others cannot spot. Thus the foregoing Austrian approach assumes

that information about opportunities rather than basic individual-level attribute is the sole determinant of who becomes an entrepreneur.

Several individual-level factors too, contribute towards how and why individuals' differ in the extent to which they perceive, gather and process information. A review of the extant literature in entrepreneurship reveals individuals' human capital, often residing within their prior knowledge and experience (Shane 2000) and cognitive biases and heuristics (Busenitz and Barney 1997, Fiet 2007) as the main attributes that facilitates their search for entrepreneurial opportunities. The assumption that prior knowledge leads to opportunity discovery is based upon the fact that people recognise those opportunities associated with the information that they already possess (Venkataraman 1997). Not only then information interpreting, comprehending and processing becomes easier owing to the fact that similar information has once already been processed, but it also facilitates search for opportunities based upon information that had previously led to opportunity recognition already. Individuals' unique life experiences may contribute towards the repertoire of information they would have gathered and processed allowing different stocks of information available to different people (Shane, 2000). Consequently, at any given point of time, only some people and not others would have gathered and processed any information that would have facilitated their efforts to search for entrepreneurial opportunities. Venkataraman (1997) identifies that individuals' idiosyncratic prior knowledge creates a "knowledge corridor" that facilitate their search for entrepreneurial opportunities. Thus prior experience is important in information processing leading to a successful search for opportunities, because it clearly defines the domain within which the individual searches and benefits from acquired knowledge.

Cooper et al (1995) extended this idea to look into how previous entrepreneurial experience influenced the process of information gathering. They proposed that those with prior experience would engage in a more extensive search because of their richer schema and their greater awareness of what was needed. This view that engages entrepreneurs' schema and awareness thus explains the process of information gathering based upon the cognitive factors of schema and awareness. In conclusion, they argue that prior experience, bounded rationality, richer schema and awareness were the underlying factors that influenced the process of information gathering that in turn influenced the extent and pattern of search for entrepreneurial opportunities. Extending the cognitive perspective, Fiet (2007: 593) defines

searching as "*searching* is a bounded attempt to find signals related to a specific set of criteria" and signal as "A *signal* is new information that changes our understanding of about the future, particularly as it relates to the creation of new wealth". Utilising a cognitive perspective of the entrepreneur, many researchers have considered the entrepreneurs' *alertness* as the primary determinant for opportunity recognition and its discovery such that new venture creation could be looked upon as something that has occurred accidentally (Baumol 1993, Kirzner 1979, 1997). Fiet (2007) proposes another cognitive perspective that assists entrepreneurs in "the search of known information sources". This theory accommodates an individual's *constrained, systematic search* which maximizes search outcomes and which acts as the main determinant of opportunity recognition and its discovery. Fiet (2007) identifies the importance of information channel from which entrepreneurs select information for searching opportunities. He defines "Information channels are low-cost sources of information compared to random scanning or the cost of not looking at all. A starting point for individuals to identify their own information channels is to begin with considering what they already know." Fiet (2007) claims that the success of entrepreneurs could result from searching information channel that they already know.

The answers to "Why do some persons but not others recognize opportunities?" was also addressed by Baron (2004) based upon cognitive perspectives. Baron (2004) proposes four cognitive factors that could answer this. First, the cognitive aspect of an entrepreneurs' basic perceptual process – wherein entrepreneurs are those individuals who are more proficient at *object or pattern recognition* (Matlin, 2002) as compared to others. Second, drawing upon Swets' (1992) *signal detection* theory, Baron (2004) suggests that entrepreneurs are individuals who recognize opportunities and who are more proficient in distinguishing "hits" from "false alarms". Third, Baron (2004) reverts to the *regulatory focus theory* proposed by Brockner et al (2004) and suggests that entrepreneurs are those individuals who are adept at recognising viable opportunities and who in the process of opportunity recognition show mixed patterns of *promotion and* prevention. Finally, Baron (2004) proposes that it is the enhanced *entrepreneurial alertness schema* in certain individuals that allow them to recognise opportunities than others. These cognitive biases and heuristics assist entrepreneurs to intercept, comprehend and process useful information that subsequently influence their search for opportunities towards new venture creation.

Entrepreneurial search identified as one of the manifestations of entrepreneurial actions yields a direct outcome of entrepreneurial opportunity recognition. Search however, also facilitates indirect outcomes. The extent, pattern and suitability of the information processed during search also influences other entrepreneurial actions, such as the decision to make an entrepreneurial entry and/or entrepreneurial growth aspirations. In other words, the effects of search are not just immediate and confined to only opportunity recognition, but are far reaching affecting the entrepreneurial actions often associated with the subsequent stages of entrepreneurial process, such as, entry and growth. Combined, this is shown in Figure 3 below.

Variance Inducing – Entry Decision – New venture Creation

Entrepreneurship involves acting in the face of uncertainty. The choices that entrepreneurs make often involve accepting uncertainty with respect to financial well-being, psychic well-being, career security and family relations (Atkinson 1974). Individuals that have high achievement motivations prefer activities of intermediate risk because the risk associated presents them with challenges to complete those tasks (Atkinson 1957). Entrepreneurs make a strategic career choice where they make economic trade-offs against standard wage employments. This raises the opportunity cost of entering into entrepreneurship. Hence, entrepreneurs plunge into something that the majority of the population choose to avoid. In this way entrepreneurs induce variance amongst the population when it comes to making a strategic choice of entry into entrepreneurship. Put differently, the entrepreneurial function of variance induction influences the entrepreneurial action of entry. The outcome of such an action is embodied within new venture creation and innovation. Entry decision subsequently influences behaviors of entrepreneurial growth aspirations. This mechanism is shown in Figure 3 below.

Resource Mobilising – Growth seeking Behavior – Growth

Entrepreneurial actions of search and entry decision affect entrepreneurs' growth seeking behaviors. Once, suitable opportunities are searched and a decision towards an entrepreneurial entry has been made, entrepreneurs mobilise available resources towards establishing the foundations of the ventures that they have created. Subsequent to this survival phase, resources are mobilised towards realising growth. Entrepreneurial growth

aspirations influence the disbursing of resources towards evolving a well defined organisational structure, carefully reducing the risk of failure. In the growth phase of the entrepreneurial process, entrepreneurs are mainly driven by the motivations to maximize economic utility and realise the returns to taking risks and opportunity costs. Hence, resources are mobilised in a manner such that utility is maximized. Utility maximization during growth phase often results in innovation and high growth, high impact entrepreneurship. This is shown in Figure 3 below.

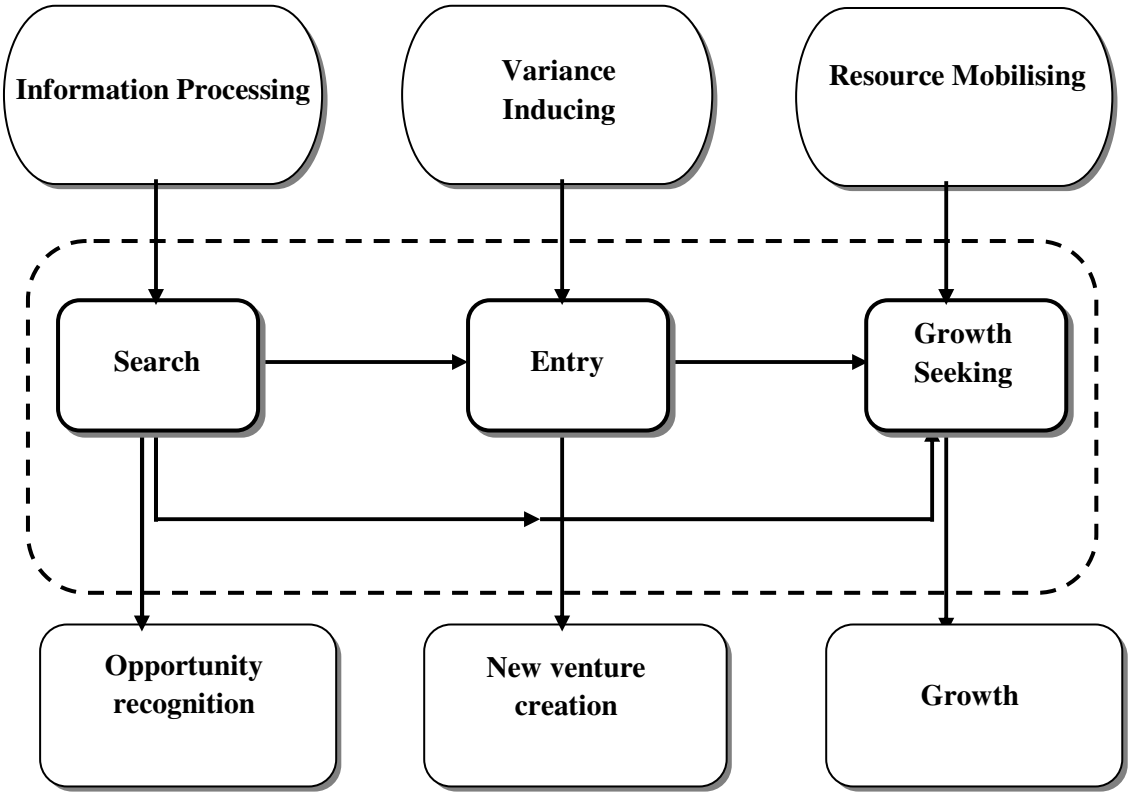


Figure 4 Schematic and manifestations of entrepreneurial action

Chapter 1: Feasibility Assessment and Entrepreneurial Actions

The *supply-side* perspective of entrepreneurship focuses on the availability of *"suitable"* and *"actionable"* individuals to occupy entrepreneurial roles (Thornton 1999). These enterprising individuals possess unique attributes that allows entrepreneurial ideas to be put into action. They evaluate entrepreneurial opportunities and consider the economic feasibility of the pursuit of those opportunities. Based upon the feasibility assessment, they make a decision to embark into performing certain entrepreneurial actions. For an individual to pursue entrepreneurial actions, the individual needs to consider not only the economic payoff of the entrepreneurial action, but also, the social consequences. From this observation follows that a given third-person opportunity (opportunity for someone) may translate differently to a first-person opportunity (opportunity for me), depending on the social context within which the first-person evaluation is performed (McMullen and Shepherd 2006). Hence, a first-person evaluation of opportunities and the economic feasibility of deciding to perform entrepreneurial actions rest in part on the individual and in part on the contextual factors in which the focal individual operates.

Theories of entrepreneurship in economics that have focused on the supply side perspective have mainly concentrated on the roles of human capital and risk aversion (Parker 2005). Supply side theories of entrepreneurship in sociology have focused on processes of social mobility (Carroll and Mosakowski 1987). Further, entrepreneurship research has focused on individuals' internal motivation or entrepreneurial orientation (Lumpkin and Dess 1996, Busenitz et al 2003). While the first two streams of theory concern individuals' feasibility to pursue entrepreneurial actions, the third stream mainly explains their desirability to pursue those actions. In this chapter, I draw upon the first two streams of theory and articulate on the individual-level attributes that influences an individual's perceived feasibility of entrepreneurial actions. In the next chapter, I draw upon the third stream of theory and articulate on the contextual-level factors that influences an individual's desirability of entrepreneurial actions.

An individual's decision to pursue any course of actions rests deeply within his or her own assessment of the feasibility to perform those actions. Organisational psychology theories recognise two types of models – static content model and dynamic process-oriented cognitive model - that account for an individual's feasibility considerations towards performing specific actions. The static content model deals with individuals' innate characteristics,

whereas the dynamic process-oriented cognitive models deals with individuals' attitudes and beliefs and how they influence intentions and actions, e.g., expectancy, self-efficacy, perceived feasibility. While individuals' innate characteristics have long been recognised to be associated with entrepreneurship, they have now been discredited owing to mixed findings and inconclusive causal relationships with entrepreneurial actions. During recent years though, some credibility have been associated with the dynamic process-oriented cognitive models in explicating why some individuals and not others are considered more feasible to pursue entrepreneurial actions. The two most prominent factors that drive an individual's feasibility towards performing entrepreneurial actions are: perceived *self-efficacy* and *cognition*. These are discussed in details in the following section.

1.1 Self-efficacy and entrepreneurial actions

Self-efficacy is a broad social cognitive concept which includes an individual's estimate of his or her capabilities to mobilize motivations, cognitive resources, and courses of action required to exercise control over events (Bandura 1986). Self-efficacy is a self-regulatory motivational variable (Locke and Baum, 2007) that is "concerned with judgments of how well one can execute a course of action required to deal with prospective situations" (Bandura 1982: 122) and "beliefs in one's capabilities to mobilize the motivation, cognitive resources and course of action needed to meet given situational demands" (Woods and Bandura, 1989: 370). Self-efficacy thus becomes a task specific intrinsic self-confidence within an individual (Bandura 1997, Shane et al 2003). This self-confidence motivates individuals towards entrepreneurial roles.

Entrepreneurial self-efficacy refers specifically to an individual's belief that he or she will be able to succeed as an entrepreneur (Chen et al 1998, Krueger and Brazeal 1994). Entrepreneurial intentions are influenced by enactment mastery experiences, which are reflected in an individual's entrepreneurial self-efficacy beliefs (Bandura 1986). When forming the intention to perform a given entrepreneurial act (such as developing a new venture), individuals are influenced by their attitudes to and perceptions of potential consequences, as well as their perception of group attitudes and their self-efficacy (Zhao et al 2005). Self-efficacy enhances the perceived feasibility of entrepreneurial actions and is therefore vital for the formation of entrepreneurial growth intentions (Ajzen 1991, Krueger et al 2000).

From the theory of self-efficacy it follows that individuals who believe that they will succeed in establishing and developing a firm will exhibit higher levels of entrepreneurial ambition. Shane et al (2003) remark "An individual with high self-efficacy for a given task will exert more effort for a greater length of time, persist through setbacks, set and accept higher goals, and develop better plans and strategies for the task. A person with high self-efficacy will also take negative feedback in a more positive manner and use that feedback to improve their performance. These attributes of self-efficacy may be important to the entrepreneurial process because these situations are often ambiguous ones in which effort, persistence, and planning is important." Vroom's (1964) expectancy framework conceptualises motivations behind entrepreneurial intentions and behaviors as the product of expectancy, instrumentality and valence, where expectancy is analogous to measures such as perceived feasibility and self-efficacy.

Drawing from one's acquired skills and knowledge, ability and confidence, an individual's perceived self-efficacy then becomes a measure of his or her feasibility to perform a given entrepreneurial action.

1.2 Cognition and entrepreneurial actions

By definition, entrepreneurial action refers to a certain behavior in response to a judgemental decision taken in favour of the pursuit of entrepreneurship (McMullen and Shepherd 2006). Entrepreneurial cognition has been shown to be useful in explaining new-venture creation decisions (Mitchell et al 2000). Mitchell et al define entrepreneurial cognition as: "the knowledge structures that people use to make assessments, judgements or decisions involving opportunity evaluation and venture creation and growth (2002: 97). The two focal elements of this cognitive perspective are: knowledge structures, which could either be heuristics or scripted and; decision making that involves assessment and judgement (Mitchell et al 2007). The cognitive view thus treats entrepreneurship as "a way of thinking" whereupon entrepreneurs draw upon knowledge structures (either heuristics or scripted) that assists them in making decisions pertaining to performing entrepreneurial actions (Mitchell et al 2002).

Cognitive heuristics are an inherent part of individuals' characteristics that explains why entrepreneurs think in certain ways that are different from the rest of the population. Baron (2004) asserts that a cognitive perspective may provide important insights into explaining key

elements of the entrepreneurial process. Baron (2004) proposes the answers to three pertinent questions: "Why do some persons but not others choose to become entrepreneurs?" "Why do some persons but not others recognize opportunities?" and "Why are some entrepreneurs more successful than others?" based upon differences in individuals' basic cognitive processes (thinking, deciding, planning, etc). Baron (2004) suggests that the answer to the first question could be addressed if it is to be believed that entrepreneurs have a greater susceptibility to cognitive biases. For example, entrepreneurs could have a strong optimistic bias – an enhanced tendency to expect things to turn out well (Shepperd et al 1996) or the planning fallacy – the tendency to believe that more could be achieved in a given period of time than one could actually complete (Beuhler et al 1994) or affect infusion – the tendency of affective states to strongly influence ones decisions (Forgas 1995). Combined this could lead entrepreneurs to anticipate favourable outcomes to a greater extent than is feasible and justified and might infuse the belief that the likelihood of experiencing positive outcomes as much higher than it actually is. Kahneman and Lovallo (1994) have observed that entrepreneurs do not have a higher propensity or tolerance for risk as compared to others, but because of inherent cognitive tendencies (e.g., an inflated illusion of control; Simon et al 2001) existing risks are perceived as smaller than they actually are. This could be the reason that could contribute significantly to their willingness to "take the plunge" and create a new venture. The process leading to new venture creations almost always involves "opportunity recognition" as a key element.

The answers to "Why do some persons but not others recognize opportunities?" could also be addressed based upon cognitive perspectives. Baron (2004) proposes four cognitive factors that could answer this. First, the cognitive aspect of an entrepreneurs' basic perceptual process – wherein entrepreneurs are those individuals who are more proficient at *object or pattern recognition* (Matlin 2002) as compared to others. Second, drawing upon Swets' (1992) *signal detection* theory, Baron (2004) suggests that entrepreneurs are individuals who recognize opportunities and who are more proficient in distinguishing "hits" from "false alarms". Third, Baron (2004) reverts to the *regulatory focus theory* proposed by Brockner et al, (2004) and suggests that entrepreneurs are those individuals who are adept at recognising viable opportunities and who in the process of opportunity recognition show mixed patterns of *promotion and* prevention. Finally, Baron (2004) proposes that it is the enhanced *entrepreneurial alertness schema* in certain individuals that allow them to recognise opportunities than others. Collectively, these four cognitive factors do consolidate the fact

that cognitive factors could also play a vital role in explaining entrepreneurial activities and behaviors.

Entrepreneurs also draw upon their cognitive heuristics to put together resources and information in new combinations (Shaver and Scott 1991). Shaver and Scott further associate entrepreneurs with having a knack to not only see a system as it is but also as it might be. Hence, entrepreneurs can spot opportunities that might otherwise be unexpected and unspotted by others (Mitton 1989: 12). Shaver and Scott (1991) posit that an entrepreneur's ability of judgement under uncertainty is influenced by at least three *cognitive heuristics* – availability, representativeness and anchoring (Kahneman et al 1982, Kahneman and Tversky 1973, Tversky and Kahneman 1974). Combined, cognition could be thought upon as the mental processes of knowing, including aspects such as awareness, perception, reasoning and judgement (Baum, Frese and Baron; Rauch and Frese). In a study comparing entrepreneurs and managers, Busenitz and Barney (1997) suggest that entrepreneurs use their heuristics and make decisions in ways that are fundamentally different from those adopted by managers. This way, entrepreneurs exercise their ability to think differently.

Resonating with this idea of an entrepreneur's uniqueness to think, Gavetti and Levinthal (2000) suggest that entrepreneurs rely heavily on heuristics while trying to make sense out of uncertain and complex situations. Gavetti and Levinthal (2000) conclude therefore that this unique modus operandi of entrepreneurs facilitate unorthodox and forward looking thinking and subsequently accelerates learning. In coherence with the fact that heuristic-based logic accelerates entrepreneurs' learning, Alvarez and Busenitz (2001) note that the accelerated entrepreneurs' learning process shrinks the reaction time to new changes considerably and enhances therefore their chances to capitalize on the opportunities recognised or discoveries. Shane (2000) considers the recognition of such opportunities as "distinct *cognitive feats* whose accomplishment is conditioned by an entrepreneur's prior experience and education".

If high education is any reflection of strong cognitive ability, then studies have shown that business founders in Western countries are highly educated (Reynolds et al 2000, Rauch and Frese). Recent studies have recognised cognitive styles (Brigham et al 2007, Dutta and Thornhill 2008, Haynie and Shepherd 2009, Kickul et al 2009) and learning styles (Dimov 2007) as the fundamental types of heuristics that individuals employ when they approach, frame and solve problems. Streufert and Nogami (1989) define cognitive styles as an individual's preferred or habitual approach to organising, representing and processing

information. If Shane (2000) argues that opportunity discovery is a function of the distribution of information in the society (Hayek 1945) and that entrepreneurs discover opportunities related to the information they posses, then it could be argued that the cognitive ability allows entrepreneurs to process those information in a manner that facilitates opportunity recognition. It is intrinsic to the individual (Riding and Rayner 1998) and it differs among individuals (Messick 1984). It is someone's preferred mode of learning or solving problems. According to Brigham et al (2007: 31), research has shown that: (1) cognitive styles are pervasive dimensions that can be assessed using psychometric techniques; (2) they are stable over time; (3) they are bipolar; and (4) they describe *different* rather than *better* thinking processes. Dimov (2007) and Kickul et al (2009) posit the mechanism through which an individual's cognitive style affect the individual's progression from opportunity recognition behaviors to opportunity exploitation behaviors.

Entrepreneurial cognition can thus explain: differences between entrepreneurs and the rest of the population (Baron 1998); opportunity identification (Krueger 2000); optimism in evaluating and perceiving the outcomes of opportunity (Palich and Bagby 1995); successful pursuit of start-up process (Gatewood et al 1995), decisions to create new-ventures (Mitchell et al 2000). Combined, cognition plays an important part in influencing an individual's feasibility assessment of entrepreneurial actions.

In this chapter, individual's feasibility assessment of entrepreneurial actions was shown to be linked with their perceived self-efficacy and cognitive prowess. I conclude, therefore, by presenting a comprehensive theoretical model that links feasibility assessment to entrepreneurial actions. This is shown in Figure 4 below.

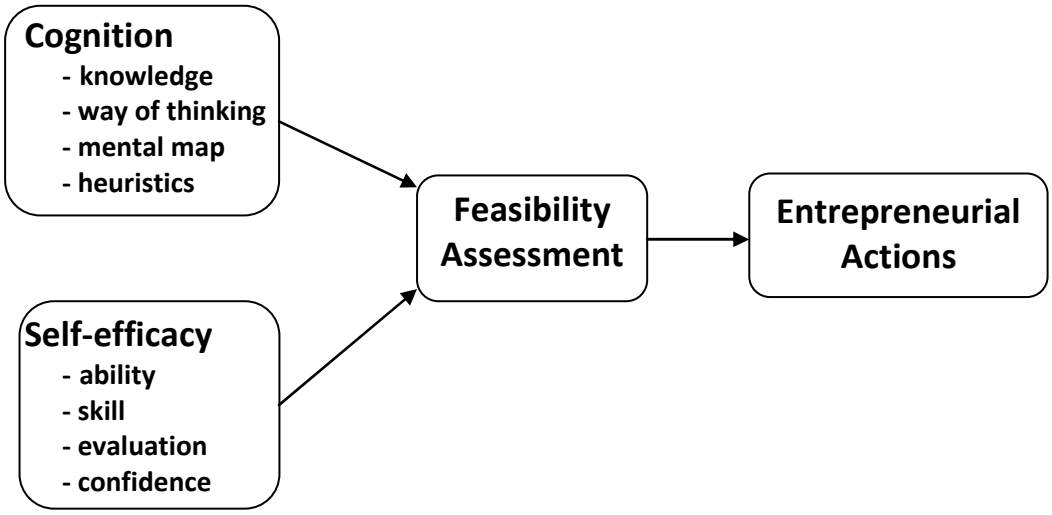


Figure 5 Theoretical model of feasibility assessment and entrepreneurial actions

Chapter 2: Desirability Assessment and Entrepreneurial Actions

Theories of entrepreneurship in economics that have focused on the supply side perspective have mainly concentrated on the roles of human capital and risk aversion (Parker 2005). Supply side theories of entrepreneurship in sociology have focused on processes of social mobility (Carroll and Mosakowski 1987). Further, entrepreneurship research has focused on individuals' internal motivation or entrepreneurial orientation (Lumpkin and Dess 1996, Busenitz et al 2003). In Chapter 1, I drew upon the first two streams of theory and articulated on the individual-level attributes that influences an individual's perceived feasibility of entrepreneurial actions. In this chapter, while still focusing on the supply-side perspective of entrepreneurship, I draw upon the third stream of theory and articulate on individuals' economic as well as non-economic rationalities that regulate an individual's motivations and desirability to pursue entrepreneurial actions.

Aldrich and Zimmer (1986: 3) remark that entrepreneurial activity "can be conceptualized as a function of opportunity structures and motivated entrepreneurs with access to resources". Human motivations play an important role in shaping entrepreneurial behaviors. A significant bulk of entrepreneurship research has linked traits and person-centric innate characteristics as chiefly responsible for shaping entrepreneurial motivations. Individual's motivations drawn for his or her enduring psychological traits such as the need for achievement (McClelland 1961, McClelland and Winter 1969), risk-taking propensity (Knight 1921), desire for autonomy (Sexton and Bowman 1985), internal locus of control (Rotter 1966) etc., have been shown to be linked with entrepreneurship. Not only has the trait-based explanation of entrepreneurial motivations yielded mixed and inconclusive findings, they have now been discredited for their lack of credibility. During recent years, the supply-side perspective has moved away from the person-centric approach and concentrated more on identifying social and economic motivational factors that could influence an individual's desirability to pursue entrepreneurial actions. In this study, I consider an individual's desirability to perform entrepreneurial activities to reside within two pertinent rationalities: *non-economic* and *economic*. Individuals' socio-cognitive structure shapes their non-economic rationality that subsequently conditions their choice and desire to conform to prevailing entrepreneurial norms, practices and prevalence. Economic rationality on the other hand reinforces individuals' motivation for utility maximization. The rationalities concern individuals' desirability assessment of entrepreneurial actions. These are discussed next.

2.1 Non-economic rationality

Entrepreneurial process is inherently dynamic in nature such that variations in entrepreneurial activities over time, between industries and across nations could not be explained based only on stable enduring traits of agents (Shaver and Scott 1991). Hence, proper recognition of the environment in which these variations occur is crucial and that the psychological perspective of entrepreneurship should also consider the influence of context. Since entrepreneurship is fundamentally a social activity, it is only justified to consider the influence of an individual's social cognition on the pursuit of entrepreneurial actions.

Individual's goal oriented behaviors are often explained based on social cognitive theory (SCT) (Bandura 1986, Bandura 1991, Wood and Bandura 1989). In SCT, the primary focus pivots around the mechanism of individual's perceived self-efficacy. Self-efficacy is held to be the chief driver of the manner in which individuals function when they set up goals and plan on their actions to fulfil those goals. Hence, the central idea of self-efficacy concerns individuals' personal beliefs in one's ability to attain a certain level of achievement on a given task (Bandura 1986, Bandura 1997). Entrepreneurial self-efficacy concerns individuals' confidence in themselves that they will be able to succeed as an entrepreneur (Chen et al 1998, Krueger and Brazeal 1994, Davidsson 1991). However, Bandura (1977) posits that the outcomes of self efficacious behaviors are often observed to be accurate depending upon individuals' evaluations of the response from the social system to those specific behaviors. Thus, individuals' with perceived self-efficacy about a given behavior are more likely to realize those behaviors in societies where it is recognized, legitimate and appreciated (Klyver and Thornton 2010). It is the motivation to legitimize ones actions and behaviors as well as to conform to the subjective entrepreneurial norms, practices and prevalence in one's society that actually influences entrepreneurial behaviors.

The cognitive structure of individuals are greatly influenced by what Bandura (1977) proposes as a concept of *social learning*. Bandura (1977) remarks: "Learning would be exceedingly laborious, not to mention hazardous, if people had to rely solely on the effects of their own actions to inform them what to do. Fortunately, most human behavior is learned observationally through modeling: from observing others one forms an idea of how new behaviors are performed, and on later occasions this coded information serves as a guide for action." Bandura's (1977) social learning theory added a social element to learning, arguing that people can learn new information and behaviors by watching other people. Two form of

learning has been proposed: observational learning (or modeling) and intrinsic reinforcement both of which has the potential to explain a wide variety of individual behaviors. Observational learning or modelling is a form of learning process where an individual learns by emulating or imitating the observed behaviors of others. While modeling is thus a form of learning that is influenced by context or environmental factors, Bandura (1977) proposed intrinsic reinforcement as manifestations of internal reward such as a sense of accomplishment, pride and satisfaction. These identified thoughts and cognitions serve as a conduit to cognitive development. Scherer et al (1989) establish that the propensity to engage in entrepreneurship increases with the presence of entrepreneurial parents. Scherer et al. argued that the presence of entrepreneurial parents served as a role model whose behaviors and activities were imitated through a process of observational learning or modelling consistent with Bandura's (1977). Drawing from the social cognitive theory, one can thus provide a social cognition explanation for the phenomenon of entrepreneurship. Thus, in order for observational learning to be successful the individual must be motivated to emulate the behaviors that have been modelled. Extending this to entrepreneurial motivations, entrepreneurs are motivated to emulate the behaviors of other successful entrepreneurs.

Research in social psychology also suggests that people evaluate their choices and behaviors by comparing those with similar "peers". Research from the economics literature consolidates the fact that social norms are inferred from occupational group rather than wealth (Fershtman et al 1996), while literature in economic sociology shows that people similar in socio-demographics are more likely to socialize with each other (McPherson 1983) and that the attitudes and behaviors of similar others can influence individuals' career choices even when they are not in direct contact but merely through exposure (Dobrev 2005). Individuals' cognitive mechanism of self-efficacy is often shaped by observing others and knowing other entrepreneurs (Davidsson 1991). Ties with other entrepreneurs strengthen social desirability and spread norms regarding entrepreneurial behavior (Sorensen 2007). Success of other entrepreneurs serves as role models and infuses the urge to become like them. The cultural legitimacy for the association between self-efficacy and entrepreneurial behaviors is established if individuals find that entrepreneurial activity and entrepreneurship is held in high esteem, highly revered and respected in their societies (Klyver and Thornton 2010). While conforming to the prevailing norms that rewards entrepreneurship as a sound career choice can reinforce entrepreneurial motivations, strong punishing attitudes in the society towards failure can dent such motivations. There is an element of personal status

associated with the pursuit of entrepreneurship if there is high prevalence of rates of entrepreneurship in one's society.

Combined, I argue that individuals' socio-cognitive structure facilitates their need to conform and their need to belong to the elite group of entrepreneurs around them. This is achieved through mechanisms that recognise, appreciate and legitimize their pursuit for entrepreneurship. Individuals' socio-cognitive structure, thus, concerns their non-economic rationality of conforming to prevailing entrepreneurial norms and of making a conditional choice to undertake entrepreneurial actions. As such, social cognition shapes the outcome of an individual's desirability assessment of the pursuit of entrepreneurial actions.

2.2 Economic rationality

Entrepreneurship involves economic activities; hence a significant portion of the motivation behind the pursuit and strategic choice of entering into entrepreneurship must come from the economic orientation of individuals and their evaluation of the economic feasibility of entrepreneurship. The decision to become an entrepreneur could, thus, be viewed as an occupational choice motivated by economic factors (Eisenhauer 1995). Since entrepreneurship is not a purely psychological or social phenomenon, research in entrepreneurship must also include economic theory that takes into account the influence of economic factors on entrepreneurship.

Entrepreneurs have been identified as central to economic development by Schumpeter (1934) and by many other economic historians. For example, Cole (1968-69: 9) writes: "The essential basic (economic) unit is, of course, the entrepreneur or entrepreneurial group seeking to 'initiate, maintain, and aggrandize' a business institution aimed at the achievement of monetary or other gains in an economy or business world that gives an appreciable amount of freedom to such actors. Too often entrepreneurship is viewed merely as a psychological capacity like musical or poetical talent." Rather than attributing individuals' enduring characteristics and social conditions as the prime movers behind their entrepreneurial motivations, it is worth looking into extent to which economic motives shape the decision to become an entrepreneur.

An individual's decision upon whether to become an entrepreneur will be based upon a comparison of the expected reward to entrepreneurship and the reward to the best alternative

use of his time (Casson 1982: 335). Campbell (1992) extends this idea and combines it with two occupational choice models - migration model of Todaro (1969) and the entrepreneurial decision model of Casson (1982) – to show that entrepreneurial decision are to a significant extent regulated by economic motivations that, then, serve as the central driver of an entrepreneur's utility-maximisation. The economic rationale behind Campbell's occupational choice model yields similar results as Ehrlich's (1973) model of illegitimate versus legitimate behavior where he substitutes entrepreneurial activities for illegitimate behavior and wage labor for legitimate behavior. Campbell (1992) remarks: "Any entrepreneurial act has the potential of increasing or decreasing the wealth and psychic well-being of the entrepreneur...the potential entrepreneur examines the expected net benefits of entrepreneurship versus the expected gains from wage labor. The decision to start a business depends upon the expected net gain in wealth, beyond that gain which would be expected from non-entrepreneurial activities." The decision to embark into entrepreneurship will be driven by expectations of income, working conditions, and initial wealth (Eisenhauer 1995). Parker (2005) posits that occupational choice models divide the workforce into individuals "who do best by becoming entrepreneurs, and those who do best by choosing an alternative occupation, usually taken to be either safe investment or paid employment."

Contrary to Schumpeterian (1934) approach where entrepreneurs are believed to be motivated by psychological factors and not by economic rewards, Austrian researchers primarily Ludwig von Mises and Israel Kirzner consider entrepreneurs as those that arbitrage opportunity, those who are alert to potential profits and those who eventually capitalize on them. Kirzner (1973: 14) describes entrepreneurs as "a group of outsiders who are themselves neither would-be sellers nor would-be buyers, but who are able to perceive opportunities for entrepreneurial profits; that is, they are able to see where a good can be sold at a price higher than that for which it can be bought." This approach presents entrepreneurs as economic agents who maximize utility by capitalizing on opportunities and profit making scenarios. Theoretical propositions put forth by Frank Knight and Theodore Schultz adds the dimension of risk and uncertainty under which agents make decisions on economic activities. Specifically, they view an entrepreneur as a decision maker who is responsible for his decisions made in an uncertain and dynamic economy but whose reward is an economic profit. Schultz (1975, 1980) associates an entrepreneur's skill to make decisions under uncertainty as the "ability to deal with disequilibria," such that Schultz's entrepreneurs are rational economic actors who reallocate labor and capital in response to economic incentives

(Eisenhauer 1995). Baumol (1990) based his argument on economic theory to suggest that entrepreneurs are motivated by the reward structure in the economy; thereby consolidating the fact that new venture creation is driven by the economic perspective that focuses on the usefulness, utility and desirability of an entrepreneurial career.

Combined, the foregoing approaches emphasize the importance of rational, utility-maximizing considerations of risks and expected economic returns as the main drivers of the choice between strategic alternatives (e.g., Campbell 1992, Douglas et al 2000, Eckhardt et al 2003, Eisenhauer 1995, Fiegenbaum et al 1988, Kirzner 1997, Lazear 2005). Hence, individuals' economic rationality and motivations are directed towards maximizing their economic utility that shapes the outcome of an individual's desirability assessment of the pursuit of entrepreneurial actions.

Individual's desirability assessment of entrepreneurial actions is linked with economic as well as non-economic rationality. A comprehensive theoretical model that links an individual's rationalities with his desirability assessment of entrepreneurial actions is presented in Figure 5 below.

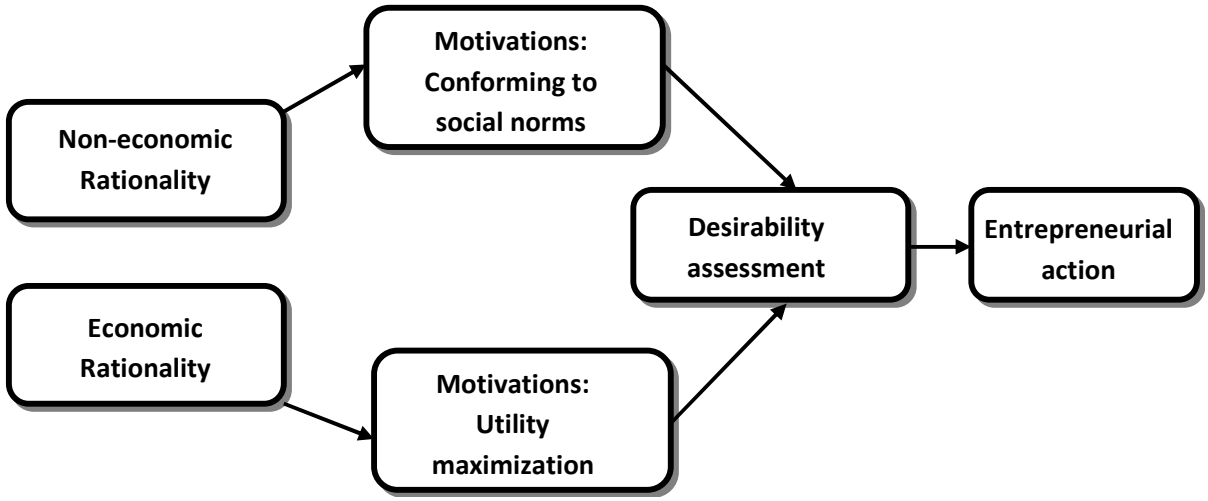


Figure 6 Theoretical framework of desirability assessment and entrepreneurial action

In summary of the arguments put forth in this chapter, it is observed that the supply-side perspective of entrepreneurship concerns both an individual's *feasibility* and *desirability* assessment of entrepreneurial actions. While self-efficacy and cognition shapes the perceived feasibility of such actions, non-economic rationality residing within an individual's social-cognition and economic rationality for utility-maximization regulates the desirability of

individual-level entrepreneurial actions. In the following chapter, the demand-side perspective of entrepreneurship too, will be shown to have a regulatory influence on, both, an individual's feasibility as well as desirability assessment of the pursuit of entrepreneurial actions.

Chapter 3: Institutions and Entrepreneurial Actions

The supply-side perspective of entrepreneurship provides insights into the *suitability* of individuals to occupy entrepreneurial roles (Thornton 1999). They do not account for what drives the *demand* for entrepreneurship and fail to explain how an individual's *context* regulates his or her entrepreneurial actions. As a result, supply-side perspective of entrepreneurship presents an under-socialized view of opportunity recognition, by seeking to manipulate the context in which the individual operates. This assumption seems difficult to come to terms with especially given the large cross-country variations in the prevalence rates of entrepreneurship (Bosma et al 2009). To explain variations in entrepreneurship across countries, *demand-side* explanations appear necessary – those that emphasise the regulating effect of an individual's social, institutional and economic context on his or her entrepreneurial behaviours. Thus, while the supply-side perspective explicates the influence of individual-level attributes on individual-level phenomenon, the demand-side perspective allows accounting for the mechanisms though which individual-level phenomenon are contingent upon contextual-level determinants. The demand-side perspective would thus allow explicating *cross-level* moderating effects of context on entrepreneurial actions.

Four distinct sources of demand side have been identified: political and institutional sources; social environment; culture and; market place (Delmar and Wennberg 2010). In this chapter, I draw upon the *demand-side* perspective of entrepreneurship and consider two forms of institutions as representatives of "context" - *informal institutions* and *formal institutions* - to explicate their regulatory influence on individuals' entrepreneurial behaviors: (Aldrich 1990, Thornton 1999, Anderson and Miller 2003, Hofstede 1980, Baumol 1990, Sobel 2008, Audretsch et al 2007). In this study, two pertinent aspects of informal institutions as individuals' context -social context and a country's cultural context – have been accommodated. Formal institutions on the other hand have been represented by codified rules and regulations. In this chapter, the demand-side perspective of entrepreneurship will be shown to have a regulatory influence on, both, an individual's feasibility as well as desirability assessment of the pursuit of entrepreneurial actions. Before we discuss that, a brief discussion on the association between institutions and entrepreneurship as received in the extant entrepreneurship literature is in order.

Traditional institutional theory has struggled to account for entrepreneurial actions (DiMaggio 1988, Barley and Tolbert 1997). Much of the contemporary works in institutional theory focus on the primal question of how the institutional environment shapes behaviors and structures of incumbent organisations. Much of the work is categorized into two parts. The first one looks into how normative, cognitive and regulative dimensions of external environment constrain or stifle large and mature organisations (Scott 2008). The other part looks into certain inherent circumstances that promote these organisations to adopt new structures (Meyer and Rowan 1977, DiMaggio and Powell 1983, Tolbert and Zucker 1983). Subsequent to the above mentioned research on institutional theory, research started focusing on institutional changes within mature organisations (Dacin et al 2002). During recent years, the focus of some research has been on the agents – "institutional entrepreneurs" – that create new or change existing institutions (Greenwood et al 2002, Maguire et al 2004). Considerably very little attention has been focused within the institutional-theory research on the process of entrepreneurship though. As a result, the physical phenomenon that entails entrepreneurship has been rather implicitly explained by the fundamental principles of institutional theory.

Recent research in entrepreneurship, however, has begun to systematically and explicitly explore the functional relationship between institutions and entrepreneurial actions (Hwang and Powell 2005, Tolbert et al 2010). This functional relationship could be better understood based upon sociological approach to entrepreneurship that draws from two schools of thoughts. One can draw from the institutional perspective that builds upon W. Richard Scott's (2008) conceptualization of the institutional context as providing three dimensions of organizational legitimacy – regulative, normative and cultural-cognitive, and extending these dimensions to explore the influence of institutions on the entrepreneurial process. This presents a view that explains how socially constructed environments shape entrepreneurial outcomes and behaviors. One can also draw from Douglass. C. North's work that conceptualizes institutions as either "formal" or "informal" and look into the influence of each of the two forms of institutions on entrepreneurial behaviors.

Institutional theory that entails the concept of "formal" and "informal" institutions, as proposed by Douglass C. North provides a descriptive theoretical framework to analyze entrepreneurship. Within the purview of this framework, North discusses the influence of external politics, economics and societies on individuals' behaviour. North (1990, 1993, 1995) recognises institutions as the "incentive structure of the society" defining them more

specifically as “the rules of the game in a society or, more formally the humanly devised constraints that shape human interaction”.

One can extend North’s concept to entrepreneurship to explore the pertinent mechanisms through which formal and informal institutions act as possible constraints or enabling forces on entrepreneurial actions. Entrepreneurs would align their activities, behaviors and strategies that are coherent with the opportunities and limitations provided through the formal and informal institutional framework (Aidis, Estrin and Mickiewicz 2007). Institutions not only influence what individuals search and see, but also, how they react to what they see (e.g., Hwang and Powell 2005, Thornton 1998). Thus, the structure of institutions would either encourage exploiting entrepreneurial opportunities or stifle it.

Entrepreneurship would greatly benefit from institutional framework that consists of the “set of fundamental political, social and legal ground rules that establishes the basis for production, exchange and distribution” (Davis and North 1971). Formal institutions shape the availability of opportunities for the entrepreneurs to grab and may as well regulate their entrepreneurial actions towards exploiting those opportunities. Institutions may also help in reducing uncertainty and risk that eventually reduces the transaction costs associated with entrepreneurship (Welter and Smallbone 2003). Dallago (2000: 305) remarks: “they give stability and predictability to economic interactions”. Baumol’s (1990) seminal work shows that institutions determine not only the *level,* but also the *type* of entrepreneurship, suggesting that prevailing institutional context influences the allocation of entrepreneurial activities and efforts into productive, unproductive or even destructive entrepreneurship. The institutional setup or the “rules of the game” dictate relative returns and hence the allocation of entrepreneurial efforts across these activities (Baumol 1990, Henrekson and Sanandaji 2011). Institutions therefore represent the structural framework that provides the incentives for different types of economic activity (Aidis et al 2007, Baumol, 1990).

Informal institutions on the other hand, embodied within cultural norms and prevailing attitudes influence individuals’ values and patterns of entrepreneurial behavior (Welter and Smallbone 2003). These norms may well determine whether or not societies are tolerant towards profit-making or risk-taking attitudes (Welter and Smallbone 2003), both serving as perquisites for entrepreneurial actions. Further, societal norms may look upon entrepreneurship as a career with higher status than alternate forms of employment or weigh

it as a better career choice, enabling individuals to assess their desirability to attain the associated social status or to pursue a career that is preferred in their given societies.

Based upon the brief discussion presented above, formal as well as informal institutions offer incentives to engage in entrepreneurial activities. Entrepreneurs will weigh these incentives offered by the formal rules and regulations (formal institutions according to North) or by the prevailing cultural values and norms (informal institutions according to North). Based upon these incentives, individuals assess their desirability to pursue entrepreneurial actions. In the following, a detailed explanation on how different manifestations of informal (social and cultural influences) and formal (intellectual property rights protection regime, taxation laws, etc) institutions influence an individual's desirability to pursue entrepreneurial actions will be presented.

3.1 Informal institutions and entrepreneurial actions

Evidence of the effects of informal institutions on entrepreneurial actions remains scarce. This could be attributed to the difficulty inherent in demonstrating social group effects as well the scarcity of available data. This is a woeful gap, since research on institutions in economics, sociology, and political science widely recognize informal institutions as major regulators of individual action (e.g., Greif 2002, Williamson 2000). It is through the shared subjective knowledge of the members of the society that the informal institutions are put into effect (Licht and Seidel 2006). The rewards and sanctions recognised by informal institutions include social status and social standings. The demand-side perspective focuses on the institutional environment and argues that people are drawn into entrepreneurship due to a supportive culture for entrepreneurship that is a result of the infrastructural support that the environment has to offer (Davidsson 1995). Societal level cultural orientations significantly influence how individuals perceive and pursue entrepreneurial opportunities (Hayton et al 2002, Verheul et al 2001). The demand-side perspective emphasizes the socially as well culturally conditioned rationality of opportunity evaluation. Individuals evaluate their own feasibility and desirability of entrepreneurial actions based upon the prevailing societal norms and attitudes. A detailed discussion on how social and cultural context regulates the feasibility and desirability of entrepreneurial actions is presented next.

3.1.1 Social context and feasibility assessment of entrepreneurial actions

Social sciences have traditionally recognized the relationship between social norms and individual behavior. For example, the significant influence of neighboring peers on individuals throughout their life-time is well documented in the neighborhood literature (Mayer and Jencks 1989). Friedkin (2001) combines the classical theory in social psychology on attitudes and social comparisons with a formal network theory of social influence to propose a mechanism of norm formation. The norm formation process is based on the assumption that there invariably is a correct response for every situation and that individuals are almost always drawn to base their responses on these correct foundations Friedkin, (2001). To this end, Friedkin, (2001) posits: "Given such a belief, a normative evaluation of a feeling, thought or action is likely to arise when persons perceive that their positive or negative attitudinal evaluation is shared by one or more influential others".

Elster (1989) defines social norms as unwritten rules of conduct within a group that indirectly specifies desired group behaviors as well as the sanctions for not conforming to these behaviors in a given community (Kandori 1992). Norms become social norms when they are shared by others and sustained by approval (Elster 1989). These social norms draw attention because of individuals' strong need and desire to belong to social groups and be accepted by them (Baumeister and Leary 1995), such that social norms are often enforced by members of the general community, and not always out of self interest (Elster 1989). One can argue therefore that the perceived feasibility to undertake entrepreneurial actions would, to a considerable extent, depend upon whether or not the collectively held social norms and attitudes considers entrepreneurship as being legitimate. Societal-level legitimacy of entrepreneurship as a pursuable career will thus have a positive influence on an individual's feasibility assessment of entrepreneurial actions.

Of significant importance are perceived values and aspirations by close social referents (McPherson 1983) - defined in terms of age, gender, education level and household income - such that norms prevailing in such reference groups, then, become group-level shared ideas of proper and appropriate behaviors (Festinger 1954, Rimal et al 2005, Granovetter 2005). Subsequently, these common ideas or social norms would be shared within groups regardless of the individual characteristics of the members comprising that group (Freshtman et al 1996). These shared ideas that generate a group attitude to the entrepreneurial venture as being socially and economically feasible provide positive signals whereas punishing attitudes

to entrepreneurship related to failure provide negative signals, thereby influencing an individual's feasibility assessment of entrepreneurial actions.

Group attitudes may either encourage or discourage an individual's perceived self-efficacy. For example, societal-level attitudes that signals a collectively held belief that entrepreneurial success would be hard to achieve, may reinforce concerns regarding negative social repercussions of potential entrepreneurial failure (Bowen and De Clercq 2008, Cullen and Gordon 2007). On the other hand, if a given society believes that entrepreneurship is feasible, then individuals may be encouraged to start a new business (Krueger et al 2000). The prevalence of high-levels of confidence, skills and competence in a given society would in turn boost the perceived self-efficacy of the individual. This would yield favourable outcome of an individual's feasibility assessment towards the pursuit of entrepreneurial actions.

Research on social structures and job search shows that the perceived feasibility of a career choice is influenced heavily by individual's social environment (Granovetter 2005, Sørensen 2007). Although not in direct contact, attitudes and behaviors of similar others can influence career choices merely through exposure to prevailing social norms towards such choices (Dobrev 2005). An individual's opinions regarding available social opportunities and constraints are shaped by knowing about the career choices made by similar individuals and perceptions of their appropriateness (Dahl and Sorenson 2009). This suggests that stronger ties with entrepreneurs in the individual's social reference group will tend to enhance a given individual's engagement in entrepreneurial activity. Further, stories of successful entrepreneurs may signal that the pursuit of entrepreneurship could be feasible and that others may also achieve success. An individual's feasibility assessment based upon comparisons made with those that have already achieved success may influence him to pursue entrepreneurship.

New business development process is also greatly influenced by social contacts or networks which in fact form the patterns of social interaction. These interactions assist entrepreneurs in accessing resources such as information, finance, labor, etc., (Carsrud and Johnson 1989, Hills et al 1979). Social networks have been shown to be vital antecedents for entrepreneurial alertness that forms a necessary condition for opportunity recognition (Ardichvili et al 2003). The density of social networks has been argued to have mixed influence on the outcomes of entrepreneurial actions. For example, a dense or a structurally

cohesive network have been observed to provide competitive advantage for entrepreneurs (Coleman 1988, Walker et al 1997, Ahuja 2000), while sparsely connected networks with high densities of "structural holes" have been observed to assist entrepreneurs in achieving competitive advantage (Burt 1992). Singh et al (1999) report the number of weak ties within an entrepreneur's social network to be positively related to the number of new venture ideas and opportunities recognised, suggesting that network entrepreneurs could identify significantly more opportunities than solo entrepreneurs (Aidis et al 2007). Resonating with the theory of embeddedness, Aldrich and Zimmer (1986) consider entrepreneurship to be embedded in networks of continuing social relations. An individual's relative position in such networks determines their proximity to opportunities, information, resources, etc, such that greater the embeddedness with the social network greater will be the access to entrepreneurial opportunities. An individual will then assess the feasibility to pursue entrepreneurial actions depending upon his relative position in the social structure.

In the above discussion, the influence of social context on the feasibility of individual's entrepreneurial actions was articulated. Based on the above arguments, a theoretical framework summarizing the mechanism through which social context conditions perceived feasibility of entrepreneurial actions is presented in Figure 6 below.

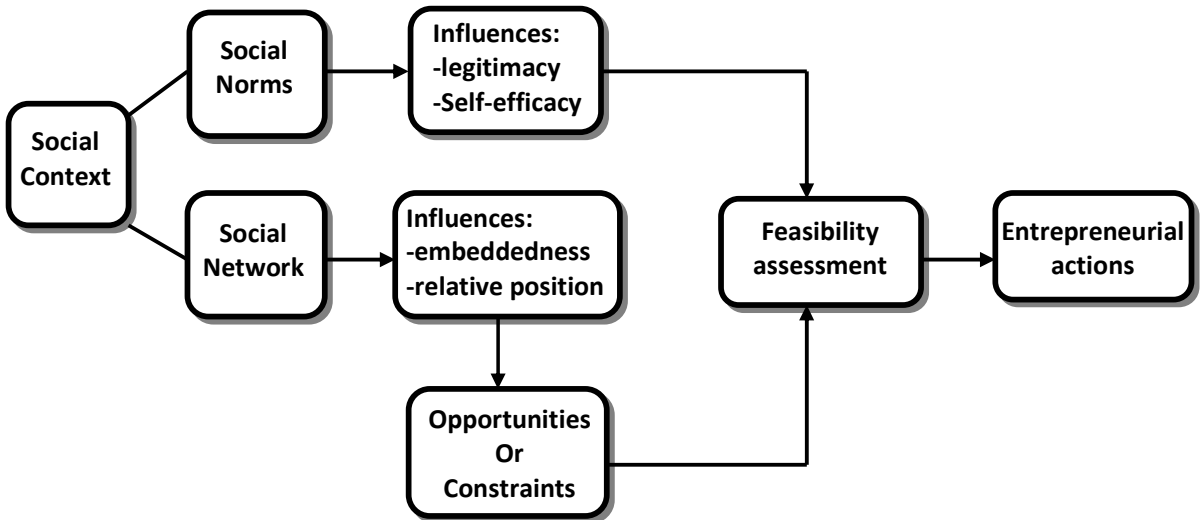


Figure 7 Socially conditioned rationality for feasibility of entrepreneurial actions

3.1.2 Social context and desirability assessment of entrepreneurial actions

Social norms regulate actions through entrepreneur's perceptions of his or her position relative to important others in the social systems (Goodman and Haisley 2007, Sørensen 2007). This relative positioning may influence an entrepreneur's perceived desirability to be as important as others. Societal norms that hold entrepreneurship in high esteem and that associates higher status with those that indulge in entrepreneurial activities would certainly reinforce one's desirability to become an entrepreneur. Prevalence of successful entrepreneurs in one's social reference group motivates others to repeat such success stories. The influence that successful entrepreneurs have as role models on others, may motivate others in the social reference group establish themselves as role models also. High prevalence rates of entrepreneurial activities and successful new ventures in one's social reference group offer role models that motivate other individuals to emulate them. Individuals start conforming to "If he/she can do it, I can" (Veciana 1999). All these collectively may well influence the perceived desirability to pursue success through entrepreneurial actions.

In the above discussion, the influence of social context on the desirability of individual's entrepreneurial actions was articulated. Based on the above arguments, a theoretical framework summarizing the mechanism through which social context conditions perceived desirability of entrepreneurial actions is presented in Figure 7 below.

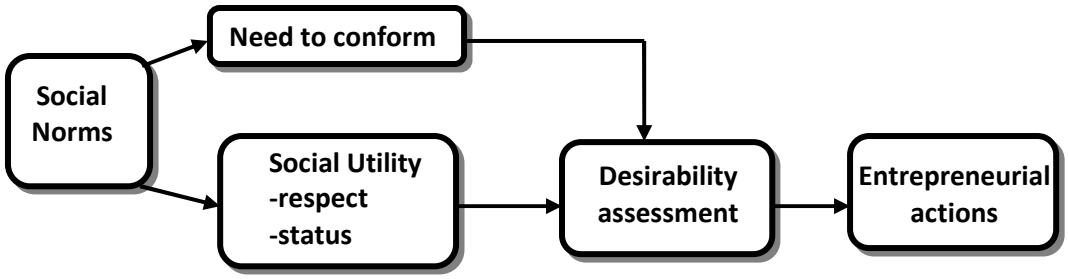


Figure 8 Socially conditioned rationality for desirability of entrepreneurial actions

Before explanations on the influence of culture on entrepreneurial actions are presented, clarifying the difference between social norms and culture is in order. Social norms represent a *part* of a country's or group's culture, but they do not reflect the entire populations' culture as a whole nor could they be substituted for other cultural dimension measures (Elster 1989). Several definitions of culture have been offered in the extant literature. The most intriguing of culture's definition is offered by Hofstede (1991: 5) who defines culture as "the collective programming of the mind which distinguishes the members of one group or category of people from another". Hence, societal-level cultural orientations will constitute a regulatory influence on individual-level actions. Individuals with similar cultural orientations are likely to act or behave in a similar manner, different from those that belong to a different culture.

Verheul et al (2001) remark that culture influences the level of entrepreneurship by affecting the supply and demand for entrepreneurship. They argue that at the supply side individual preferences for entrepreneurship are often shaped by prevailing attitudes towards entrepreneurship that are likely to be within the cultural domain. At the demand side culture exercises its influence on entrepreneurship by indirectly influencing entrepreneurial opportunities. Institutional theorists consider cultures as practiced codes of conduct that structure social interactions (Barley and Tolbert 1997, Hatch and Cunliffe 2006, North 1990, 1993). A culture shapes actions by providing a "dominant logic of action" i.e. by providing a set of habits, skills and styles (Swidler 1986) or by repeating common actions or norms inspired by conscious acts to gain social acceptance or as relatively less conscious emulation of those common actions (Cialdine and Trost 1998, Fischer 2006, Powell and DiMaggio 1991, Shteynberg et al 2009). Received literature shows that culture may help to provide additional explanation for variability in the cross-national rates of entrepreneurship (Hayton et al 2002, Uhlaner and Thurik 2007). Since the economic activity of entrepreneurship is carried out through the efforts of the individual, the variability in the national aggregate rates of entrepreneurship across nations could be explained by considering the regulatory influence of national culture on individuals' entrepreneurial actions.

3.1.3 Cultural context and feasibility assessment of entrepreneurial actions

Hofstede (1980) has documented the national-level aggregate measures of cultural orientations based upon the psychological traits of individuals in respective countries. His works include manifesting a country's culture based upon five dimensions: individualism Vs

collectivism, power distance, masculinity Vs feminism, uncertainty avoidance and long Vs short term orientation. There is extensive coverage on the definitions of these dimensions and their expected links with the levels of entrepreneurship (e.g., Herbig 1994, Hofstede 1980, Shane 1992). It is observed that high individualism, low uncertainty avoidance, low power-distance and high masculinity actually aids in entrepreneurship. The greater the cultural shift from this "ideal-case-scenario", the lower the individual and aggregate levels of entrepreneurship.

The GLOBE study also provides validated measures of descriptive norms and cultural practices across countries (House et al 2004). This study accommodates for nine pertinent dimensions of culture including: in-group collectivism, institutional collectivism, future orientation, power distance, performance orientation, assertiveness, humane orientation, uncertainty avoidance and gender egalitarianism. Creating two second-order factors out of these nine dimensions, Stephan and Uhlaner (2010) have shown that cultures could be classified as "performance based culture (PBC)" and "socially supportive culture (SSC)". PBC and SSC have been shown to be linked with national rates of entrepreneurship, suggesting the regulatory influence of cultural orientations on entrepreneurship.

Societal-level uncertainty avoidance refers to the extent to which individuals in a given society feel threatened in ambiguous situations, the extent to which individuals prefer order and rule-based reduction of uncertainty as well as the extent to which uncertainty is generally tolerated in a society (Sully de Luque and Javidan, 2004). It is the extent to which individuals in a given society feel threatened in ambiguous situations. Entrepreneurship typically entails uncertainty mainly owing to the fact that organisational structures are not fully developed or for that matter roles are not clearly defined. An individual is also uncertain about the returns on the risks and trade-offs associated with the allocation of time, effort and resources into entrepreneurship. Under such circumstances, societal-level orientations that avoid taking risks will cast doubts in the minds of an individual as far as feasibility of entrepreneurship as a sound career choice is concerned. High power distance societies that reserve the availability of key resources and information considered vital for exploiting entrepreneurial opportunities to only a few chosen members will constitute a negative influence on the perceived feasibility to pursue entrepreneurial actions. Societal level in-group collectivism, defined as the extent of cohesiveness in organisations and families (House et al 2004) could promote risk-taking activities entailed in entrepreneurship by collective risk-sharing, thus positively influencing the perceived feasibility of entrepreneurship. Positive societal climate in which people share

risk represent a socially supportive culture. Descriptive norm based upon frequent experiences of supportiveness and helpfulness would enhance perceived feasibility of entrepreneurship (Stephan and Uhlaner 2010).

Culture constitutes a regulatory influence on an individual's perceived feasibility of whether or not their entrepreneurial actions would be supportive in their given environmental surroundings. The influence of culture thus concerns the legitimacy to form a new business (Etzioni 1987). By combining cognitive theory on self-efficacy with institutional theory on cultural legitimacy, Klyver and Thornton (2010) posit that an individual's perceived feasibility of engaging in entrepreneurial actions is regulated by how strongly an individual's entrepreneurial self-efficacy beliefs are contingent upon the cultural legitimacy of entrepreneurship. Self-efficacious behaviors are accurately predicted when social system's response to that specific behavior is evaluated (Bandura 1977). A positive outcome of those evaluations reinforces self-efficacious behaviors strengthening the perceived feasibility to perform those behaviors.

3.1.4 Cultural context and desirability assessment of entrepreneurial actions

Cultural orientations also constitute influence on the desirability of entrepreneurial actions. For example, cultural norm of performance orientation reflects the extent to which a community encourages and rewards innovation, high standards and performance improvement (Grove 2005, House et al 2004, Javidan et al 2005, 2006). An entry into entrepreneurship is typically an uncertain and hence a difficult proposition which represents departing from conventional and standard forms of employment. Consequently, societal perceptions of performance in entrepreneurship are likely to be different from those in conventional career paths. Societies that score high on performance orientation are those that would have realised the potential outcomes from entrepreneurship, for example, innovation, high standards, valued results, etc. Prevailing norms of performance orientation would thus serve as a tacit nod that would justify going forward with entrepreneurship and signal its legitimacy. Hence, societal level performance orientation regulates an individual's desirability to pursue entrepreneurial actions. Further, societies that have an individualistic orientation are those that value and appreciate individual accomplishments. Cultures that associate negative and punishing attitudes with failure in entrepreneurial activities would

make the pursuit of entrepreneurial actions less desirable. One would then be deterred to enter into entrepreneurship owing to the stigma attached with failure.

3.2 Formal institutions and entrepreneurial actions

Institutions have significant influence on economic activities, one such activity being entrepreneurship (Djankov et al 2003, Sobel 2008). Prior research has investigated how *formal* institutions such as regulations and the rule of the law, including enforceability of contracts (Djankov et al 2002), taxes (Cullen and Gordon 2007), functioning of labour markets (Carroll et al 2000), intellectual property rights (Shane 2002, Autio and Acs 2010), bankruptcy law (Lee et al 2007) etc., affect the level of entrepreneurial activity in a given society (Djankov et al 2002, Hessels et al 2008). Formal institutions shape behaviors primarily through monetary rewards and legalized sanctions channelled through the market systems (Licht and Seidel 2006).

Institutional processes influence newer organisations as and when they emerge (Aldrich 1990). Institutions not only affect emergence of new venture creations but the establishment of their legitimacy too (Aldrich and Fiol 1994). They shape the allocation of entrepreneurial resources and efforts into either productive or unproductive outcomes of entrepreneurial activities (Baumol 1990, Sobel 2008). Institutional factors such as a country's intellectual property right protection (IPR) regime is shown to encourage specialization in differently qualified entrepreneurs (Autio and Acs 2010). Rule of law have been observed to influence an individual's probability to engage in entrepreneurship as well as strategic entrepreneurship (Levie and Autio 2010). Opportunity costs associated with choosing entrepreneurship as a career choice over alternate forms of employment as well as trade-offs associated with the allocation of efforts, time and resources are influenced by institutional conditions, which regulate opportunity costs through their effect on external uncertainty (Crifo et al 2008). Institutions not only influence what individuals search and see, but also, how they react to what they see (e.g., Hwang and Powell 2005, Thornton, 1998). Thus, different institutional environments foster different reactions amongst entrepreneurs, some fostering the motivations to pursue entrepreneurship while others stifling them depending upon the incentives that formal institutions have to offer to entrepreneurs.

Institutions represent the structural framework that provides incentives for different types of economic activity (Aidis et al 2007, Baumol 1990). The influence of some of the pertinent institutions on entrepreneurial behaviors would be discussed next. This would help to illustrate that entrepreneurship could be meaningfully understood under specific institutional contexts. In particular, the influence of three institutions: *property rights protection regime; rule of law; taxation*[1] have been explored. In the following section, a discussion on how these institutions incentivize entrepreneurs to engage in entrepreneurial actions is in order.

3.2.1 Property rights protection regime

Protection of private property rights is of pivotal importance for economic growth (Rosenberg and Birdzell 1986, North 1981, Rodrik 2004, Acemoglu and Johnson 2005). Property rights protection regime regulates the *type* of efforts allocated over various entrepreneurial activities (Baumol 1990, Henrekson 2007). The strength of IPR regime determines the allocation of entrepreneurial efforts into productive, unproductive or destructive activities.

Strength of IPR regime regulates the allocation of entrepreneurial efforts across various types of activities. For example, if private property rights protection is strongly and securely enforced as codified laws, it reduces the uncertainty that plagues business transactions and hence reduces transaction costs. It would assist entrepreneurs in seamless exchanges and transactions based upon clearly enforced contracts. Such institutional structures would provide incentives for "productive entrepreneurship" signalling a positive contribution towards growth (Henrekson 2007). The outcome of entrepreneurial efforts would be productive owing to two reasons. First, entrepreneurs would be assured of retaining the entrepreneurial rents they earn and second, the division of labor and specialization would be greatly facilitated (Henrekson 2007). Strong IPR thus affects entrepreneurial behaviors in ways that channelizes entrepreneurial efforts towards activities that promote productive entrepreneurship. From the psychological point of view too, entrepreneur's intellectual property being protected by IPR regimes could infuse a sense of personal achievement. Having created something new and unfamiliar and duly rewarded by IPR regimes, much

[1] Although I acknowledge the fact that additional institutions too are likely to influence incentives for institutions, e.g., cost of starting a business, product market regulations, labor market regulations, savings and wealth formation, social security system, etc., I focus on the influence of five above mentioned institutions on entrepreneurial behaviors.

before anyone else could do it could foster the satisfaction of out-performing others. Economic incentives out of a strong IPR protection regime could provide thrust to the desirability to pursue entrepreneurial actions.

Weaker IPR on the other hand, could channel entrepreneurial behaviors into efforts that are unproductive or predatory in nature since more and more effort would be allocated towards disbursing entrepreneurial opportunities that aim at the redistribution of income and wealth (Henrekson 2007). Weaker IPR protection regime would mean that an entrepreneur's intellectual property is not securely protected, making it susceptible to expropriation and imitation by others. This could lead to a higher prevalence of unproductive entrepreneurship in such societies where intellectual property is not strongly protected.

The strength of IPR protection regime, either strong or weak, has profound influence on an individual's desirability to pursue entrepreneurial actions, such that strong IPR promotes those actions while weak IPR stifles them.

3.2.2 Rule of Law

A country's practiced rule of law ensures the enforcement of IPR protection regimes. In doing so, the rule of law ensures to safeguard innovating entrepreneurs' property rights from expropriation (Levie and Autio 2010). Coase (1960) argues that it is the exchange of property rights rather than the exchange of goods or services that is the soul of all transactions. Vaguely defined enforceability regime renders all such transactions susceptible to expropriation by more powerful agents (Besley 1995, Laeven and Woodruff 2007). An innovating entrepreneur's desired future state becomes risky and the returns to innovation remains uncertain if the mechanisms to enforce intellectual property rights are unclear (Levie and Autio 2010). Further, innovating entrepreneurs' incentive to explore possible opportunities are significantly reduced, creating a vicious cycle of missed opportunities instead of a positive feedback loop of learning (Foss and Foss 2005). Weaker regimes of rule of law also put the acquisition of infra-structure, investment in property, such as machinery or brands, etc, at considerable risk. The extent, to which the rule of law is enforced, therefore, is directly linked to an entrepreneur's return on his investment of time, effort and resources. Depending upon one's personal assessment of whether or not the extent of enforceability of

rule of law aides in utility-maximization, an individual's desirability to indulge into entrepreneurial actions would be greatly influenced.

3.2.3 Taxation

Favourable tax laws could lead to economic growth by its influence on entrepreneurial activities. Entrepreneurial activities primarily comprise of start-up firms that are engaged in high risk, high growth ventures (Cullen and Gordon 2002). These start-up firms are likely to enter as non-corporate firms that would subsequently go corporate if successful. The tax system would be expected to influence the extent to which these non-corporate firms would be willing to take risks in multiple ways.

First, it is easier for newer and smaller business owners to under-report their taxable than can wage and salary earners, suggesting that higher the tax rates stronger would be the incentive to open a new venture or business as a means to avoid taxes (Cullen and Gordon 2002). Second, already observed by Domar and Musgrave (1944) and elaborated in the context of entrepreneurial activity by Cullen and Gordon (2002) was the fact that high-marginal tax rates positively influences risk-taking activities. They argue that the mechanism through which this functional relation is brought about is due to the fact that a high tax rate regime signals that a substantial portion of the risk undertaken in an entrepreneurial activity is transferred to the government through random tax payments. The tax system therefore becomes a conduit through which a substantial portion of the risk is shared, such that with more risk sharing available, the premier associated with entrepreneurs' risk will be lower and the risk taking will be greater (Cullen and Gordon 2002).

Links between three formal institutions and entrepreneurship have been considered in the foregoing sections. These discussions are by no means exhaustive and there is scope to articulate on a number of additional formal institutions and their influence on entrepreneurship. However, based on a brief discussion, it seems apparent that incentives for entrepreneurial activities could regulate actions and promote greater indulgence in entrepreneurial process. Greater indulgence into such activities translates into a greater probability of creating new ventures which could create greater probability of triggering a chain reaction of further similar activities.

Formal institutions are incentive structures that act as channels through which entrepreneurs can appropriate rewards. The motivations to appropriate economic rewards and materialize utility-maximization, based upon the incentives offered by formal institutions, shape an individual's desirability towards the pursuit of entrepreneurial actions. While the extent of enforceability of formal institutions concerns an individual's rationales for the feasibility of entrepreneurial actions, the degree of economic incentives that individuals are likely to appropriate based on the structures of formal institutions concerns an individual's rationales for the desirability of such actions. Theoretical model that elucidates the mechanism through which formal institutions exercise their regulatory influence on entrepreneurial actions is shown Figure 9 below.

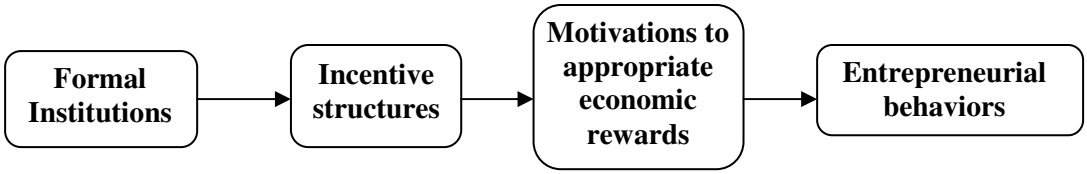


Figure 9 Mechanism of influence of formal institutions on entrepreneurial behaviors

Chapter 4: Social Reference-Group as a Context and its Influence on Entrepreneurial Actions

The recognition of the influence of social context on individual's entrepreneurial actions was further consolidated by undertaking a multi-level empirical investigation that looks into how prevailing norms in an individual's social reference group constitutes a regulatory influence on his or her entrepreneurial actions. This study integrates psychological and sociological theories of social norms and entrepreneurship into a multi-level model where entrepreneurial agents self-select to engage in growth-oriented behavior based on their perceived self-efficacy, exposure to social norms and learning from previous entrepreneurial experience. Multi-level selection analyses on a data set of 45 792 entrepreneurs reveal that while perceived ability and previous experience influence entrepreneurial growth aspirations, social norms simultaneously influence growth aspirations by moderating the influence of prior exit experience. The analysis contributes to demand-side explanations of entrepreneurship by highlighting the socially contextualized and socially consequential aspects of entrepreneurial behaviors. This comprehensive study is reported in the next section[2].

During recent years, demand-side explanations of entrepreneurial action have gained increasing traction in entrepreneurship research (Sorensen 2007, Thornton 1999). Rather than focusing on the variation in the supply of actionable entrepreneurial ideas and enterprising individuals, the demand-side perspective emphasizes the idea that the creation of new business organizations is not regulated by economic feasibility considerations alone, but also, by social desirability considerations (Jack and Anderson 2002, Uzzi 1997). For an individual to pursue entrepreneurial action, the individual needs to consider not only the economic payoff of the entrepreneurial action, but also, the social consequences. From this observation follows that a given third-person opportunity (opportunity for someone) may translate differently to a first-person opportunity (opportunity for me), depending on the social context within which the first-person evaluation is performed (McMullen and Shepherd 2006).

While the importance of social context for opportunity evaluation has been well established, there is a gap in studies to consider the joint effect of economic and social influences on entrepreneurial action. An important reason for this is the lack of appropriate datasets. Studies of economic motivations require rich data on individual motivations,

[2] I am the first author of this study. I acknowledge the valuable inputs of Prof Erkko Autio and Karl Wennberg who are my fellow co-authors on this study.

typically obtained through surveys. In such studies, variance in social contexts is typically zero, as most surveys are carried out within a single country or a given social context (Autio and Acs 2010). On the other hand, demand-side studies, while incorporating variance across social contexts, typically rely on archival or other secondary data, which frequently does not record data on economic motivations (Nanda and Sorensen 2010). The dearth of studies capturing both supply- and demand-side aspects is an important gap, since it means that we do not know exactly how context influences opportunity evaluation, and therefore, the allocation of effort to entrepreneurial action (Bowen and De Clercq 2008, Thornton 1999). In this chapter, our objective is to provide such an analysis, by considering the effect of social norms and exit experience on entrepreneurial growth aspirations by individuals.

Most of the received explanations of the variance in entrepreneurial activity emphasize the supply of economically attractive opportunities for entrepreneurial action as well as the availability of appropriately skilled individuals to take advantage of such opportunities (McMullen and Shepherd 2006). In many perspectives, entrepreneurial action follows almost automatically if risk-weighted cost-benefit analyses suggest that an opportunity exists to sell products and services at a price greater than the cost of their production (Kirzner 1997, Shane and Venkataraman 2000). In contrast, demand-side explanations emphasize the socially embedded nature of the entrepreneurial process and the socially conditioned rationality of opportunity evaluation and resource mobilization activities (Sternberg and Wennekers 2005). In such explanations, individuals look to social norms and attitudes for cues on the feasibility and desirability of entrepreneurial actions, and they form their motivations accordingly. Thus, social context matters for opportunity evaluation alongside with, and also beyond economic considerations.

In this chapter, we focus on opportunity evaluation by new entrepreneurs and consider the effect of both economic and social feasibility considerations on new entrepreneurs' motivation to pursue growth through a new venture. Specifically, we consider how the effect of an individual's self-efficacy beliefs and previous entrepreneurial experience on entrepreneurial growth motivation is moderated by group-level social norms. We start from the notion that entrepreneurship is both economically and socially consequential behavior. The evaluation of economic consequences of the allocation of effort into the pursuit of venture growth is influenced by the individual's attitudes, self-efficacy beliefs and previous entrepreneurial experience. Entrepreneurship is also socially consequential, in the sense that success or failure in entrepreneurial behaviors will influence how the individual is viewed by

his or her social peers. We maintain that social context matters for entrepreneurial behaviors, because individuals not only maximize economic utility, but also seek to behave in ways that are seen by others as legitimate – i.e., desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and motives (Suchman 1995).

Specifically, we theorize that the effect of a given individual's previous entrepreneurial experience on growth aspirations in subsequent entrepreneurial ventures is contingent on social norms that prevail in the individual's social reference group. We examine the effect of three such norms – group fear of failure, group self-efficacy, and group familiarity ties with entrepreneurs – on entrepreneurial behaviors by individuals. Our model theorizes both direct cross-level effects as well as cross-level moderation effects on the influence of an individual's prior exit experience in their subsequent entrepreneurial growth aspirations.

Our theoretical model seeks to provide theoretical, empirical, and methodological contributions to process models of entrepreneurship and to research on entrepreneurship as a career choice. We contribute to demand-side theories of entrepreneurship by constructing and validating a model that highlights entrepreneurship as a socially embedded behavioral process that is shaped by potentially counteracting forces at different levels of analysis. Our theoretical examination therefore contributes to a more situated understanding of entrepreneurial behaviors (Elfenbein et al. 2010, Nicolaou et al. 2008, Sørensen 2007). We also contribute to the process literature on entrepreneurship by integrating psychological and sociological models into a process model in which individuals self-select into growth-oriented entrepreneurial behavior on the basis of their perceived abilities, effectiveness, and the prevailing social norms, as well as their learning from prior entrepreneurial experience (Aldrich 1999, Ruef et al. 2003). Empirically, we contribute by showing how experiential learning from previous entrepreneurial activity influences ambition levels in subsequent entrepreneurial activity, and how social norms and attitudes moderate the effect of such experiences. Our analyses reveal that exit experiences insulate individuals against the negative group norm of fear of failure. Methodologically, we contribute by developing and applying a multi-level selection model which decreases potential endogeneity problems by controlling for self-selection of individuals into entrepreneurship.

We draw upon the psychological and sociological literature about the social influences on entrepreneurial behaviors to construct a theoretical model from which we derive testable hypotheses. These hypotheses are then tested empirically using a two-stage multi-level

equation that analyzes how individual-level outcomes are moderated by forces at multiple levels of analysis. The discussion section highlights our contributions and their implications for future research.

Behavioral Process of Entrepreneurship

A number of social science perspectives view entrepreneurship as a behavioral process rather than a single entry event (Aldrich 1999, Santarelli and Vivarelli 2007). The creation of new firms involves several steps during which decisions are made regarding the existence of an opportunity for someone, the feasibility of opportunity pursuit by the focal individual, and the allocation of effort and resources toward the pursuit of the opportunity (Eckhardt and Shane 2003, Schumpeter 1934, Shane and Venkataraman 2000). During each step, the focal individual considers the feasibility, desirability, and motivation to pursue the opportunity further (McMullen and Shepherd 2006). Further commitments to the process are made if the individual decides that there is a reasonable prospect of economic payoff, that the individual has the skills and aptitudes to pursue the opportunity further, and that the action is perceived as desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and motives (Autio and Acs 2010, Cassar 2006, McMullen and Shepherd 2006, Suchman 1995).

In our theoretical model, a favorable assessment of the feasibility of opportunity pursuit requires, firstly, the individual's belief that he or she will be able to effectively pursue the opportunity, and secondly, that the prevailing social norms in the individual's social referent group signal the feasibility and acceptability of entrepreneurial endeavors[3]. Because many entrepreneurial skills are tacit, the individual's previous entrepreneurial experience is likely to exercise a strong influence on personal feasibility considerations (DeTienne 2010, Wennberg et al. 2010). At the individual level, previous entrepreneurial experience facilitates learning and the accumulation of resources and social capital necessary for the successful pursuit of new ventures (Mason and Harrisson 2006, Wennberg et al. 2010). Our model predicts that personal feasibility considerations will be reinforced by the individual's previous enactment mastery experiences in complex social tasks (manifested as self-efficacy beliefs), by the individual's vicarious exposure to entrepreneurial actions (operationalized as

[3] Our model does not assess objective opportunity quality, although opportunity quality also obviously matters for opportunity pursuit.

familiarity ties with entrepreneurs) as well as the individual's own risk-bearing ability (operationalized as fear of failure).

Our model posits that personal feasibility considerations are carried out within a social context, and that this context therefore regulates the commitment of effort and resources to further opportunity pursuit. A starting point for our model building is the observation that individuals do not base economic decisions on rational utility maximization considerations alone, but rather also consider whether their actions are seen as valuable and appropriate by others (Klyver and Thornton 2010, Thornton 1999). Even where efficiency considerations might support entrepreneurial action, legitimacy considerations may inhibit the entrepreneurial choice. We therefore hypothesize that the effect of an individual's previous entrepreneurial experience on their entrepreneurial growth aspirations will be moderated by social group-level norms. The novel aspect in our model is its consideration of group-level effects on individual-level behaviors by integrating both direct group-level effects and cross-level moderating influences. Direct effects represent the direct influence of social context on individual behaviors. Cross-level moderating effects highlight how individuals react to their social context. Our theoretical model is illustrated in Figure 10.

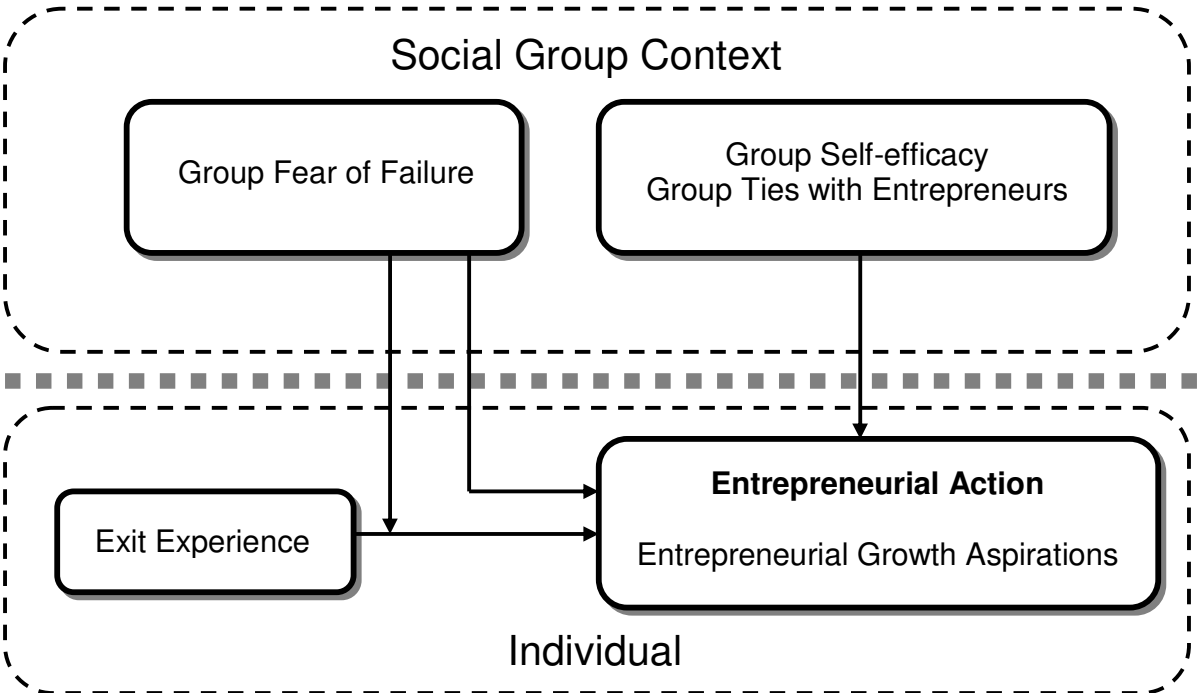


Figure 10 Theoretical model of the influence of social reference group on entrepreneurial behaviors

The model outlined in Figure 10 integrates individual-level attitudes, exposure, and experiences, with group-level social norms and group exposure to entrepreneurs. The dependent variable is individual-level aspirations for venture growth. This measure reflects the entrepreneur's willingness to assume entrepreneurial risk, since growth-oriented entrepreneurial behaviors are particularly risky (Autio and Acs 2010). In the theory building that follows, we first construct individual-level hypotheses about the effects of the (i) exit experience, (ii) entrepreneurial familiarity ties, and (iii) individual attitudes to entrepreneurial risk-taking behaviors. We then elaborate direct cross-level effects, as well as cross-level moderation effects.

4.1 Theory and Hypotheses

Individual experience and entrepreneurial growth aspirations

When potential entrepreneurs make choices, they are aware of the fact that entrepreneurial pursuits are inherently risky – that there is a chance that the venture may fail, potentially reflecting badly on the individual. Such awareness of the potential negative consequences of failed entrepreneurial endeavors may therefore inhibit individuals from pursuing growth through entrepreneurial ventures. We suggest that individuals will be less inhibited by potential negative consequences if they possess previous entrepreneurial experience

The creation or discovery of opportunities, the creation and sale of an entrepreneurial vision, accessing and mobilizing resources, and recruiting and motivating employees all involve complex social interactions with various stakeholders (Alvarez and Barney 2007, Ardichvili et al. 2003, Davidsson and Honig 2003, Elfring and Hulsink 2003). Because of this complexity, entrepreneurial skills and knowledge and social resources are best (and sometimes only) accumulated through experience (Béchard and Grégoire 2005, Corbett 2005, Safranski 2004). It follows that previous entrepreneurial experience itself – whether successful or not – is an important determinant of subsequent entrepreneurial performance (Davidsson and Honig 2003). In this chapter, we seek to contribute to the contextual perspective of entrepreneurship by investigating how and under what contextual contingencies an individual's entrepreneurial experience influences their subsequent entrepreneurial behaviors.

There is considerable evidence in the literature that both an individual's previous experience, as well as the context in which she is embedded, strongly matter for entrepreneurial behavior and performance (Hayton et al. 2002, Nanda and Sorensen 2010) For example, the Global Entrepreneurship Monitor reports substantial cross-country variance for both entry into entrepreneurship and entrepreneurial aspirations (Autio 2007). Similarly, the direct effect of previous exit experience has been well documented in previous research (DeTienne 2010, Wennberg et al. 2010). However, while the direct influences of both context and experience have been well documented, not much is known about how the two interact – i.e., how an individual's context regulates the ways with which that individual decides to leverage their experience in entrepreneurial ventures, or not do so. Given that cross-level direct and moderation effects are central mechanisms through which contextual influences operate (Johns 2006), this is an important gap from a contextual perspective.

Entrepreneurial skills and knowledge are mostly acquired through experience. Although other aspects of human capital may have an impact on an individual's entrepreneurial ability (Evans and Jovanovic 1989, Lazear 2004), previous entrepreneurial experience is likely to be the most important influence on entrepreneurial success. This is because one of the most powerful learning mechanisms is active mastery – i.e., learning by doing (Bandura 1977) and through improvisation and experience (Baker et al. 2003, Corbett 2005). The experience of resolving problems in new ventures prompts entrepreneurs to develop heuristics and organizing approaches that can be applied in analogous situations, such as subsequent ventures (Bingham et al. 2007, Gentner et al. 2003, Lewis et al. 2005, Wegner 1986). Studies of habitual entrepreneurs highlight the importance of previous entrepreneurial experience for the successful development and sale of an entrepreneurial venture, suggesting that previous mastery experience not only enhances prospects of success, but also increases the ambition level in subsequent ventures (Ucbasaran et al. 2009, Wennberg et al. 2010). Hence, we hypothesize:

> ***Hypothesis 1:*** *An individual's experience from previous entrepreneurial exits will be positively related to his or her growth aspirations in subsequent entrepreneurial ventures.*

Influence of Social Group Attitudes on Entrepreneurial Aspirations

So far, our theorizing is in line with traditional entrepreneurship research and focuses on the effects of individual-level motivations on individuals' entrepreneurial aspirations. Next we examine the joint influence of individual- and social group-level factors on entrepreneurial aspirations. We hope with this to extend the intention-based literature so as to take into account the transition to entrepreneurship as not only an , but also as a socially consequential process strongly influenced by the individual's social environment (Aldrich 1999, Ruef et al. 2003). Research on social structures and job search makes it clear that the perceived feasibility of a career choice is heavily influenced by the individual's social environment (Granovetter 2005, Sørensen 2007). An individual's opinions regarding available social opportunities and constraints are shaped by knowing about the career choices made by similar individuals and perceptions of their appropriateness (Dahl and Sorenson 2009). This suggests that stronger ties with entrepreneurs in the individual's social reference group will tend to enhance a given individual's engagement in entrepreneurial activity. We therefore hypothesize that:

Hypothesis 2a: *The existence of personal ties with entrepreneurs within individuals' social reference group will have a positive influence on their entrepreneurial growth aspirations.*

Social group attitudes are among the strongest social influences on individual perceptions of social norms. We define social norms as group-level shared ideas of 'appropriate' behaviors (Rimal et al. 2005). Perceived social norms may send positive or negative signals about the desirability of a given action, such as engaging in a new venture. Research to date in this area is sparse, and traditional work focuses mainly on the association between positive norms and entrepreneurial aspirations. For example, in a study of MBA students in ten countries, Begley and Tan (2001) found a positive association between the social status awarded to entrepreneurship (as perceived by the individual) and the individual's interest in becoming an entrepreneur. However, social norms can also encapsulate negative attitudes to entrepreneurship, especially in terms of failure. The way that a given individual's social referents are likely to interpret failure may influence the attitude to involvement in entrepreneurial activity by that focal individual. If the social norms are such that failure is

likely to reflect negatively on the individual, this will reduce the propensity to engage in risky behavior such as growth-oriented entrepreneurship (Falck et al. 2010). Indeed, both geographically embedded (Wagner and Sternberg 2004) and industrially embedded (Vaillant and Lafuente 2007) levels of fear of failure have been found to be negatively associated with start-up behavior. Hence, we expect that if the social norms indicate punishment for entrepreneurial failure, this will discourage entrepreneurial risk-taking by individuals:

Hypothesis 2b: *The prevalence of negative attitudes to failure within a given individual's social reference group will have a negative influence on the individual's entrepreneurial growth aspirations.*

Individual actions are likely to be regulated by social attitudes toward the feasibility of entrepreneurial behaviors. If social group attitudes signal a general belief that success is difficult to achieve in entrepreneurial ventures, this will accentuate individual-level concerns regarding negative social consequences of potential entrepreneurial failure (Bowen and De Clercq 2008, Cullen and Gordon 2007). Conversely, if the social reference group tends to see entrepreneurship as feasible, this may encourage the individual to start a new business (Krueger et al. 2000). We contend that a strong signal of feasibility is sent when many individuals within a given individual's social reference group express confidence they possess the necessary skills and competence to successfully launch an entrepreneurial venture. Such signals would translate into a higher perceived feasibility at the individual level, thereby boosting the individual's entrepreneurial aspirations. Therefore, we predict:

Hypothesis 2c: *The prevalence of entrepreneurial self-efficacy beliefs within a given individual's social reference group will exercise a positive influence on that individual's entrepreneurial growth aspirations.*

Cross-level Interactions between Group and Individual Attitudes

Tolerance of risk is an important regulator of entrepreneurial behavior generally and new venture growth behavior in particular (Knight 1921). We have proposed that some social contexts may be less conducive to risk-taking than others, in the main due to the negative social consequences of individual entrepreneurial failure (Hofstede et al. 1990). When an

individual's social reference group signals poor tolerance of failure, this increases the threshold for engaging in entrepreneurial activity (Gimeno et al. 1997). Fear of failure can be collective phenomenon: cultural studies of Japan, for example, reveal the prevalence of uncertainty-avoiding tendencies (Hofstede et al. 1990, Reynolds et al. 2003). Similarly, Ray argued that the cultural stigma of failure drives Singaporean entrepreneurs to strive ever harder to avoid exiting from entrepreneurship (Ray 1994). However, to the best of our knowledge, no research has investigated whether the collective fear of failure has a regulating effect on individual propensities, beyond its direct effect.

Our theoretical model suggests that negative social attitudes toward entrepreneurial failure will positively moderate the influence of previous exit experience on the individual's entrepreneurial new venture growth aspirations. This is because previous entrepreneurial experience may insulate the individual against the paralyzing fear of the negative social consequences of failure (Wennberg et al. 2010). Entrepreneurial experience is often applicable across ventures since many of the problems and chip will be similar (Westhead and Wright 1998). If the prevalence of negative attitudes to failure in the individual's social reference group is high, this will both increase the perception of negative social consequences of such (Bandura 1977) failures , and deter inexperienced individuals from attempting to grow an entrepreneurial venture. Conversely, individuals with previous exit experiences will feel more confident in their abilities and be less inhibited by negative signals from their social group. Therefore, we hypothesize that:

Hypothesis 3a: *If the prevalence of negative attitudes toward entrepreneurial failure is high within a given individual's social reference group, that individual's previous exit experience will exercise a stronger influence on his or her entrepreneurial growth aspirations.*

Above, we suggested that previous entrepreneurial experience helps to counter fears of negative social consequences of failure. The same theoretical logic suggests that also positive signals will influence entrepreneurial aspirations (Nanda and Sorensen 2010). Here, social group attitudes signaling positive perceptions of growth opportunities will enhance the individual's perception of the rewards to be obtained and will motivate experienced entrepreneurs to seek higher returns for their entrepreneurial human capital (Gimeno et al. 1997). Social group attitudes signal positive perceptions of growth opportunities will enhance

the individual's perception of social rewards associated with entrepreneurial success, and thus motivate experienced entrepreneurs to seek higher returns for their entrepreneurial human capital (Cassar 2006). Since entrepreneurship involves major investment of individual-specific human capital, financial resources and carries significant opportunity costs, the opportunity costs resulting from the exclusion of alternative career paths will tend to drive individuals with high human capital to compensate with faster growth (Autio and Acs 2010). Offsetting the opportunity costs will be easier for more experienced individuals, and the effect of previous exit experience will be stronger in social contexts that offer plentiful resources and opportunities. Environmental munificence will be signaled by the prevalence of awareness ties toward entrepreneurs within the individual's social reference group, and by positive group perceptions of the feasibility of entrepreneurial growth. Even if such perceptions are expressed by individuals who are not in direct contact with the focal entrepreneur, research has shown that the attitudes and behavior of demographically similar others can influence individual choices simply through exposure (Dobrev 2005). We hypothesize that if familiarity ties with entrepreneurs among the individual's social reference group are frequent, and if collective perceptions of self-efficacy are high, these social norms will boost the effect of previous entrepreneurial experience on subsequent growth aspirations:

Hypothesis 3b: *If the prevalence of personal awareness ties with entrepreneurs is high within a given individual's social reference group, the effect of that individual's previous exit experience on his or her entrepreneurial growth aspirations will be stronger.*

Hypothesis 3c: *If the prevalence of entrepreneurial self-efficacy beliefs is high within a given individual's social reference group, the effect of that individual's previous exit experience on his or her entrepreneurial growth aspirations will be stronger.*

4.2 Methodology

Data

Testing the above hypotheses involves joint considerations of individual-level, group-level, and cross-level moderating effects between the individual-level variables (e.g., experience of previous entrepreneurial activity) and social group-level data on social norms (e.g., social groups' fear of failure). To the best of our knowledge, the only suitable data to

allow cross-level analysis are provided by the Global Entrepreneurship Monitor (GEM). The GEM consortium conducts annual interviews with a minimum of 2,000 adults (18 – 64 years old) in more than 60 participating countries, to collect information about individuals' entrepreneurial activities and attitudes along with extensive demographic data[4]. We combined nine years (2000–2008) of the adult-population GEM survey data to construct a database of 902, 533 (un-weighted) interviews of these individuals in 63 countries. In this data set there were 45792 nascent and new entrepreneurs for whom data on growth aspirations was available. Since the GEM data set measures attitudes of all interviewed individuals, we used the same data set to compute indices of social group norms and attitudes, perceived self-efficacy, and vicarious exposure. We defined social reference groups on the basis of nationality, age, gender, education, and household income. The 45 792 observations were spread across 5 718 reference groups. In this initial dataset of 45 792 observations, the average number of referents were eight. This represented a very small reference group and was thought to have a potential endogeneity problem – the individual may affect the group rather than the group influencing the individual. To construct a more robust measure of social reference groups, we retained only those reference-groups that had at least twenty referents in them. This offered a reasonable assumption that the group was influencing the individual rather than the other way round. This resulted in a final dataset of 33,453 nascent and new entrepreneurs distributed across 1,624 reference groups.

The GEM survey data are weighted according to demographic variables, in order to ensure that they are as representative as possible of each country's adult population[5]. The quality of the GEM data is evidenced by its widespread use by economic policy-makers, economists and management researchers (Ardagna and Lusardi 2008).[6] The data collection by national survey vendors is supervised by teams of respected entrepreneurship academics from leading national universities. Country samples are typically collected via telephone surveys, using stratified random sampling and multiple weighting procedures. The average response rate is over 70%, and non-response rates to individual questions average less than 3%. Confidence in the quality of GEM data is warranted further by independent validation tests, including comparisons of GEM estimates of firm birth rates against US New Firm Census and Eurostat

[4] For a description of the content and procedures of the GEM study see Reynolds et al. (2005).
[5] Basic weights for each country include gender and age. Depending on the country, additional weights may be used, e.g., ethnic or religious affiliation, home region.
[6] See www.gemconsortium.org for a recent academic biography of GEM.

data (Reynolds et al. 2005), the World Bank's Entrepreneurship Survey dataset(Acs et al. 2008) and the Flash Eurobarometer Survey (Ardagna and Lusardi 2008)

GEM identifies three types of entrepreneurs. Nascent entrepreneurs are individuals in the process of trying to start a firm. New (or early stage) entrepreneurs are owner-managers of entrepreneurial firms established for less than 42 months. Established entrepreneurs are owner-managers of entrepreneurial firms older than 42 months. Because our analysis focuses on the strategic decision of a previous entrepreneur to allocate experiential learning and subsequently embark in an entrepreneurial activity, we analyze only nascent and new entrepreneurs.

Variables

The dependent variable in our study measures the entrepreneurial growth aspirations of identified nascent and new entrepreneurs. Each entrepreneur was asked to provide the number of employees they anticipated employing in the next 5 years. Because our theory is based on the influence of learning from prior entrepreneurial experience on current entrepreneurial activity, we argue that predicted growth is a better test of our theory than realized growth. Predicted growth is based on a 'best guess', under the condition of uncertainty, about the success of a new venture. Although our measure does not reflect actual growth and many entrepreneurs are known to be optimistic (Hayward et al. 2006), it nevertheless provides a good idea of the background considerations that determine the allocation of effort into the new venture, and thus, a direct proxy of entrepreneurial behaviors, regardless of whether they will be successful or not (Levie and Autio 2008).

The weighted average of expected jobs was 10 jobs in five years. A potential limitation of the GEM dataset is that it captures all types of entrepreneurial activity, including self-employment. This may raise concern that the data do not reflect 'true' entrepreneurship. To address this, we limit our analysis to predicted employment growth rather than the decision to enter any form of self-employment. Whereas self-employment seldom leads to the employment of others, entrepreneurial growth aspirations should be reasonably accurately reflected in employment growth aspirations of the new venture. Because the distribution was right-skewed, we used the natural logarithm of (growth aspiration + 1) in the analysis, while controlling for current employees.

Predictor Covariates

The individual-level predictors are derived from the GEM data set. Because GEM is a large-scale and very expensive social survey, only single-item dichotomous scales are used to measure each item.[7] We constructed four individual level predictors to capture attitudes affecting growth aspirations. Two of them (fear of failure and self-efficacy) are related to individual attitudes to growth.

Exit Experience[8]. Previous entrepreneurial experience is captured by responses to a question about whether the respondent in the prior 12 months sold, shut down, discontinued or quit a individually owned and managed business (1=yes).

Our theoretical model predicts that social group attitudes have a significant effect on the ambitions of a given individual. Investigating the potential influence of group social norms on entrepreneurial aspirations in a longitudinal, cross-national setting poses several methodological challenges: (i) the reference group measure must be relevant across national boundaries and cultural settings; (ii) since reference groups are known to be molded in an individual's adolescence, but then slowly change over the life cycle, any measure of reference group should include various factors, because the relative weights of those factors (e.g. education versus wealth) may change over time; (iii) the definition of a reference group

[7] The need for simplicity is greater because the GEM survey covers a number of countries on different continents. To minimize cultural biases, we use only dichotomous (yes/no) scales.

[8] Our theoretical pillars of experiential learning and active mastery, drawn from the psychological and management literatures in order to theorize about the value of exit experience, do not suggest that various types of exit experience is necessary for learning to occur. However, it is plausible that successful ventures may bring differential learning into play, compared to ventures that failed (Shepherd, 2003). To foreshadow our empirical exercise, we attended to this in a sub-group robustness test: For the 9 years included in our analysis, the GEM dataset provides information about the reason of an entrepreneurial exit for only 3 years (2006-2008). The reasons are classified in eight distinct categories: (1) An opportunity to sell the business, (2) The business was not profitable, (3) Problems getting finance, (4) Another job or business opportunity, (5) The exit was planned in advance, (6) Retirement, (7) Personal reasons and (8) An incident. As robustness tests, we isolated "good" and "ill" natured exit from the above mentioned categories. Responses corresponding to categories 1, 4, 5, 6 and 7 were combined together to form a good natured exit dummy, while 2, 3 and 8 yielded an ill natured exit dummy. We repeated all our analyses for groups of individuals with good and with ill exit experience. We observed no main or direct effect of good or ill exit experience on individual growth aspirations. Nor did we observe support for the cross-level moderation effect on the relation between group's fear of failure and bad exit experience. We, however, did find support for the interactions between group's fear of failure and good exit experience, as well group's ties with other entrepreneurs and good exit experience towards explaining growth aspirations. Both interaction terms were positive and significant at $p < 0.1$ and $p < 0.05$ level respectively. These results are available upon request.

must be sufficiently general that group-level influences are not endogenous to the individual's actions. Manski (1993) explains this as "the reflection problem that arises when a researcher observing the distribution of behavior in a population tries to infer whether the average behavior in some group influences the behavior of the individual that belongs to the group" (1993, p. 532). He points to a number of conditions where this problem is critical: "Inference is difficult or impossible if these variables are functionally dependent or statistically independent. The prospects are better if the variables defining reference groups and those directly affecting outcomes are moderately related in the population"(Manski 1993).

To satisfy these conditions, we draw on Mcpherson's (1983) homophily principle which states that people with similarities in one or more sociodemographic dimensions (e.g. gender, education, socioeconomic status) are more likely to socialize with them than others. This principle is supported by empirical evidence for a range of social behaviors, including those related to the formation of new firms (Ruef et al. 2003, Steffens et al. 2007). The homophily principle also alleviates the identification problem in that (i) education and gender are strong sorting mechanisms leading to the formation of reference groups, and (ii) education and gender are correlated with actual entrepreneurial behavior. We therefore operationalize reference groups according to the sociodemographic similarity of individuals along the dimensions of nationality, age, gender, education, and socioeconomic status. Nationality is a major differentiator, since it is difficult to assume any measurable social homogeneity across nations. Given the fact that people compare themselves with similar others (Miller and Prentice 1996), gender, education, and socioeconomic status are included as the strongest and culturally most salient sources of identification and socialization related to individuals. The opinions of educational peers are seen as being more influential than the opinions of other social groups (Falck et al. 2010). We therefore believe our reference group measure has strong construct validity, is relevant across countries and cultures and can be replicated and tested in other research. In using five variables to form a matrix of reference group affiliations, the definition provides sufficient flexibility to allow cross-national and temporal variances in the data. For example, in wealthier countries with a large middle class, education and gender might be a relatively stronger social sorting mechanism than in those where the distribution of wealth is more unequal. In countries with fairly equal numbers of male and female population, education or wealth might be relatively stronger sorting mechanism for reference group formation. We based our reference groups on nationality, gender (dummy

variable), age (5 categories: 18-26 years; 27-34 years; 35-42 years; 43-50 years; 51-64 years), education (five levels), and socioeconomic status (3 similar sized strata in each country), for each of the 63 countries in the GEM data set. From this emerges a time-variant matrix of reference group configuration of 33 453 nascent and new entrepreneurs in 1 624 reference groups. For each social group, we averaged individual-level responses to questions, using dummy variables to measure fear of failure, vicarious experience, and perceived self-efficacy. The group means of these variables were used as proxies for social group attitudes and vicarious experience. This gives us three social group-level predictor covariates for analysis, affording us the opportunity to observe the contextual influence of social norms on individual entrepreneurial aspirations.

Control Covariates

Individuals' entrepreneurial growth aspirations may be influenced by a number of factors other than previous entrepreneurial experience and attitudes. We controlled for age and age squared since age has an important influence on entrepreneurial behaviors. We also controlled for gender (male = 1, female = 2). Education and household income were controlled with categorical variables. Education includes five categories (none = 0, some secondary = 1, secondary = 2, post secondary = 3 and graduate = 4). Household income was categorized as three national income tiers (1=lowest, 2 = middle, 3 = highest). We included the entrepreneur's current number of employees to control for idiosyncratic variations in the initial conditions of the venture. We also included a dummy (1=OECD) that allowed us to control for differences in individual entrepreneurial growth aspirations across OECD and non-OECD countries. We controlled for other forms of entrepreneurial exposure with a dummy indicating whether the individual in the prior three years had provided funding for a new business started by someone else (1=yes). We also controlled for three additional individual-level factors. They are discussed below.

Familiarity Ties with Entrepreneurs. Vicarious experience is captured by a question asking the individual whether or not they know someone who started a business in the prior two years (1=yes)

Fear of Failure. Fear of failure is captured by a dummy variable (1=yes) that measures the individual's fear of the consequences of entrepreneurial failure.

Self Efficacy. The individual's self-efficacy is measured by a dummy for the possession of the knowledge, skills, and experience required to start a new business (Krueger et al. 2000) (1=yes).

Correction of Selection Bias

Individual entrepreneurial growth aspirations are observable only for those individuals who self-select to entrepreneurship. An individual's growth aspirations may be influenced by some of the factors that influence individual self-selection into entrepreneurship, creating potentially biased estimates (Denrell 2003, Özcan and Reichstein 2009). Such selectivity has the potential to introduce a sample bias and needs to be corrected for. In the entrepreneurship literature, application of the Heckman (1979) selection model has so far been limited to single-level settings (Sine et al. 2007), and no method has been proposed to account for selection bias influenced by higher-level attributes. Since both self-selections into entrepreneurship, as well as entrepreneurial growth aspirations may be triggered by contextual factors, we developed an ML Heckman selection model which allows us to control for self-selection into entrepreneurship through the inclusion in the selection equation of individual- and country-level variables. The individual-level factors included are age, gender, education, household income, fear of failure, familiarity ties with entrepreneurs, perceived self-efficacy, and micro angel activity. The country-level factors[9] are GDP per capita (purchasing power parity), mean centered square of GDP per capita (to capture any curvilinear effects), a dummy for transition economies[10], and rate of national entrepreneurial activity. Since multi-level selection (MLS) **is** a fairly recent methodological development (Rabe-Hesketh et al. 2002), we estimate the selection equation using a multi-level panel probit equation with the R software package (Kyriazidou 2001, Wooldridge 1995) We modeled the selection equation as a random intercept generalized linear mixed probit model fitted by Laplace approximation (Table 5), with individual-level instruments at level 1 and country-level instruments at level 2[11]. All 13 instruments were highly significantly associated

[9] We tested the inclusion of group-level instruments in the MLS equation. It made the ML probit model unstable in terms of convergence of log-likelihood, and the resulting inverse Mill's ratio became a statistically non-preferred multi-modal (more than one maxima) normal distribution.

[10] Transition countries are Bosnia and Herzegovina, China, Croatia, Czech Republic, Hungary, India, Kazakhstan, Latvia, Macedonia, Poland, Romania, Russia, Serbia and Montenegro, Slovenia.

[11] Given the complexity of the analysis procedure, we conducted the analysis using the Stata *gllamm* package. The maximum differences in the coefficients from the two approaches (R *lmer* and Stata *gllamm*) were less than 5%, suggesting there was no substantial loss of accuracy deriving from use of a Laplacian approximation of *lmer* in R compared to an adaptive quadrature approximation of *gllamm* in Stata.

with individual entrepreneurial entry ($p < 0.000$), suggesting strong self-selection. The ML selection correction parameter (λ) or the inverse Mill's Ratio (IMR), was subsequently calculated and inserted into the regression equation[12].

Analytical Procedure

The analysis was carried out in two stages. The first stage, MLS, yielded the selection correction parameter (λ: inverse Mill's Ratio), employed as control in the second stage. The second stage was based on an ML random coefficient model, with individual-level factors at level 1 and social group-level factors at level 2. Our data set is a cross-sectional panel grouped by country and year, combining individual and country level observations for the years 2000–2008. In hierarchical and clustered data such as these, the assumption of the independence of observations is violated. This increases the possibility of type II errors in ordinary least squares analysis because it under-estimates standard normal distribution. We therefore apply hierarchical linear modeling using generalized least squares (GLS) to estimate the fixed parameter and maximum-likelihood estimates of the variance components (Hofmann and Griffin 2000), employing an unstructured covariance specification (Snijders and Bosker 2004). The case for random effects analysis is that it allows the regression coefficients and intercepts to vary across countries, and makes it possible to test for cross-level moderation effects (Martin et al. 2007), employing an unstructured covariance specification (Snijders and Bosker 2004). The case for random effects analysis is that it allows the regression coefficients and intercepts to vary across countries, and makes it possible to test for cross-level moderation effects (Hofmann and Griffin 2000). GLS allows standard errors to vary across groups, and provides a weighted level-2 regression so that those groups with more reliable level-1 estimates are assigned higher weights and consequently have a greater influence in the level-2 regression. This produces more accurate estimates of the cross-level effects. In our data set, we have individual-level predictors of entrepreneurial growth aspirations, reference group-level controls and direct and moderation effects. Because we are interested in cross-level moderation effects, the regression model takes the following form (Snijders and Bosker 2004):

[12]A limitation of the *lmer* function of R is that it does not yield multi-level probit equation residuals. We wrote a new program for R so as to extract the standard normal probability distribution function (pdf) and cumulative probability distribution function (cdf) for the fitted model **[Xb]** of the ML probit and the ratio of the two (pdf/cdf), which become the selection correction parameter, known as the Inverse Mill's Ratio.

$$Growth_aspiration = \beta_{0j} + \beta_{pj}\{Level_1_predictors\} + \{Level_2_controls\} + r_{ij} \quad (1)$$

$$\beta_{0j} = \gamma_{00} + U_{0j} \quad (2)$$

$$\beta_{0j} = \gamma_{00} + \gamma_{01}\{\text{LEVEL_2_PREDICTORS}\} + U_{0j} \quad (3)$$

$$\beta_{pj} = \gamma_{p0} + \gamma_{p1}\{\text{LEVEL_2_PREDICTORS}\} + U_{pj} \quad (4)$$

where γ_{00} = mean of the intercepts across social reference groups (denoted by many as 'constant'), γ_{p0} = mean of the slopes across social reference groups, γ_{01} = level-2 slope, and γ_{p1} = coefficients of cross-level interaction terms. The combination ($U_{0j} + U_{pj}$) represents the random part of the equation, where U_{0j} and U_{pj} are social group-level residuals, and r_{ij} represents individual-level residuals. In other words, level-1 equation predicts the direct effects (or betas) of level-1 predictors on level-1 outcomes, while level-2 equations predict the effects (or gammas) of level-2 predictors on level-1 betas as well as on the level-1 intercept.

Our objective was to examine not only the existence and magnitude of the main effects of individual-level predictors and social group-level norms on individual entrepreneurial growth aspirations, but also to determine how these social norms operate to moderate the relationship between an individual's traits and attitudes and his or her growth aspirations. This objective implied a four-step testing strategy, given the multi-level character of our data. First, we estimated the amount of between-group variance in the data. This was achieved by including only the β_{0j} term in Equation (1) (i.e., dropping all controls and treating $\beta_{pj} = 0$) above and then modelling the β_{0j} term using Equation (2) above. This model was called the "null model" (shown in Model 1 of Table 6) and it estimated the random intercept γ_{00} as well as between-group variance component associated with the error term U_{0j}. Second, we tested a random intercept regression model using Equation (1), and as well as used Equation (2) to model the β_{0j} term to gauge the influence of individual-level predictors on entrepreneurial growth aspirations and check whether significant variance remained in intercepts across social reference groups after those predictors had been introduced. This model corresponds to Model 2 of Table 6 and yields the estimates for random intercept γ_{00} and between-group variance component associated with the error term U_{0j}. The existence of unexplained variance after the introduction of individual-level predictors is a significant precondition for testing group-level hypotheses. Third, we tested another random intercept model using Equation (1) in its entirety, as well as using Equation (3) to model the β_{0j} term to see if social group-level norms significantly influenced entrepreneurial growth aspirations. This model corresponds to

Model 3 of Table 6 and yields the estimates for random intercept γ_{00} and between-group variance component associated with the error term U_{0j}. This step provided an 'acid test' of the general importance of social group-level factors. Fourth, we tested a random coefficient model using Equation (1), (3) and Equation (4) to see the how social group-level norms moderated the relationship between individual-level predictors and growth aspirations. However, the error term U_{pj} in Equation (4) was not included in the model. This model corresponds to Model 4 of Table 6 which constitutes our fully saturated model[13]. A comparison between the variance components of the null model and model 4 indicates the variance explained by individual and social group-level norms. We employed restricted maximum likelihood (REML) estimation methods in all the tests. REML is preferred to maximum likelihood estimation "…as a method of estimating covariance parameters in linear models because it takes account of the loss of degrees of freedom in estimating the mean and produces unbiased estimating equations for the variance parameters" (Smyth and Verbyla 1996).

4.3 Results

Table 1 presents sample descriptive statistics. Table 2 presents the descriptive statistics for the dependent variable, predictors, interaction terms, and controls. Tables 3 and 4 provide the correlation matrix of growth aspiration with individual-level and social group-level predictors, respectively.

[13] We compared the estimates from each model with its random intercept only model; only the comparison based on Model 4 of Table 6 is presented here. We also compared the estimates from each model, with and without the inclusion of our selection correction parameter (λ); only the results of the comparison based on Model 4 of Table 6 are presented here. We also conducted an OLS regression on the full sample without selection correction, and compared the results with ML Model 4 of Table 6.

Table 1 Sample descriptive for the study of social norms on entrepreneurial actions

			Expected Jobs in 5 Years*						
Country	**N**	**%N**	**Min**	**Mean**	**Max**	**Age**	**Gender**	**Education**	**HHINC****
Argentina	853	1.86	0	7	300	36	1.40	2.48	2.09
Australia	712	1.55	0	6	500	41	1.48	2.70	2.21
Austria	148	0.32	0	26	3000	39	1.37	2.00	1.86
Belgium	413	0.90	0	7	271	37	1.31	2.69	2.11
Bolivia	470	1.03	0	3	100	36	1.51	1.98	1.94
Bosnia & Herzegovina	98	0.21	0	6	75	39	1.39	2.33	2.21
Brazil	1557	3.40	0	4	500	34	1.46	1.70	1.66
Canada	311	0.68	0	12	500	39	1.38	2.87	2.11
Chile	1753	3.83	0	13	1001	39	1.44	2.54	2.01
China	1231	2.69	0	30	2500	35	1.39	1.97	2.10
Colombia	1228	2.68	0	14	1000	36	1.45	1.99	1.59
Croatia	526	1.15	0	19	5000	37	1.33	2.02	2.28
Czech Republic	114	0.25	0	18	500	39	1.46	2.00	2.41
Denmark	786	1.72	0	11	1500	40	1.36	3.25	2.13
Dominican Republic	593	1.29	0	7	300	36	1.52	1.98	2.09
Ecuador	381	0.83	0	6	200	38	1.58	1.88	1.88
Egypt	248	0.54	0	22	2200	33	1.21	2.75	2.06
Finland	548	1.20	0	5	150	38	1.34	2.35	2.10
France	273	0.60	0	7	500	40	1.34	2.83	2.07
Germany	1761	3.85	0	12	2007	40	1.40	2.22	2.17
Greece	649	1.42	0	3	100	38	1.33	2.47	2.24
Hong Kong	282	0.62	0	26	3000	36	1.33	2.23	2.48
Hungary	436	0.95	0	6	500	39	1.38	2.22	2.24
Iceland	1205	2.63	0	13	1800	40	1.33	2.23	2.17
India	338	0.74	0	5	200	35	1.26	2.41	1.76
Indonesia	341	0.74	0	3	150	36	1.57	1.30	2.04
Iran	243	0.53	0	13	1000	32	1.22	2.21	1.87
Ireland	387	0.85	0	13	650	40	1.41	2.89	2.10
Israel	375	0.82	0	29	3000	36	1.31	2.80	2.16
Italy	211	0.46	0	5	200	39	1.32	2.48	1.94
Jamaica	1184	2.59	0	2	100	35	1.47	1.49	1.99
Japan	307	0.67	0	26	3000	43	1.38	2.92	1.90
Jordan	354	0.77	0	3	30	31	1.32	2.86	2.40
Kazakhstan	150	0.33	0	12	500	38	1.45	2.88	1.71
Latvia	209	0.46	0	43	5000	33	1.27	3.02	2.61
Macedonia	185	0.40	0	9	500	36	1.37	2.55	2.34
Malaysia	178	0.39	0	2	60	35	1.47	1.56	1.80
Mexico	534	1.17	0	3	100	37	1.43	2.44	2.07
Netherlands	792	1.73	0	11	900	41	1.37	2.47	2.20
New Zealand	292	0.64	0	9	300	40	1.52	2.93	2.00
Norway	655	1.43	0	8	700	40	1.29	2.81	2.23
Peru	2220	4.85	0	6	300	35	1.52	2.09	1.66
Philippines	384	0.84	0	3	100	39	1.55	2.05	2.18
Poland	189	0.41	0	6	500	35	1.35	2.35	2.05
Portugal	122	0.27	0	10	550	37	1.36	2.37	2.25
Romania	77	0.17	0	27	1000	39	1.32	2.87	2.55
Russia	87	0.19	0	25	1000	34	1.38	2.78	2.51
Serbia and Montenegro	179	0.39	0	21	3000	38	1.40	2.35	1.72
Singapore	653	1.43	0	13	300	37	1.32	2.79	2.33
Slovenia	557	1.22	0	15	500	37	1.31	2.47	2.32
South Africa	610	1.33	0	9	500	35	1.45	1.93	2.13
South Korea	367	0.80	0	24	3000	39	1.27	2.81	2.31
Spain	6424	14.03	0	5	600	39	1.38	2.33	2.07
Sweden	900	1.97	0	10	500	39	1.28	2.21	2.17
Switzerland	535	1.17	0	8	510	40	1.39	2.29	2.02
Thailand	1166	2.55	0	4	300	37	1.57	2.04	2.08
Turkey	316	0.69	0	37	2000	34	1.26	2.41	1.99
USA	2155	4.71	0	16	5000	40	1.37	2.86	2.14
Uganda	256	0.56	0	4	100	32	1.53	1.58	1.53
United Arab Emirates	163	0.36	0	29	400	34	1.13	2.70	1.55
United Kingdom	4741	10.35	0	11	4000	41	1.40	2.71	1.84
Uruguay	380	0.83	0	9	300	37	1.39	2.16	2.23
	45792	100.00	0	12	1102	37	1.38	2.38	2.08

Notes: Expected jobs in 5 years is excluding the focal entrepreneur

*Expected jobs in 5 years is the dependent variable of growth aspiration

Age is average age of respondents per country for years 2000-2008

**HHINC is household income tier: is average household income tier of respondents per country for years 2000-2008 and coded as Lower middle=1, Middle=2 and Upper middle=3

Notes: Gender is coded as Male=1 and Female=2:

Education is average education level of respondents per country for years 2000-2008: coded as None=0, Some secondary=1, Secondary=2, Post secondary=3 and Graduate=4:

Notes: N, N%, TEA%, and mean of expected jobs computed using population weights

Table 2 Descriptive statistics of dependent variables, predictors and controls used in the study of social norms on entrepreneurial behaviors

Individual-level Variables	N	Mean	Std. Dev.	Min	Max
Inverse Mills Ratio	45 792	1.49	0.37	0.50	3.15
Age	45 792	37.99	11.10	18	64
Gender	45 792	1.40	0.49	1	2
Education	45 792	2.36	1.10	0	4
Household Income Tier	45 792	2.03	0.81	1	3
Micro Angel	45 792	0.11	0.31	0	1
Exit Experience	45 792	0.10	0.30	0	1
Self-efficacy	45 792	0.86	0.34	0	1
Ties with Entrepreneurs	45 792	0.65	0.48	0	1
Fear of Failure	45 792	0.24	0.43	0	1
Current Jobs	45 792	5.96	111.39	0	8 500
Expected Jobs in 5 Years*	45 792	10.28	75.24	0	5 000

Notes: N, Mean and SD Columns present population-weighted values
Min and Max Columns present un-weighted values
* Expected jobs in 5 years is our dependent variable of growth aspirations

Social Group-level Variables	N	Mean	Std. Dev.	Min	Max
OECD Country dummy	45 792	0.57	0.50	0	1
Group Ties with Entrepreneurs	45 792	0.48	0.16	0	1
Group Fear of Failure	45 792	0.35	0.12	0	1
Group Self-efficacy	45 792	0.60	0.17	0	1

Notes: All Columns represent un-weighted values

Table 3 Correlation matrix of individual-level variables in the study of social norms on entrepreneurial actions

Individual-level Variables	1	2	3	4	5	6	7	8	9	10	11
(1) Age	1.00										
(2) Gender	0.01	1.00									
(3) Education	-0.01	-0.03	1.00								
(4) Household Income Tier	0.03	-0.09	0.22	1.00							
(5) Micro Angel	-0.01	-0.04	0.05	0.08	1.00						
(6) Exit Experience	-0.01	-0.02	-0.02	0.00	0.12	1.00					
(7) Self-efficacy	0.03	-0.09	0.06	0.06	0.02	0.03	1.00				
(8) Ties with Entrepreneurs	-0.09	-0.08	0.10	0.12	0.12	0.06	0.10	1.00			
(9) Fear of Failure	0.00	0.07	-0.05	-0.06	0.00	0.02	-0.16	-0.04	1.00		
(10) Current Jobs	0.01	-0.01	0.01	0.02	0.01	0.01	-0.01	0.00	-0.01	1.00	
(11) Expected Jobs in 5 years*	0.00	-0.04	0.04	0.04	0.03	0.02	0.01	0.02	-0.02	0.15	1.00

Correlation matrix based on 45 792 observations (sample size on which individual-level hypotheses were tested)
* Expected jobs in 5 years is our dependent variable of growth aspirations

Table 4 Correlation matrix of social group-level variables in the study of social norms on entrepreneurial actions

Social Group-level Variables	1	2	3	4	5
(1) OECD Country dummy	1.00				
(2) Group Ties with Entrepreneurs	-0.28	1.00			
(3) Group Fear of Failure	0.13	-0.35	1.00		
(4) Group Self-efficacy	-0.28	0.51	-0.40	1.00	
(5) Expected Jobs in 5 Years*	-0.01	0.04	-0.04	0.01	1.00

Correlation matrix based on 45 792 observations (sample size on which group-level hypotheses were tested)
* Expected jobs in 5 years is our dependent variable of growth aspirations

Self Selection into Entrepreneurship

The model in Table 5 below presents the multi-level random intercept probit odds ratio estimates for the influence of individual and country-level predictors on the probability of entrepreneurial entry. The odds ratio estimates greater than one signify positive association, and those lesser than one signify a negative association. At the individual-level, we observed that fear of failure reduces the probability of entering into entrepreneurship, by 20% (1 – 0.80) ($p < 0.001$), while exposure to other entrepreneurs, and micro angel activity increase this probability by 40% (1.39) ($p < 0.001$), and having self-efficacy beliefs almost doubles it (2.14) ($p < 0.001$). At the country level, transition economy status reduces the likelihood of individual-level entry by 20% ($p < 0.001$), and the rate of established business activity in a country increases an individual's probability of entrepreneurial entry by over ten times (10.49) ($p < 0.001$). These results consolidate the importance of correcting for self-selection by individuals moving into entrepreneurship.

Table 5 Effects on individual-level entry into entrepreneurship

Effects on Entrepreneurial Entry	
Individual-Level (Level-1) Predictors	
Age	0.99***(0.07)
Age (squared)	1.00***(0.00)
Gender	0.88***(0.01)
Education	1.01**(0.00)
Household income tier	1.04***(0.00)
Fear of failure	0.80***(0.001)
Ties with entrepreneurs	1.39***(0.001)
Self-efficacy	2.14***(0.001)
Micro angel	1.38***(0.01)
Country-Level (Level-2) Predictors	
Transition country	0.81***(0.02)
GDP per capita	1.00***(0.00)
GDP per capita (squared)	1.00***(0.00)
Rate of established business in a country	10.49***(0.02)
Model Fit Statistics	
Number of Observations	478074
Number of Groups[14]	259
Log Likelihood	-130721
Deviance[15]	261442
AIC[16]	261472
BIC[17]	261638
% of Variance Due to Random Component	7%

Note: Columns present odds ratio instead of regression estimates. Values greater than 1 signal positive association. Values smaller than 1 signal negative association
p < 0.001***; p<0.01**; p<0.05*; p<0.1+: standard errors in parentheses

Interclass Correlation Coefficient

Table 6 presents the effects of individual-level and social group-level predictors on individual-level growth aspirations that we use to test our hypotheses. All coefficients are non-standardized estimates, and the dependent variable is log transformed. Models 1 to 4 of Table 6 present the results of the various ML analyses, including both fixed and random variance estimates and model fit statistics. A precondition for multi-level analysis is that there is significant between-group variance of the dependent variable. To check this we performed

[14] These groups represent each country in the data set for each year. A unique ID is created for each country for each year of the survey, yielding a total of 259 such groups
[15] Deviance is calculated as (-2*Log Likelihood)
[16] AIC is Akaike's Information Criteria and is = (2*k – 2(Log Likelihood)), where k is the number of predictors in the model
[17] BIC is Bayesian's Information Criteria and is = (k*Log(N) – 2(Log Likelihood)), where k is the number of predictors in the model and N is the total number of observations

an ANOVA test on individual-level growth aspirations across social groups. This is shown as a null model in Model 1 of Table 6 that does not include any predictor variables.

Table 6 Effects on individual-level entrepreneurial growth aspirations

	Null Model- No Covariates	Individual-level Estimates with selection (λ)	Social Group-level Estimates with selection (λ)	Cross-level Moderation Estimates with selection (λ)
	(1)	**(2)**	**(3)**	**(4)**
Fixed Part Estimates				
Controls				
Inverse Mills Ratio (λ)		0.67***(0.03)	0.72***(0.04)	0.72***(0.04)
Age		-0.01***(0.00)	-0.01***(0.00)	-0.01***(0.00)
Age (squared)		-0.00***(0.00)	-0.00***(0.00)	-0.00***(0.00)
Gender		-0.32***(0.01)	-0.28***(0.01)	-0.28***(0.01)
Education		0.11***(0.00)	0.11***(0.00)	0.11***(0.00)
Household income tier		0.14***(0.00)	0.12***(0.01)	0.12***(0.01)
Current jobs		0.00***(0.00)	0.00***(0.00)	0.00***(0.00)
OECD country dummy		-0.25***(0.01)	-0.23***(0.01)	-0.23***(0.01)
Micro angel dummy		0.43***(0.01)	0.44***(0.01)	0.44***(0.01)
Self-Efficacy		0.58***(0.01)	0.61***(0.01)	0.61***(0.01)
Ties with entrepreneurs		0.32***(0.01)	0.33***(0.01)	0.33***(0.01)
Fear of failure		-0.22***(0.01)	-0.22***(0.01)	-0.22***(0.01)
Individual Level (Level-1)				
Exit experience **(H1: positive)**		0.08***(0.01)	0.08***(0.01)	0.08***(0.01)
Social Group-level (Level-2)				
Ties with entrepreneurs (group average) **(H2a: positive)**			0.17*(0.07)	0.17*(0.07)
Fear of failure (group average) **(H2b: negative)**			-0.41***(0.06)	-0.41***(0.06)
Self efficacy (group average) (H2c)			0.01(0.05)	0.01(0.05)
Interaction Terms				
Group Fear of Failure*Exit experience (H3a)				0.01***(0.00)
Group Ties with entrepreneurs*Exit experience				-.002(0.00)
Group Self-efficacy*Exit experience				-0.00(0.00)
Random Part Estimates				
Variance of Intercept	0.16(0.008)	0.09(0.005)	0.07(0.005)	0.06(0.005)
Variance of overall residual	1.23(0.009)	1.23(0.009)	1.23(0.009)	1.23(0.009)
% of Variance Explained	11.5	7	5.4	5
Model Fit Statistics				
Number of Observations	33453	33453	33453	33453
Number of Groups	1624	1624	1624	1624
Average Observations per group	21	21	21	21
Number of Predictors in the Model	0	13	16	19
Chi-Square	1736***	1428***	1464***	1464***
Log Likelihood	-51985	-51446	-51436	-51433
Deviance	103970	102892	102872	102866
AIC[18]	103970	102918	102904	102904
LR Test: Chi Square (Significance)	-	***	***	+

Notes: p<0.001***; p<0.01**; p<0.05*; p<0.10+: standard errors in parentheses
2-tailed significances: Non-standardized GLS coefficients
Dependent variable of growth aspiration is log-transformed

The variance component corresponding to the random intercept is 0.16. This estimate is substantially larger than its standard error (0.008), suggesting the existence of large variations in mean values across social groups. The interclass correlation coefficient is 0.115 (0.16/ (0.16 + 1.23)), indicating that approximately 11.5% of the total variance in the dependent variable is between reference groups. A chi-square test confirms a highly significant

[18] AIC is Akaike's Information Criteria and is = (2*k – 2(Log Likelihood)), where k is the number of predictors in the model

between-group variance of the dependent variable (χ^2 = 1736; df = 0; p < 0.000)[19]. Since we observe significant between-group variance as indicated by ICC value, it's a precondition to conduct multi-level analysis to test both level-1 and level-2 along with cross-level moderation hypotheses.

Effect of Individual Experience on Growth Aspirations

Model 2 of Table 6 shows the influence of individual-level previous exit experience (hypothesis H1) on the individual's growth aspirations[20]. An individual's previous exit experience (β= 0.08: p < 0.000) was observed to be positively associated with individual level growth aspirations. The coefficient suggest that having previous exit experience increases growth aspirations by 8% (exp (0.08) = 1.08. These findings support hypothesis H1. Self-selection for entry into entrepreneurship positively influences an individual's growth aspirations (p < 0.001).

The random component estimates (given by the variance component associated with the intercept term) shown in Model 2 of Table 6 show that the percentage of residual variance was 7% (0.09/ (0.09+1.23)). The reduction in the variance component associated with the intercept, from 11.5% in the Null model to 7% in Model 2, suggests the controls and the individual-level predictor of exit experience explain about 40% of the variance in intercept that existed between social groups, leaving the rest of the variance unaccounted for. A likelihood ratio test indicated that the random intercept specification provided a significantly better fit than fixed-coefficients specification (df = 1; χ^2 = 533; p < 0.000), indicating highly significant between-group variance in intercepts. The standard errors associated with the variance components corresponding to the random intercept as well as the residual are shown in parentheses below the section "Random Part Estimates" in Table 6. The variance component of the random intercept is 0.09 and is significantly larger than its standard error (0.005), suggesting there is remaining significant unexplained variance in the intercept across groups. This allowed us to test the group-level hypotheses to see if addition of group-level predictors could help explain the variance that remained unexplained.

[19] χ^2 = chi-square: df = degree of freedom

[20] The dependent variable of growth aspiration is log transformed in all our analyses. A unit change in a predictor would thus result in a 100*(coefficient of the predictor) % change in the dependent variable.

Effect of Social Norms and Attitudes on Growth Aspirations

Model 3 of Table 6 shows the influence of three social group-level predictors: group's ties with other entrepreneurs (hypothesis H2a), group's fear of failure (hypothesis H2b) and group's self-efficacy (hypothesis H2c) on the individual's growth aspirations. Model 3 shows that a higher level of exposure to other entrepreneurs in the individual's social reference group has a positive influence on growth aspirations ($\beta = 0.17$: $p < 0.05$), in contrast to the social group's negative attitudes towards failure ($\beta = -0.41$: $p < 0.000$). These coefficients suggest that exposure to other entrepreneurs in the individual's social reference group increases the growth aspiration of entrepreneurs in our data set by 18% (exp (0.17) = 1.18), and that reference group's perceived fear of failures decreases individual-level growth aspirations by 34% (exp (-0.41) = 0.66). The reference group's perceived entrepreneurial self-efficacy, although observed to be positively related to individual-level growth aspirations, was not statistically significant ($\beta = 0.01$: $p < 0.90$). These findings together support hypotheses H2a and H2b, but not H2c.

The random component estimates suggest that the remaining residual variance was 5.4% (0.07/ (0.07+1.23)). Thus, the three additional group-level predictors explained an additional 23% of the variance in intercept that existed between groups. The likelihood ratio test was again highly significant (df = 1; $\chi^2 = 265$; $p < 0.000$).The standard errors associated with the variance components corresponding to the random intercept, as well as the residuals, are shown in parentheses under the section "Random Part Estimates" in Table 6. The variance component of the random intercept is 0.07, still significantly larger than its standard error (0.005), suggesting that there remains significant unexplained variance in the intercept across groups. This allowed us to test the cross-level moderation hypotheses in order to see if addition of interaction terms could help explain the remaining unexplained variance.

Cross-Level Moderating Effects between Individual and Social Group

Model 4 of Table 6 shows the moderation effect of three social group-level predictors: group's fear of failure (hypothesis H3a), group's ties with other entrepreneurs (hypothesis H3b) and group's self-efficacy (hypothesis H3c) on the relationship between an individual's previous exit experience and growth aspirations. Because model 4 includes interaction terms, the marginal fixed effect of each variable will depend on the value of the other variable(s) in

the interaction. We note a positive interaction ($\beta = 0.01$: $p < 0.000$) between group-level fear of failure and an individual's previous experience of his or her growth aspirations.

Figure 11 (shown below) is a graphical representation of this interaction effect, showing that in social reference groups with generally low levels of fear of failure, individuals with previous exit experiences have 6% higher growth aspirations than those without any exit experience. We also observe that in social reference groups where fear of failure is higher, individuals with previous exit experiences have 12.5% higher growth aspirations than those without any exit experience. This suggests that an individual's capital accumulated from previous exit is predominantly a stronger predictor of his or her growth aspirations when and where the prevailing social norms have strong punishing attitudes towards failure. When the two plots in Figure 11 are compared, it is observed that growth aspirations of individuals with previous exit experience in social reference groups with high fear of failure were invariably lesser than those in groups with low fear of failure (the dotted line is always below the solid line), indicating that social reference group's negative attitudes towards failure inhibits an individual's entrepreneurial growth aspirations. Consequently, these findings suggest that it matters more to have exit experience when prevailing social norms are punishing towards failure, and that the significance of exit experience is not felt that strongly in groups that are moderately tolerant towards failure. These findings support our hypothesis related to cross level interactions, that social reference group's fear of entrepreneurial failure will positively moderate the effect of an individual's experience from previous entrepreneurial exit on their entrepreneurial growth aspirations.

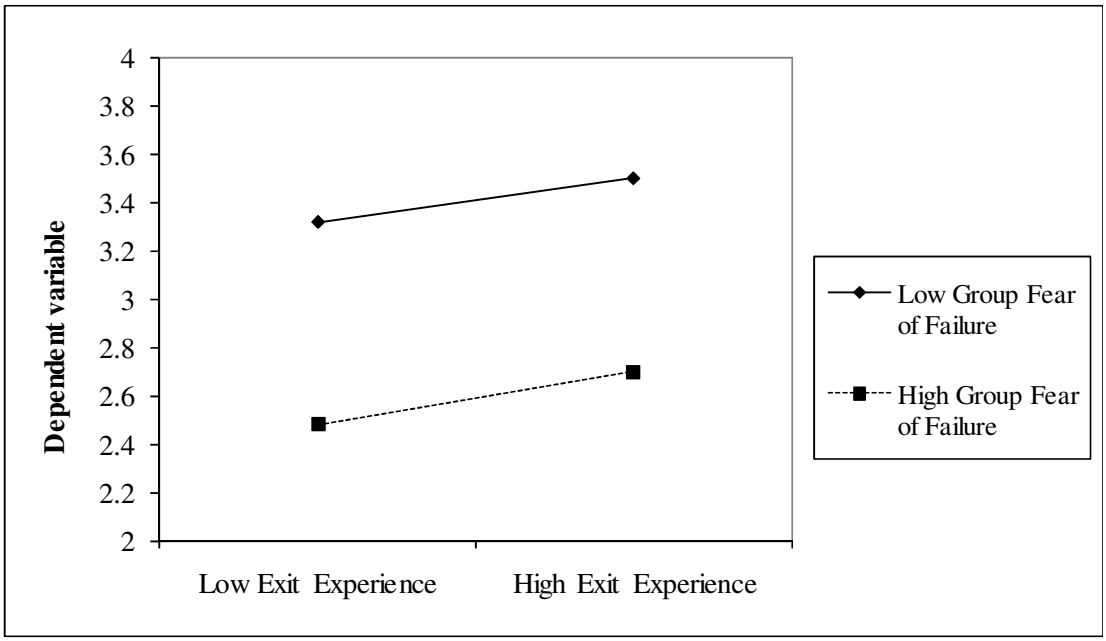


Figure 11 Interaction between social reference group's fear of failure and individual's exit experience

The hypothesized cross-level moderating on individual's growth aspirations (hypotheses 3b and 3c) pertaining to the effects of personal awareness ties with entrepreneurs and prevalence of entrepreneurial self-efficacy in a given social reference group were in the expected direction, however they failed to show statistical significance. As a result, we reject these two cross-level moderating effects, indicating that the negative social influence of fear of failure in an individual's social reference group is potentially more an important contingency factor. Combined these findings support hypothesis H3a but not H3b and H3c.

Model Fit Statistics

In order to consolidate our findings, pair wise likelihood ratio (LR) tests were conducted between Models 2 and 3 and between Models 3 and 4 of Table 6. This allowed us to verify if the addition of three social group-level predictors and interaction terms significantly improved the model fit. The LR and chi-square tests we performed indicate this to be the case. The observed pattern of a decrease in the values of log likelihood (absolute), AIC and deviance for models in Models 2 to 4 signify that the addition of social group level predictors and the interaction terms improve the fitness of the models.

The standard errors associated with the variance components corresponding to the random intercept as well as the residual are shown in parentheses in the section "Random Part Estimates" in Table 6. The variance component of the random intercept is 0.06 and is still significantly larger than its standard error (0.005), suggesting that there remains significant unexplained variation in the intercept across countries. This could be a potential limitation in our methodology. We can overcome it by including additional group-level predictors and allowing the error terms associated with the slopes of level-1 predictor to vary across groups in all our models. However, the reduction of the variance component from 11.5% in the Null model (Model 1 of Table 6) to 5% in Model 4 of Table 6 suggests that more than half (60%) of the variance in intercept across groups can be explained by our final model.

Robustness Analysis

Given the large number of observations and heterogeneity of our data, there is a possibility that the results may be driven by a few influential outlying nations or social groups, or the econometric evidence might be tainted by some unobservable effect that we have failed to detect (Kozlowski and Klein 2000). To investigate this possibility we conducted an additional robustness test on the existence of influential outlier groups overly influencing results, and experimented with various alternative definitions of social group. First, we created three additional social groups based on three different combinations of age, country, gender, education, and household income. The composition of the four reference groups is depicted in Figure 10 and presented in Table 7.

Table 7: Descriptive summary of reference groups

Group Name	No. of Groups	Group formed using
ref_group1	1624	Age category, country, gender, education, household income
ref_group2	574	Country, gender, education, household income
ref_group3	862	Age category, country, gender, education
ref_group4	829	Age category, country, gender, household income

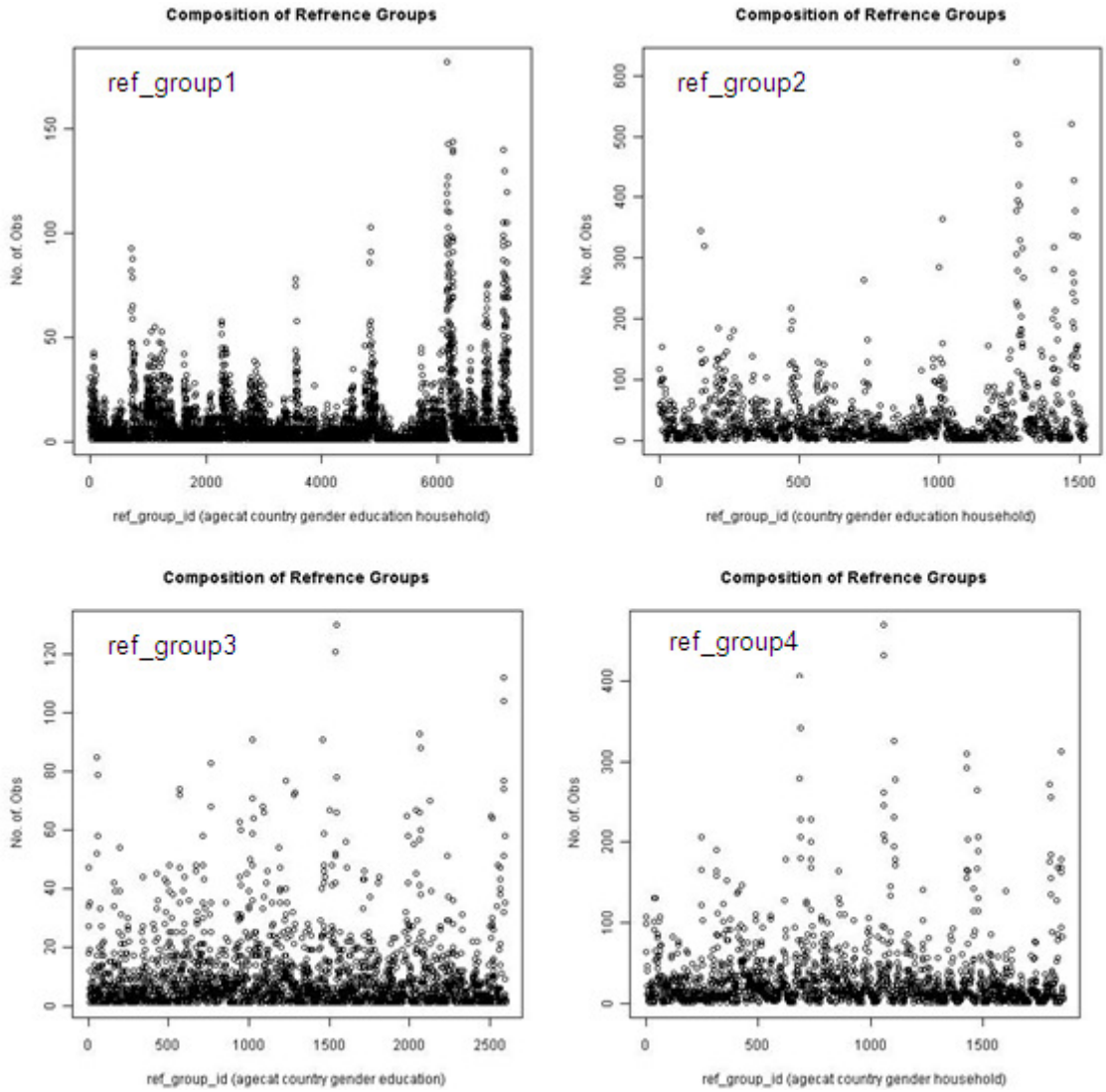


Figure 12 Compositions of social reference groups

Second, we repeated Models 2, 3, and 4 of Table 6, for each of the three social groups created to check the influence of each group on individual-level entrepreneurial growth aspirations. We compared the estimation results[21] which are reported in Table 8 below. Using these different social groups for the estimation did not significantly alter the results; it is legitimate to conclude that neither the exact choice of the social control group nor the average number observations per group have a significant influence.

[21] Results of comparison based upon only the full model (Model 4 of Table 6) using the four different social groups are reported in Table 8.

Table 8 Comparison of regression estimates using different reference groups

VARIABLES	Ref_group1	Ref_group2	Ref_group3	Ref_group4
Inverse Mills Ratio	0.72***	0.57***	0.64***	0.67***
Age	-0.01***	-0.01***	-0.01***	-0.01***
Age (squared)	-0.00***	-0.00***	-0.00***	-0.00***
Gender	-0.28***	-0.29***	-0.26***	-0.28***
Education	0.11***	0.11***	0.11***	0.11***
Household income tier	0.12***	0.12***	0.12***	0.15***
Current jobs	0.00***	0.00***	0.00***	0.00***
OECD country dummy	-0.23***	-0.23***	-0.23***	-0.21***
Micro angel dummy	0.44***	0.39***	0.41***	0.42***
Exit experience dummy	0.08***	0.08***	0.08***	0.08***
Self-Efficacy Dummy	0.61***	0.51***	0.56***	0.58***
Ties with Entrepreneurs	0.33***	0.30***	0.31***	0.32***
Fear of failure dummy	-0.22***	-0.19***	-0.21***	-0.21***
Ties with entrepreneurs (group average)	0.17*	0.22*	0.24**	0.1
Fear of failure (group average)	-0.41***	-0.31***	-0.38***	-0.47***
Self efficacy (group average)	0.01	0.01	0.02	0.01
Group Fear of failure*Exit experience	0.01***	0.01***	0.01***	0.01***
Group Ties with entrepreneurs*Exit experience	-0.002	-0.004	-0.003	-0.003
Group Self-efficacy*Exit experience	-0.00	-0.00	-0.00	-0.00
Number of observations	33453	33453	33453	33453
Average number of observations per group	21	58	38	40
Number of Groups	1624	574	862	829
Chi Square	1464***	943***	1411***	1202***
Number of Predictors	19	19	19	19
Log Likelihood	-51430	-51263	-51377	-51359

Notes: p<0.001***; p<0.01**; p<0.05*; p<0.10+

2-tailed significances (hypotheses 1-tailed): Non-standardized GLS coefficients

We performed additional robustness checks by performing two regressions: one without the selection correction parameter and the second as an OLS estimate of the full model. These are shown in models 2 and 3 respectively of Table 9 below. This was done to see if exclusion of selection correction parameter and performing OLS as opposed to GLS showed any significant changes in results or not. Model 2 of Table 6 reports the full model without controlling for self-selection into entrepreneurship, in order to highlight the different results when self-selection is not corrected for in the models. Observed differences in the magnitude and statistical significance of the coefficients in Models 1 and 2 indicate that the estimates of the influence of various individual and group-level predictors on growth aspirations, with no correction for self-selection into entrepreneurship, are underspecified and may yield biased results. It is noteworthy that this model suggests the group's perceived self-efficacy to be negatively associated with the individual-level growth aspirations, but finds no support for group's ties with other entrepreneurs. Moreover, the model predicts weaker estimates of the individual-level coefficients. Model 3 of Table 9 reports the OLS estimate for the full model without correcting for selection. The coefficients of the OLS regression differ from those

presented in Model 1 of Table 9, showing that individual-level coefficients are markedly weaker when estimated with OLS, substantiating the usage of a ML GLS model. It is noticeable that the OLS model yields group's perceived self-efficacy to be negatively associated with the individual-level growth aspirations. Moreover, OLS would not predict the proportion of the total variance in intercept that resides between groups. This information is obtained by the use of a multi-level GLS approach.

Table 9 Comparison of multi-level estimates with OLS and no selection (λ) models

	Cross-level Moderation Estimates with selection (λ)	Full Model without selection	OLS full sample without selection
	(1)	**(2)**	**(3)**
Fixed Part Estimates			
Controls			
Inverse Mills Ratio (λ)	0.72***(0.04)		
Age	-0.01***(0.00)	-0.004***(0.00)	-0.003***(0.00)
Age (squared)	-0.00***(0.00)	-0.00(0.00)	0.00(0.00)
Gender	-0.28***(0.01)	-0.26***(0.01)	-0.25***(0.01)
Education	0.11***(0.00)	0.10***(0.00)	0.08***(0.00)
Household income tier	0.12***(0.01)	0.12***(0.01)	0.11***(0.00)
Current jobs	0.00***(0.00)	0.00***(0.00)	0.00***(0.00)
OECD country dummy	-0.23***(0.01)	-0.07***(0.01)	-0.21(0.01)
Micro angel dummy	0.44***(0.01)	0.24**(0.01)	0.26***(0.01)
Self-Efficacy	0.61***(0.01)	0.14***(0.01)	0.16***(0.01)
Ties with entrepreneurs	0.33***(0.01)	0.14***(0.01)	0.14***(0.01)
Fear of failure	-0.22***(0.01)	-0.1***(0.01)	-0.10***(0.01)
Individual Level (Level-1)			
Exit experience **(H1: positive)**	0.08***(0.01)	0.08***(0.01)	0.08***(0.01)
Social Group-level (Level-2)			
Ties with entrepreneurs (group average) **(H2a:positive)**	0.17*(0.07)	0.12(0.06)	0.15*(0.04)
Fear of failure (group average) **(H2b: negative)**	-0.41***(0.06)	-0.47***(0.06)	-0.27***(0.05)
Self efficacy (group average) (H2c)	0.01(0.05)	-0.23**(0.05)	-0.17**(0.04)
Interaction Terms			
Group Fear of Failure*Exit experience (H3a)	0.01***(0.00)	0.01***(0.00)	0.01***(0.00)
Group Ties with entrepreneurs*Exit experience	-.002(0.00)	-.002(0.00)	-.002(0.00)
Group Self-efficacy*Exit experience	-0.00(0.00)	-0.00(0.00)	-0.00(0.00)
Random Part Estimates			
Variance of Intercept		0.07(0.005)	
Variance of overall residual	0.06(0.005)	1.23(0.009)	
% of Variance Explained	1.23(0.009)	5.4	
Model Fit Statistics	5		
Number of Observations	**33453**	33453	33453
Number of Groups	1624	1624	
Average Observations per group	21	21	
Chi-Square	1464***	1319***	
Log Likelihood	-51433	-51418	
AIC[22]	102904	102870	
LR Test: Chi Square (Significance)	+	-	

Collienarity diagnostics

Finally, we also checked if any of the predictors as well as the dependent variable suffered from issues of multi co-linearity. The standard practice is to report the variance-inflation factor (VIF), the tolerance measure (1/VIF) and the R-squared (1 minus tolerance) value as

[22] AIC is Akaike's Information Criteria and is = (2*k – 2(Log Likelihood)), where k is the number of predictors in the model

measures that signals whether any variable suffers from issues of multi co-linearity. A VIF value less than 10 and hence a tolerance of greater than 0.1 marks the safe range, suggesting that variables do not suffer from multi co-linearity. Table 10 below reports the results of the tests performed to verify whether any of the variables used in this study suffered from multi co-linearity. We observe that as per conventions, none of our variables suffer from multi collinearity.

Table 10 Collienarity diagnostics

Variable	VIF	Tolerance	R-squared
Inverse Mill's Ratio	4.70	0.21	0.78
Age	1.31	0.76	0.23
Age (squared)	1.10	0.91	0.08
Gender	1.32	0.75	0.24
Education	1.22	0.82	0.18
Household income	1.26	0.79	0.20
Current jobs	1.02	0.97	0.02
Growth Aspirations	1.03	0.97	0.02
Transition Economy	1.04	0.95	0.05
OECD country dummy	1.99	0.50	0.49
Micro business angels	1.04	0.95	0.04
Exit experience	1.07	0.93	0.06
Self efficacy	1.09	0.91	0.08
Ties with other entrepreneurs	1.11	0.90	0.09
Fear of failure	1.07	0.93	0.06
Fear of failure (group average)	1.37	0.73	0.26
Ties with entrepreneurs (group-average)	2.93	0.34	0.65
Self-efficacy (group-average)	2.21	0.45	0.54
Group Fear of Failure*Exit experience	1.41	0.71	0.29
Group Ties with entrepreneurs*Exit experience	1.39	0.71	0.28
Group Self-efficacy*Exit experience	1.42	0.70	0.29

4.4 Conclusions

This chapter demonstrates the effects of the prevailing norms in an individual's social reference group-level on individual-level growth aspirations. Still, we find that group-level moderation effects are weaker than the direct effects of individual-level direct predictors on entrepreneurial growth aspirations. The control variables of age, gender, education, and income, and business angel activity, familiarity ties with other entrepreneurs and self-efficacy fear of failure as well as the predictor variable of exit experience , all exhibit direct influences on growth aspirations, which are stronger than their moderating influences. Hence,

although our analyses provide evidence that individual entrepreneurial growth aspirations cannot be accounted for by individual-level attributes only, the individual remains a central agent in entrepreneurial endeavors. Our conceptual model therefore offers an extension to existing research studies rather than overturning them. Although our cross-national data provides some safeguard against the possibility of selection and sorting in economies characterized by a higher proportion of large and small firms represents an alternative explanation for our finding, the unmeasured variation pertaining to entrepreneurs prior workplace characteristics represents an important additional source of contextual explanation of both entrepreneurial entry rates and growth (Sorensen and Fassiotto 2011).

In this study we applied a multi-level research design to address the question of why some individuals seek growth in their entrepreneurial ventures, while others do not. In spite of extensive evidence pointing to the importance of high-growth firms for economic development (Acs et al. 2008, Henrekson and Johansson 2010), little work has been done on what determines entrepreneurial growth aspirations for young firms. This is an important gap given the large number of studies that highlight the important role of entrepreneurial entry for job creation. Our conceptual focus is on how the individual's exit experience from previous entrepreneurial efforts as well individual's social reference group moderate the propensity of individuals to pursue entrepreneurial growth. Given the absence of research on the multi-directional influences of norms and the competing theoretical perspectives in sociological and social psychological research, we hypothesized how social group-level influences would be contingent on previous exit experience. Specifically, our analyses revealed that exit experiences serves to partly negate the negative effect of collective fear of failure on growth aspirations. In addition to advancing theoretical models of entrepreneurship and career choice, our detailed findings present general conclusions and information for managerial practice and public policy making that seek to promote entrepreneurship. Specifically, the findings from our multi-level process model should be useful for practicing entrepreneurs, since they indicate that repeat, or "die-hard" entrepreneurs (Burke et al. 2008) suffer less from negative social attitudes, but are positively influenced by social norms beneficial to growth-oriented entrepreneurship. This chapter also suggests that policy-makers would be wise to strive to promote serial entrepreneurship as a way to increase entrepreneurial experience and reduce fear of failure.

Chapter 5: National Cultural Orientations as a Context and its Influence on Entrepreneurial Actions

We observed the influence of different dimensions of culture on the feasibility and desirability to engage in entrepreneurial actions. An individual's socially and culturally conditioned rationality thus influences his or her pursuit of entrepreneurial actions. Although national culture is an important regulator of entrepreneurship, only few studies have explored the effect of national cultural norms on individual-level entrepreneurial behaviours, and no published studies have used appropriate multi-level research designs. In our second empirical study, we combined Global Entrepreneurship Monitor (GEM) and Leadership and Organizational Behavior Effectiveness (GLOBE) data from 28 countries to analyse associations between national cultural norms and individuals' entrepreneurial behaviours. It was found that while institutional collectivism associated *negatively* with entrepreneurial entry suggesting that individualistic orientations encourage entry, societal-level institutional collectivism associated *positively* with individual-level entrepreneurial growth aspirations, reflecting the effect of institutional collectivism on risk-sharing and resource-mobilising behaviours. These findings suggest that cultural norms are an important determinant of the demand for entrepreneurship. This comprehensive study is reported in the next section[23].

Entrepreneurship is an important driver of job creation and economic development (Henrekson, 2005, OECD, 2010). By creating and growing new firms, entrepreneurial individuals add societal and economic value and contribute to the economic dynamism. Although the value of entrepreneurship is widely acknowledged, little is known about what makes a given country 'entrepreneurial'. This is partly due to the dominance of individual-centric and supply-side perspectives in entrepreneurship research, perspectives that focus on how enduring characteristics of a given individual influence that individual's entrepreneurial behaviours (Thornton, 1999). While these perspectives have provided important insights, they do not inform on the *demand* for entrepreneurship – i.e., how a given individual's *context* regulates that individual's entrepreneurial behaviours. The usability of supply-side and individual-centric perspectives for policy tends to be limited, as policy decisions primarily seek to manipulate contexts – e.g., regulations, resource availability, and social norms – in order to induce desired behaviours at the individual level. In this chapter, we contribute to the demand-side perspective to entrepreneurship by exploring how a given

[23] I am the second author on this study. Prof Erkko Autio is the first author and Karl Wennberg is the third author

individual's national context – notably, national culture – influences that individual's entrepreneurial behaviours.

A central assumption in the supply-side perspective is that entrepreneurial behaviours are regulated by enduring psychological and cognitive characteristics of individuals. This assumption seems difficult to reconcile with the large cross-country variation in population prevalence rates of entrepreneurial behaviours (Bosma, Acs, Autio, Coduras, & Levie, 2009). To explain this variation in entrepreneurship across countries, demand-side explanations appear necessary – ones that emphasise the regulating effect of an individual's social, institutional and economic context on that individual's entrepreneurial behaviours. Extant contextual explanations tend to focus on organisational rather than individual level of analysis, however, portraying organisations as conforming to isomorphic pressures (Aldrich & Fiol, 1994, DiMaggio, 1988, Hwang & Powell, 2005) or portraying individuals as being influenced by organisational logics (Sorensen, 2007). The gap between national institutional influences and individual-level behaviours remains largely unexplored (Klyver & Thornton, 2010). To address this gap, this chapter explores how national culture regulates the entrepreneurial behaviours of individuals.

In popular imagination, culture constitutes a central regulator of creative business endeavours such as entrepreneurship. Some countries, such as the US, are considered as models of an 'entrepreneurial society', whereas others are seen as less 'entrepreneurial' (Acs & Szerb, 2008). Yet, the talk of an 'entrepreneurial society' ignores that entrepreneurship is essentially an individual-level construct, and that there exists little research on how national culture influences entrepreneurial behaviours of individuals (Begley & Tan, 2001, Freytag & Thurik, 2007, Hayton, George, & Zahra, 2002, Kreiser, Marino, Dickson, & Weaver, 2010). The few studies in existence are heterogeneous in terms of methods applied, samples used and influences examined, and findings reported in this literature are often conflicting. Our literature reviews show that, thus far, no published studies have applied appropriate multi-level methods to provide suitable tests of the relationship between national culture – a collective-level construct – and entrepreneurial behaviours – an individual-level construct. In this chapter we provide a rigorous multi-level examination of cross-level relationships between national culture and individual-level entrepreneurial behaviours.

While agreeing on the general effect of national culture, received studies on entrepreneurial behaviours in international business research tend to disagree on detail. For

example, Begley and Tan (2001) found the valuation of innovation to be negatively associated with the perceived desirability of entrepreneurship, contrary to the commonly held belief that individualism (a cultural norm often associated with innovation) should constitute a positive influence on entrepreneurial behaviours. De Clercq et al reported a positive relationship between associative activity (a proxy for in-group collectivism) and national prevalence rate of entrepreneurship, also in contrast with established beliefs (De Clercq, Danis, & Dakhli, 2010). Wennekers et al reported a positive association between the cultural norm of uncertainty avoidance and entrepreneurial behaviours (Wennekers, Thurik, Stel, & Noorderhaven, 2007). We propose that such confusion may be, at least in part, due to the inconsistent treatment of levels of analysis in the literature, as well as the occasional inappropriate application of OLS regression techniques in clustered data. Many studies have correlated country-level measures of culture with national aggregates of entrepreneurial activity, thereby ignoring that entrepreneurship, although influenced by context, is fundamentally an individual-level endeavour. The use of higher-level aggregates of lower-level behaviours may mask or potentially even distort individual-level decision processes (Kozlowski & Klein, 2000). Entrepreneurship research, on the other hand, has often tended to use individual-level operationalisations of cultural norms, thereby ignoring the fact that, as an encapsulation of a shared belief system, culture is fundamentally a collective construct (Hofstede, 1980). Measuring culture as the individual perceives it may therefore mask the effect of cultural practices on individual's business behaviours. In this chapter, we present what we think is the first multi-level test of the link between national cultural norms and individual-level entrepreneurial behaviours.

Our overarching theoretical proposition is that the decisions to become an entrepreneur and to pursue growth in new ventures are inherently embedded in country-specific institutional arrangements. There exists some empirical evidence that the national institutional context shapes entrepreneurial behaviours. The bulk of such evidence concerns the effect of formal institutions, such as the fiscal regime, social security, intellectual property protection or bankruptcy laws, on the level of entrepreneurship in a given society (Autio & Acs, 2010, Djankov, La Porta, Lopez-de-Silanes, & Shleifer, 2002, Hessels, van Gelderen, & Thurik, 2008, Lee, Peng, & Barney, 2007, Levie & Autio, 2008). Evidence on the effect of *informal* institutions, such as culture and norms, remains scant (Freytag & Thurik, 2007). To our knowledge, no published research to date has been able to estimate the direct cross-level effect of *informal* institutions, such as cultural norms, on entrepreneurship. This is a

deplorable gap, since research in economics, sociology and political science widely recognises informal institutions as major regulators of individual-level economic behaviours (Aldrich, 1999, DiMaggio & Powell, 1983).

To address this gap we used cross-national data from 28 nations in the Global Entrepreneurship Monitor (GEM) and the GLOBE (House, Hanges, Javidan, Dorfman, & Gupta, 2004) datasets to outline and test a multi-level model investigating the effect of salient cultural norms on entrepreneurial behaviours by individuals. Our analysis reveals that – contrary to popular intuition – the cultural norm of societal institutional collectivism is *negatively* associated with individual-level entrepreneurial entry but *positively* associated with entrepreneurial growth aspirations, reflecting the varying effect of institutional collectivism on variance-inducing, risk-sharing and resource-mobilising behaviours. In addition, we find that the cultural norm of uncertainty avoidance is negatively associated with both entrepreneurial entry and growth aspirations, while the cultural norm of performance orientation is positively associated with entrepreneurial entry. Our study is among the first to pinpoint some of the crucial mechanisms by which national cultural norms and individual-level factors jointly shape entrepreneurial behaviours. We contribute to international business and entrepreneurship research by showing how individuals' entrepreneurial behaviours are contingent on the cultural context in which they are embedded. The majority of entrepreneurship research is US- and Europe-centric, often devoid of contextual variance, and therefore, only limitedly generalisable beyond the immediate cultural context within which that research was carried out. We also contribute methodologically by developing and testing multi-level framework that allows for more advanced tests of the directionality of causation across levels.

5.1 Theory and Hypotheses

Entrepreneurial behaviours are undertaken by individuals, yet they take place in a given societal and cultural context (Davidsson & Wiklund, 2001, Jack & Anderson, 2002). To properly understand this behaviour, then, requires attention to both individual-level and contextual factors (Phan, 2004, Shane & Venkataraman, 2000). In our theory development, we depart from the supply-side perspective, which emphasises the role of enduring psychological and cognitive characteristics of individuals as central regulators of entrepreneurial behaviours. Instead, we subscribe to the demand-side perspective, which

portrays entrepreneurs as subjectively rational individuals who respond to constraints and trade-offs in their contexts (Aldrich, 1999). Two fundamental logics for rationalising such trade-offs exist: economic and social (McMullen & Shepherd, 2006, Thornton, 1999). Economic logics emphasise rational utility maximisation, as entrepreneurs consider their ability, under uncertainty, to generate and appropriate economic and societal value through opportunity pursuit and exploitation (Dixit, 1989, Douglas & Shepherd, 2000, Douglas & Shepherd, 2002). In this perspective, contextual influences on entrepreneurial behaviours operate through their influence on the economic trade-offs that entrepreneurs face when considering the allocation of effort into alternative occupational pursuits (Autio & Acs, 2010, Cassar, 2006). Such trade-offs may be affected, for example, by a given country's fiscal system, which regulates the appropriability of returns to entrepreneurial risk-taking (Gentry & Hubbard, 2000).

As an alternative rationale, entrepreneurs may consider the social consequences of alternative courses of action (Klyver & Thornton, 2010). In this social logic of individual behaviours, individuals seek to behave in ways that are considered by others as legitimate – i.e., desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and motives (Suchman, 1995: 574). Instead of, and in addition to maximising their economic utility, prospective entrepreneurs also consider whether or not engaging in entrepreneurial behaviours is a culturally legitimate act. Such trade-offs are regulated by informal institutions, such as national culture (Kreiser, Marino, Dickson, & Weaver, 2010). In this chapter, our focus is on the regulating influence of national culture on entrepreneurial behaviours, one that operates through its effect on legitimacy trade-offs associated with alternative courses of action by individuals.

Entrepreneurial behaviours involve the pursuit of opportunity without regard to resources currently controlled (Stevenson & Jarillo, 1990). Entrepreneurial behaviours are inherently risky, since market opportunities can normally be validated only after the new venture has been created (Eckhardt & Shane, 2003). As such, the pursuit of opportunities often involves departure from established ways of doing things, as the discovery of new opportunities pushes back the boundaries of sheer (i.e., previously unknown) ignorance (Kirzner, 1997). By discovering and exploiting new means-ends relationships, entrepreneurs introduce new 'types' of organisations that may sometimes represent radical departures from established ways of doing things (Stinchcombe, 1965). These characteristics of entrepreneurial behaviours are echoed in the psychological research on entrepreneurship, which customarily

characterises entrepreneurial behaviours as innovative, risk-taking and proactive (Lumpkin & Dess, 1996).

Because entry into entrepreneurship is a variance-inducing and risky act, individuals have to consider not only the possibility of failure and their own ability to succeed, but also, how entry into entrepreneurship influences their social position and whether this action conforms or conflicts with prevailing norms (Ajzen, 1991, Bandura, 1977). The salient aspects of entrepreneurial behaviours – risk taking, innovativeness and proactiveness – resonate closely with the national cultural norms of uncertainty avoidance, individualism-collectivism and performance orientation. It is thus not surprising that these are the most widely explored (in practice, the only) cultural norms in entrepreneurship research (Hayton, George, & Zahra, 2002). Although we acknowledge that other cultural norms, such as masculinity, gender egalitarianism or future orientation may also influence entrepreneurial behaviours, our theoretical model building focuses on those norms that are considered the most salient influences on growth-seeking entrepreneurial behaviours – i.e., ones most likely to create economic and societal value[24].

In the following, we draw on social learning and culture theories to develop a multi-level model of entrepreneurial entry and growth aspirations (Bandura, 1986). We expect an individual's societal context, as expressed in cultural norms, to exercise a direct effect on entrepreneurial behaviours by individuals. Our theoretical model is illustrated in Figure 11 below.

[24] Studies subscribing to other traditions might consider different cultural norms. For example, anthropological studies on entrepreneurship might be interested in the effect of gender egalitarianism on entrepreneurial entry.

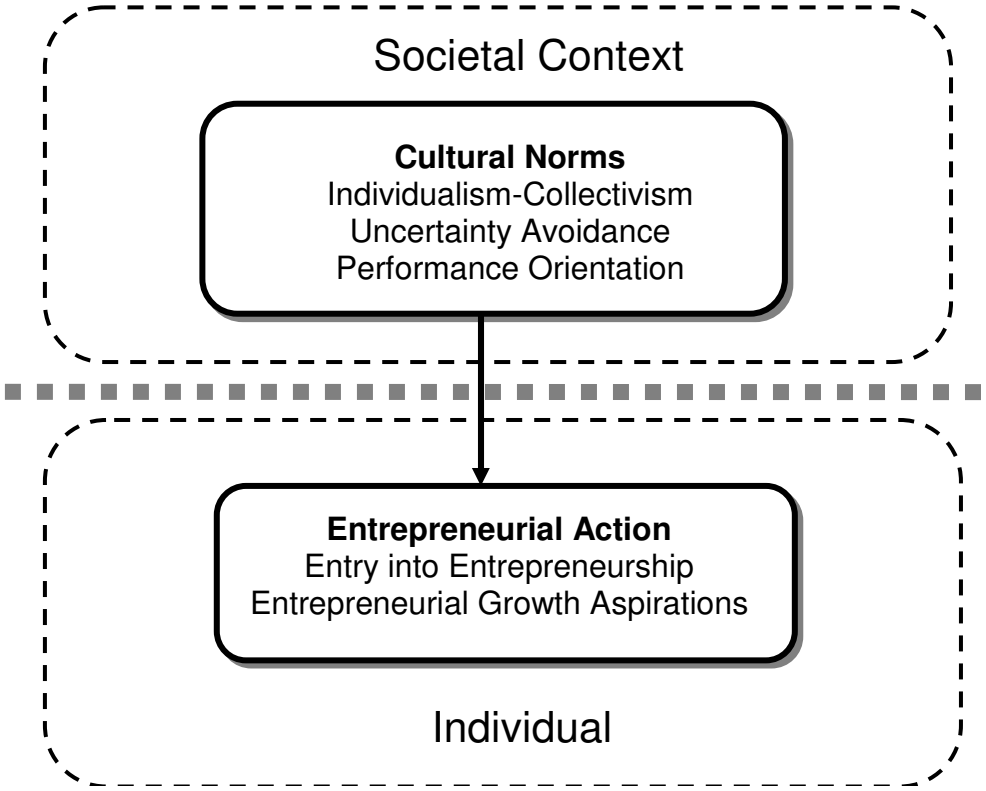


Figure 13 Theoretical model of the influence of culture on entrepreneurial actions

As noted above, entrepreneurship consists of both variance-inducing and resource-mobilising behaviours (Kirzner, 1997, Tiessen, 1997). This is reflected in our theoretical model: we expect variance-inducing behaviours (and cultural influences thereupon) to be mainly associated with entrepreneurial entry, and we expect resource-mobilising behaviours to be mainly associated with entrepreneurial growth aspirations. In our model, cultural norms have implications for both how ideas a conceived and how individuals use their social networks to mobilise resources. Specifically, we focus on the cultural norms of societal institutional collectivism, uncertainty avoidance, and performance orientation. Our interest in these norms stems from the treatment in the entrepreneurship literature of the discovery and pursuit of opportunities as socio-cognitive tasks undertaken by individuals (Lumpkin & Dess, 1996, Shane, 2003). This necessitates the examination of the regulating role of individualism and uncertainty avoidance. The third cultural norm, performance orientation regulates the pursuit of growth regardless of current resource constraints (Stevenson & Jarillo, 1990).

Before we move to hypothesis development, a clarifying comment is in order. The cultural norms in our model represent cultural practices, as measured by the GLOBE study. In GLOBE, cultural practices are measured with 'as is' statements, whereas cultural values are measured 'as should be' (House & Javidan, 2004). Cultural practices reflect the way cultural norms are interpreted and experienced by individuals and how cultural norms are enacted in behaviours, policies and practices (Segall, Lonner, & Berry, 1998). This aspect is closely aligned with Bandura's (1986) conception of individuals as proactive, self-reflecting and self-regulating individuals who exhibit measured responses to the social context that they experience. This is why, in our theory development, we emphasise cultural practices, rather than cultural values[25]. In the following, we develop hypotheses on the cross-level effect of cultural norms, which operate through their effect on legitimacy trade-offs, as experienced by individuals (hypotheses 1-6).

We focus on national-level cultural attributes and consider the effect of societal institutional collectivism, uncertainty avoidance and performance orientation on those behaviours. We build on Tiessen's (1997) characterisation of entrepreneurial behaviours as variance inducing and resource mobilisation ones and consider legitimacy trade-offs evoked by the above norms in the minds of self-reflecting and self-regulating individuals. The starting point in our theory is that individuals' behaviours are not guided by efficacy considerations alone, but also, that they seek to enhance their legitimacy by engaging in behaviours that are seen valued, acceptable and appropriate in a socially structured system of cultural norms (Meyer & Rowan, 1977). From a cultural and sociological perspective, entrepreneurial behaviours represent symbolic acts, the cultural interpretations of which will vary according to the individual's cultural context. Because individuals are proactive and self-reflecting (Bandura, 1977), they will be sensitive to the way their peers are likely to interpret their actions.

Societal Institutional Collectivism and Entrepreneurial Behaviours

The notion of culture is fundamental to cross-cultural research. Hofstede (2001:10) defines culture as the visible manifestations of symbols, heroes, rituals, practices and values. Symbols are words, gestures, pictures and objects that carry meanings recognised by those

[25] This approach is also justified by the fact that for societal institutional collectivism, cultural practice and cultural value scores load on a single factor in the GLOBE data (Hofstede, 2006).

who share the culture. Heroes are persons who possess characteristics that are highly valued in a culture, serving as role models. Rituals are activities deemed socially essential to identify an individual within the boundaries of that culture. In this chapter we refer to these concepts as **"**cultural norms".

The literature distinguishes between several distinctive kinds of collectivism, including in-group collectivism, societal institutional collectivism, and relational collectivism (Oyserman, Coon & Kemmelmeier, 2002). Because individuals consider entrepreneurial behaviors in relation to their societal environment and need to mobilize external resources to pursue opportunities as well as to maximize economic utility, we focus on the effect of societal institutional collectivism practices in this study, although we include in-group collectivism as control. This is coherent with GLOBE operationalisations of societal institutional collectivism practices where it refers to it as: (1) the degree to which leaders encourage group loyalty even if individual goals suffer (reverse coded); (2) the degree to which organisational and institutional practices encourages collective distribution of resources and collective action; and (3) the degree to which the economic system in the society is designed to maximize individual versus collective interests (House et al, 2004). We argue that while the first operationalization concerns an individual's propensity to enter into entrepreneurship, the second and third concern his entrepreneurial growth aspirations. Thus, GLOBE frames societal institutional collectivism in terms of group loyalty and the pursuit of economic interests through collective action and collective distribution of resources.

We expect societal institutional collectivism practices to exercise different effects on entrepreneurial entry, on the one hand, and post-entry growth aspirations, on the other. This is because of how societal institutional collectivism practices regulate variance-inducing behaviors and resource-mobilizing behaviors, respectively (Tiessen, 1997). We argue that societal institutional collectivism practices discourage *entry* into entrepreneurship because such entry signals that: (1) the individual places his or her economic interests above those of the group; and (2) the individual is more loyal to self than to the group. Both of these signals would prompt a negative response in a society with strong societal institutional collectivist practices, and therefore, negatively affect the individual's standing in society. This legitimacy cost would deduct from the desirability of entry into entrepreneurship, as perceived by the individual, thereby inhibiting entry (McMullen & Shepherd, 2006).

Societies, where leaders encourage loyalty to the group, would also be less likely to develop structures that encourage the independent (rather than collective) pursuit of economic interests, and, thereby, favor large corporate entities over independent and small firms. In Sweden, for example, – a society with strong institutional collectivist practices Henrekson (2005) showed how the fiscal system favors large corporations, which also enjoy cheaper and easier access to financing. Such bias would inhibit entry into entrepreneurship, because the anticipated weaker feasibility of this option would make prudent individuals less motivated to pursue entrepreneurship. We hypothesize:

> ***Hypothesis 1****: Societal-level institutional collectivism will be negatively associated with entry into entrepreneurship at the individual level.*

Entrepreneurial entry alone does not automatically entail large economic risks, as long as the new venture does not pursue risky behaviors - such as employment growth (Autio & Acs, 2010). Population surveys of entrepreneurs overwhelmingly show that the great majority of all new businesses are limited in risk: they do not seek to innovate, nor do they seek to grow their organisations (Autio, 2007, Birch, Haggerty, & Parsons, 1997, Delmar, Davidsson, & Gartner, 2003, Storey, 1994).

Consequential decisions primarily including the pursuit of growth are usually made post entry. For the entrepreneur that has entered, these consequential decisions could be made based upon the extent to which economic risks and uncertainties could be mitigated. We argue that societal-level institutional collectivism influences an entrepreneur's growth aspiration through its effect on resource-mobilising behaviors and the propensity to take economic risks.

Although group loyalty norms and emphasis on collective economic interest inhibit variance-inducing entry into entrepreneurship in collectivist societies, we believe that the same mechanisms no longer apply once an entrepreneurial entry has occurred. This is because societies with strong institutional collectivist practices are more likely to develop societal structures for risk sharing, thereby encouraging the pursuit of growth in those situations where entry into entrepreneurship has already occurred. Entrepreneurial entry does not in itself automatically represent large economic risks, as long as the new venture does not pursue risky behaviors such as employment growth (Autio & Acs, 2010). Societies with

strong practices of institutional collectivism tend to evolve structures and mechanisms that seek to create benefits for the society (Thelen, 2004). The more such activities are evolved, the more sophisticated the societal institutional infrastructure becomes. The classic argument of Evesey and Musgrave (1944) emphasized precisely this aspect of collectivist societies, the exemplary case being that high tax rates typical of institutional-collectivist societies represent a form of societal risk sharing. The collectivist society will first tax and then re-distribute personal and business income for purposes considered beneficial for society (Cullen & Gordon, 2007). This mechanism both increases the availability of, e.g., government grants and subsidies for the pursuit of innovation and growth, and it also makes the access to such resources more open. Societal redistributive mechanisms would therefore increase the motivation of post-entry entrepreneurs to take risks. Conversely, highly individualist societies will not necessarily build the kinds of risk-sharing mechanisms that would encourage entrepreneurs to take risks. If the danger of "falling flat on your face" is great, entrepreneurs will be more cautious when seeking growth.

Further, we recall GLOBE's definition of societal institutional collectivism as "the degree to which organizational and societal institutional practices encourage and reward collective distribution of resources and collective action". We argue that through the collective distribution of resources, societies that are high on institutional collectivism present the best combination of resources and subsequently an optimum scenario of resource-mobilisation. Through collective economic actions and through efficiently mobilising resources, collectivist societies assist new ventures to materialise the maximization of economic utility. These benefit the entrepreneur that has entered in mitigating pertinent economic uncertainties enhancing the desirability to pursue growth. Combined, we hypothesize:

> ***Hypothesis 2****: Societal-level institutional collectivism will be positively associated with higher entrepreneurial growth aspirations at the individual level.*

Uncertainty Avoidance and Entrepreneurial Behaviours

Uncertainty avoidance refers to the extent to which individuals in a given society feel threatened in ambiguous situations, the extent to which individuals prefer order and rule-based reduction of uncertainty as well as the extent to which uncertainty is generally tolerated in a society (Sully de Luque & Javidan, 2004). In Hofstede's definition, uncertainty

avoidance is "the extent to which the members of a culture feel threatened by uncertain or unknown situations" (Hofstede, 1991: 113). In our consideration, we draw on these two definitions and consider specifically focus on the part of uncertainty avoidance to representing the extent to which individuals in a given society will feel threatened by ambiguity, prefer rule-based mechanisms for uncertainty reduction and seek orderliness, consistency, structure and formalised processes in their lives.[26] As such, uncertainty avoidance has received considerably less attention than individualism-collectivism as a cultural conditioner of entrepreneurial activity (Tiessen, 1997).

We propose that the national cultural emphasis on uncertainty avoidance will be negatively associated with both entry to entrepreneurship as well as entrepreneurial growth orientations at the individual level. An entry into entrepreneurship represents a move away from regular employment, which is governed by predictable rules and established contractual relationships. Whereas in an employment relationship, an individual is able to rely on established rules and procedures to introduce and maintain order (Weber, 1905), such processes are created de novo in new venture contexts. New ventures have not evolved well-defined organisational structures, which add to the ambiguity in task and role definitions. New ventures need to evolve their business models through a trial and error process, where feedback to actions is often ambiguous and received with delay, and where information to guide organising choices is incomplete. Not only do entrepreneurs not know everything, they also do not know what they do not know. This situation increases role ambiguity and increases the potential of role conflict relative to established employment. Such ambiguity is one of the major drivers of entrepreneurial role stress and would be only poorly tolerated in cultural environments that are high on uncertainty avoidance (Örtqvist & Wincent, 2006).

Increased uncertainty also increases the potential legitimacy cost of entrepreneurial entry. As entry into entrepreneurship is recognised by others as increasing career risks, any failure would be more readily interpreted as a negative social signal in societies high in uncertainty avoidance ('I told you so'). This would push up the potential legitimacy costs associated with entrepreneurial entry. Finally, and independent of this, entry into entrepreneurship increases ambiguity relative to social judgments by others. As entrepreneurs are placed outside the established social order, they are exposed to judgment by others, and their performance is contingent upon social acceptance by salient stakeholders (Bruderl & Schussler, 1990,

[26] This specific focus follows our usage of the GLOBE measure for Uncertainty Avoidance values rather than the and Uncertainty Avoidance practices (Venaik & Brewer, 2009)

Stinchcombe, 1965). Because new firms represent new ways of doing things, considerations of social acceptance cannot rely on established models, again increasing uncertainty. This dynamic would serve to further exacerbate the legitimacy cost for the individual. Summarising, therefore, we hypothesise:

Hypothesis 3: *Uncertainty avoidance at the societal level will be negatively associated with entrepreneurial entry at the individual level*

Similar mechanisms would also cause uncertainty avoidance to be negatively associated with entrepreneurial growth orientation in post-entry situations. Growth-oriented entrepreneurial behaviours signal that the individual prefers the chaotic and dynamic environment of high-growth seeking ventures over steady and stable ones. Here, ambiguity is created by the delay between investments required to pursue growth and the materialisation of expected returns. Because resource investments for growth are made under incomplete information, there will be considerable uncertainty regarding the potential outcomes of such investments. Because such behaviours conflict with the cultural norm of uncertainty avoidance, failure to achieve growth would be more severely punished socially in societies characterised by high uncertainty avoidance. The uncertainty inherent in growth-seeking actions would therefore deflect entrepreneurs from seeking growth in uncertainty-avoiding cultures. Therefore, we hypothesise:

Hypothesis 4: *Uncertainty avoidance at the societal level will be negatively associated with entrepreneurial growth aspirations at the individual level*

Performance Orientation and Entrepreneurial Behaviors

The cultural norm of performance orientation reflects the extent to which a community encourages and rewards innovation, high standards and performance improvement (Javidan, 2004). Perhaps the best known elaboration of this construct was provided by Weber (1905), who considered this cultural norm to be a key distinguishing aspect between catholic and protestant religions. The protestant work ethic emphasises the punctilious performance of everyday work as an intrinsically valuable calling in its own right and highlights the

importance of work-related accomplishment as an important goal in life. In his review of the construct, Javidan (2004: 245) associated the cultural norm of performance orientation with, e.g., the valuation of training and development; an emphasis on results rather than people; competitiveness and materialism; setting of demanding targets; having a 'can-do' attitude; appreciation of feedback as necessary for improvement; the taking of initiative; bonuses and financial rewards; and the belief that anyone can succeed if they try hard enough. All of these values are often associated with entrepreneurship in the literature.

We predict that the national-level cultural norm toward performance orientation will be positively associated with both entrepreneurial entry and entrepreneurial growth aspirations at the individual level. An entry into entrepreneurship is typically a more challenging career choice than employment. An entry into entrepreneurship represents greater potential variance in terms of professional performance, increasing both upside returns as well as potential downside risks in the case of failure. In high-performing societies, where professional performance is valued, individuals will recognise that entrepreneurship offers greater potential to perform than regulated employment usually does. Therefore, in high-performance societies, individuals would recognise entry into entrepreneurship as a legitimate act and sends a signal that the individual is ready to set a high bar on him- or herself (Cassar, 2007). Such signals would be regarded more highly in societies characterised by high performance orientation. Furthermore, the entrepreneurial career option enables the individual to take initiative, an act that again would be regarded more highly in societies characterised by high performance orientation. Therefore, we hypothesise:

Hypothesis 5: *Performance orientation at the societal level will be positively associated with entrepreneurial entry at the individual level*

Essentially the same argument should also be applicable to post-entry situations. Although entry into entrepreneurship sends a signal that a given individual is seeking to perform, entry alone does not automatically translate into performance. Therefore, once an individual has entered into entrepreneurship, he or she needs to engage in resource-mobilising behaviours in order to realise the upside potential created by entry. Aspiring for venture growth is a demanding goal that signals a 'can-do' attitude – something that would be regarded more highly in societies characterised by high performance orientation. Thus, the cultural norm of

performance orientation sets a behavioural standard that considers growth-oriented entrepreneurial behaviours as more legitimate than behaviours that do not aspire for rapid growth. Summarising, we hypothesise:

Hypothesis 6: *Performance orientation at the societal level will be positively associated with entrepreneurial growth aspirations at the individual level*

5.2 Methodology

Our theoretical model draws on entrepreneurship theories to highlight individual-level socio-cognitive motivations for launching and growing new firms, as well as on international business research that considers the effect of culture and institutions on economic activity. We performed our analyses based on data of adult-population survey from the Global Entrepreneurship Monitor GEM survey for 28 countries for the year 2007, to form an initial database of 52 376 (un-weighted) interviews of adult-age individuals (Reynolds, Bosma, & Autio, 2005). We complemented this dataset with data on national cultural norms for the same set of 28 countries included within the GEM, as collected by the Global Leadership and Organizational Behavior Effectiveness (*GLOBE*) study (House et al., 2004). By combining these two datasets, we analyse 52 376 (unweighted) interviews in 28 different countries, listed in Table 11 below. Further, we supplemented our data with controls for national-level attributes provided by the International Monetary Fund (IMF) and EuroStat for the year 2007 and for the 28 countries involved in the analyses.

Table 11 Sample descriptive for the study of culture on entrepreneurial behaviors

			Entry			Expected jobs in 5 Yrs						
Country	**N**	**N%**	**(=1)**	**(=0)**	**%Entry**	**Min**	**Mean**	**Max**	**Age**	**Gender**	**Education**	**HHINC**
Argentina	712	1.4%	170	542	24%	0	9	100	39	1.45	3.28	1.97
Austria	725	1.4%	39	686	5%	0	82	3 000	40	1.49	2.71	1.87
Brazil	1 327	2.5%	216	1 111	16%	0	3	62	37	1.52	2.65	1.47
China	1 683	3.2%	341	1 342	20%	0	55	2 500	39	1.46	3.01	1.82
Colombia	1 581	3.0%	401	1 180	25%	0	12	800	38	1.62	3.22	1.41
Denmark	1 609	3.1%	96	1 513	6%	0	22	800	44	1.54	4.13	1.92
Finland	1 017	1.9%	111	906	11%	0	6	100	41	1.45	3.56	1.99
France	1 472	2.8%	46	1 426	3%	0	3	20	41	1.53	3.67	2.04
Greece	935	1.8%	75	860	8%	0	3	30	39	1.48	3.38	1.93
Hong Kong	980	1.9%	138	842	14%	0	37	3 000	38	1.53	3.33	2.22
Hungary	599	1.1%	63	536	11%	0	4	50	39	1.49	3.25	2.13
India	694	1.3%	79	615	11%	0	7	200	36	1.16	3.49	1.56
Ireland	978	1.9%	111	867	11%	0	8	200	44	1.60	3.88	1.91
Israel	990	1.9%	85	905	9%	0	33	855	38	1.45	3.75	1.68
Italy	490	0.9%	40	450	8%	0	8	200	44	1.58	3.83	1.83
Japan	738	1.4%	59	679	8%	0	27	1 000	45	1.62	3.85	1.75
Kazakhstan	1 166	2.2%	152	1 014	13%	0	12	500	38	1.54	3.77	1.53
Netherlands	1 346	2.6%	115	1 231	9%	0	16	900	45	1.52	3.55	2.42
Portugal	676	1.3%	105	571	16%	0	12	550	39	1.44	3.14	2.06
Russia	1 476	2.8%	39	1 437	3%	0	37	1 000	40	1.62	3.73	2.10
Slovenia	1 271	2.4%	96	1 175	8%	0	16	500	41	1.49	3.42	2.04
Spain	19 231	36.7%	1526	17705	8%	0	5	600	42	1.50	3.36	1.96
Sweden	1 406	2.7%	52	1 354	4%	0	6	30	45	1.50	3.59	2.08
Switzerland	1770	3.4%	110	1 660	6%	0	7	100	42	1.54	3.38	1.94
Thailand	1 924	3.7%	327	1 597	17%	0	2	62	40	1.60	3.21	2.07
Turkey	1 367	2.6%	109	1 258	8%	0	79	2 000	38	1.48	3.61	1.74
USA	870	1.7%	121	749	14%	0	22	900	46	1.43	3.98	1.99
United Kingdom	3 343	6.4%	308	3 035	9%	0	19	2 000	44	1.54	3.14	2.05
Total	**52376**	**100%**	**5 130**	**47246**	**11%**	**0**	**20**	**788**	**41**	**1.51**	**3.46**	**1.91**

Notes: Expected jobs in 5 years is excluding the focal entrepreneurs
N is the number of observations, N and N% computed using population weights
%Entry represents the % of respondents per country that are identified as nascent or new entrepreneurs
Age represents the average age of respondents per country for year 2007
Gender is coded Male=1 and Female=2
Education is the average education level of respondents per country for year 2007. None=1, some secondary=2, secondary=3, post secondary=4 and graduate educational experience=5
HHINC represents average household income tier of respondents per country for year 2007. 1=lower middle, 2=middle and 3=upper middle
Entry and Expected number of jobs in 5 years (growth aspirations) are the two dependent variables in our analysis

We used two dependent variables in our analysis. The first dependent variable is *individual-level entry into entrepreneurship*. GEM identifies three types of entrepreneurs. These are: (1) nascent entrepreneurs (individuals who are active in the process of starting a new firm but have not yet launched one); (2) new entrepreneurs (owner-managers of new firms who have paid wages to any employees for more than 3 months but less than 42 months); and (3) established entrepreneurs (owner-managers of firms 42 months old or older). Since one aspect of our theory looks at entry into entrepreneurship, we sample nascent and new entrepreneurs. Our first dependent variable is a dummy variable (1=yes) indicating that a given *individual* qualifies as either nascent or new entrepreneur in the GEM data. In total, our dataset contained 5 130 individuals who qualified as either nascent or new

entrepreneurs (9.8 %). Table 11 indicates the number of interviews and number of entrepreneurs by country. Entry to entrepreneurship dummy relates to individuals and not to new entrepreneurial entities such as new ventures. This is consistent with our research question, which is about the effect of national culture on entrepreneurial behaviors *by individuals*. As such, however, there is a big overlap between individuals and new firms in the GEM data, as over 50% of new firms are started by an individual entrepreneur. This was observed to be so for the year 2007 too in which out of 5130 individuals who were identified as either nascent or new entrepreneurs, 2705 of them were identified to have solely started a firm.

The second dependent variable measures the entrepreneurial growth aspirations of identified nascent and new entrepreneurs[27]. Each individual qualifying as either nascent or new entrepreneur was asked to estimate their expected number of employees within 5 years' time. As this variable has a right-skewed distribution, we used the natural logarithm of (growth aspiration + 1) in the analysis[28] while controlling for current employees.

We argue that an individual's growth aspirations provide a better test of our theory than eventual realised growth. The decision to pursue growth is a socially visible, and therefore, socially consequential decision that involves significant risk and trade-offs to legitimacy. Investments (both social and economic) to pursue organic growth are made upfront, and once a commitment to growth has been signalled, such decisions may be difficult to reverse without cost to an individual's legitimacy and social standing. Growth commitments are therefore not made lightly. Thus, although our measure does not reflect actual realised growth, our measure nevertheless provides a good reflection of legitimacy considerations driving strategic allocation of effort into entrepreneurship, under uncertainty and the influence of cultural norms, and therefore, a more direct and timely reflection of growth-oriented entrepreneurial behaviours (Delmar & Wiklund, 2008). The weighted average of this measure was 15.3 expected jobs within five years' time.

[27] Since growth aspirations by nascent entrepreneurs may not be fully reliable, we also performed the analyses on growth orientation using the sample of new entrepreneurs only, as a reliability check. Essentially the same results were produced.

[28] Out of 5 130 identified entrants to entrepreneurship, 1 530 responded to create no jobs within 5 year's time. Since, we have transformed our dependent variable into a logarithmic scale, these 1 530 responses would eventually got dropped (logarithm of zero is not defined), In order to preserve these 1530 observations we first added 1 to the dependent variable growth aspirations before transforming to its natural logarithm.

Country-level (level-2) predictors

Data on country-level cultural norms were obtained from the GLOBE dataset. GLOBE measures *institutional collectivism* as: "the degree to which organizational and societal institutional practices encourage and reward collective distribution of resources and collective action" (House, Javidan, Hanges, & Dorfman, 2002: 2). *Uncertainty avoidance* in societal practices is measured as the degree to which individuals in a society prefer rule-based mechanisms to introduce orderliness and clearly articulated expectations, even at the cost of experimentation and innovation. *Performance orientation* measures the extent to which a given society is perceived to encourage and reward performance improvement.

Country-level (level-2) controls

We also included GLOBE's cultural measures of *in-group collectivism, assertiveness, power distance* and *future orientation* as control variables. GLOBE measures cultural norms with 7-point Likert scales, and cultural scores are presented as regression predicted scores that correct for response bias. So as to provide for easier interpretation of the analysis, we z-standardised the three predictors (and the other Globe measures used as controls), such that the effect on either entry or growth aspirations can be interpreted based upon one standard deviation change in each of these predictors.

We obtained the country-level controls for our analysis from IMF and EuroStat datasets. The GEM research suggests that a country's level of economic development significantly influences the nature and distribution of entrepreneurial activity (Stel, Carree, & Thurik, 2005). We therefore controlled for the country's GDP per capita (purchasing power parity, PPP), as well as GDP (PPP) per capita squared to capture curvilinear effects. Following established practice (Bowen & De Clercq, 2008, Dreher & Gassebner, 2007, Freytag & Thurik, 2007), we also included a dummy (1=yes) for transition economies.[29] To capture any effect of the country's economic expansion, we controlled for the change in GDP from previous to current year. As proxies of the size of domestic markets as well as economic

[29] The countries classified as transition economies are: Bosnia & Herzegovnia, China, Croatia, Czech Republic, Hungary, India, Kazkhstan, Latvia, Macedonia, Poland, Romania, Russia, Serbia & Montenegro, and Slovenia.

expansion, we controlled for population size (in millions) as well as population growth during the previous year. Both indicators were computed from IMF data.

Individual-level controls

Individuals' growth aspirations may be influenced by a number of factors other than his or her attitudes. We controlled for a number of demographic characteristics, all of which were obtained from the GEM dataset. An individual's age is an important influence on entrepreneurial growth aspirations, with younger individuals generally exhibiting higher ambitions than older ones. We therefore controlled for the age of the individual, as well as the squared term of age in order to capture any curvilinear effects. Since women typically exhibit more modest entrepreneurial activity than men, we controlled for gender (male=1, female=2). Both education and household income have been associated with both entry into entrepreneurship as well as entrepreneurial growth aspirations, so we controlled for education with a 5-step categorical scale toward higher levels of education (5=graduate experience) and household income with a 3-step income tier scale (3=highest income tier). Finally, we controlled for the entrepreneurs' current number of employees so as to capture idiosyncratic variation in initial conditions of the venture. We also controlled for two individual-level attitudinal attributes. *Perceived Self-Efficacy* (1=yes) indicates whether the individual thought that (s) he possessed the knowledge, skills, and experience required to start a new business. *Fear of Failure* was captured using a dummy variable (1=yes) that measures an individual's lack of confidence in his or her ability to cope with endogenous or exogenous uncertainty associated with new business ventures, as well as the fear of anticipated consequences of such failure.

Estimation Methods

We chose year 2007 for our empirical test, because it represents the latest 'normal' year before the Great Recession. The data is grouped by country, thus resulting in a hierarchical and clustered dataset. This increased the possibility of 'false positives' in OLS analysis due to under-estimation of standard errors because of their non-normal distribution (Hoffman & Griffin, 2000). Since we combined individual-level observations with country-level measures of cultural norms, the data was analysed using hierarchical linear modelling methods. We

carried out our outcome regressions using random-effect logistic regression to estimate the influence of country-level factors (level-2) on an individual's probability to enter into entrepreneurship and an ML random intercept model to estimate the influence of the same factors on an individual's entrepreneurial growth aspirations.

As *entry to entrepreneurship* is a dichotomous variable, we adopted a random effects logistic regression model, wherein we assumed unobserved country-specific effects (u_i) to be randomly distributed with a mean of zero, constant variance ($u_i \sim IID\ (0, \sigma^2_u)$) and uncorrelated to the predictor covariates. We adopted the random-effect model in our analysis. The random-effect (GLS) model is intuitively similar to the OLS model, but it allows the constant term (intercept) to vary randomly across countries.

We adopted a two-step testing strategy to analyse effects on entry into entrepreneurship. First, we estimated the amount of variance that existed with the probability of entry into entrepreneurship across (Model 0 of Table 15). Second, we added country-level predictors in the model (Model 1 of Table 15). This is shown in Table 15.

To estimate *growth aspirations*, we applied a multi-level linear model (generalised least squares) to estimate fixed parameters and maximum-likelihood estimates of variance components (Raudenbush, 1998). Random effects analysis allows regression coefficients and intercepts to vary across countries (Martin, Cullen, & Johnson, 2007). The GLS approach allows the standard errors to vary across groups and provides a weighted level-2 regression so that groups with more reliable level-1 estimates are given greater weights and therefore exercise greater influence in the level-2 regression (Hoffman & Griffin, 2000). This results in more accurate estimates of cross-level effects. ML analysis does not ignore interclass correlation, thereby reducing the possibility of committing Type-1 and Type-2 errors in estimates. In our data, we had both individual-level predictors of entrepreneurial growth aspirations, as well as country-level direct effects. The regression model took the following form (Snijders & Bosker, 2004):

$$Growth\ Aspirations = \beta_{0j} + \beta_{pj}\left\{LEVEL1_{PREDICTORS}\right\} + \left\{LEVEL1_{CONTROLS}\right\} + r_{ij} \quad (1)$$

$$\beta_{0j} = \gamma_{00} + U_{0j} \quad (2)$$

$$\beta_{0j} = \gamma_{00} + \gamma_{01}\left\{LEVEL2_{PREDICTORS}\right\} + U_{0j} \quad (3)$$

where γ_{00} = mean of the intercepts across countries (denoted by many as 'constant'), γ_{01} = slopes of country-level (level-2) predictors The term U_{0j} represents the random part of the equation and is a measure of the country-level residuals and r_{ij} represents individual-level residuals. In other words, (level-1) equation (equation 1) predicts the direct effects (or betas) of level-1 predictors on level-1 outcomes and the level-2 equations (equations 2 and 3) predict the effects (or gammas) of level-2 predictors on level-1 intercept.

For entrepreneurial growth aspirations, we also adopted a two-step testing strategy (Hoffman & Griffin, 2000). First, we estimated between-country variance in the data by including only the β_{0j} term in Equation (1) (i.e., dropping all controls and treating $\beta_{pj} = 0$) above and then modelling the β_{0j} term using Equation (2) above. This model was called the Null model (Model 0 of Table 16), and it estimated the random intercept γ_{00} as well as between-country variance component associated with the error term U_{0j}. Second, we tested another random intercept model using Equation (1) and Equation (3) to model the β_{0j} term to see if country-level cultural norms significantly influenced entrepreneurial growth aspirations (Model 1 of Table 16). This model yields the estimates for main effects of individual-level predictors (β_{pj}) as well as those of the country-level predictors (γ_{01}) as the "fixed part estimates" and the random intercept γ_{00} and the between-country variance component associated with the error term U_{0j} as the "random part estimates". This step provided an 'acid test' of the general importance of country-level factors. The decrease in the variance component associated with the error term provided a measure of the extent to which our individual and country-level predictors accounted for such variance[30].

5.3 Results

Table 12 provides the descriptive statistics for both individual- and country-level predictor and dependent variables. Tables 13 and 14 below, show the correlation-matrix of individual and country-level variables. Table 15 shows effects on individual-level entry into entrepreneurship, and Table 16 shows effects on individual-level growth aspirations. Significant between-country variance is a precondition for multi-level analysis (Bliese, 2000, Hofmann, 1997, Hofmann e al. 2000). To check this for entry into entrepreneurship, we performed a multi-level logistic regression with a model that included no predictors. As can

[30] The analyses were performed using the Stata software package (latest version). We also carried out a number of analyses using HLM and R software packages. The results were always consistent with Stata.

be seen in Model 0 of Table 15, the intra-class correlation coefficient (ICC, rho[31]) indicates that 10% of the variance in the dependent variable resided between countries (df[32] = 1; χ^2 = 1167; p < 0.000). For entrepreneurial growth aspirations, the Null model (Model 0 of Table 14) indicated an intra-class correlation coefficient of 0.093, meaning that about 9% of the variance in growth aspirations was attributable to the country level (df=1; χ^2 = 300: p < 0.000). This supported the application of multi-level analysis techniques over OLS.

Table 12 Descriptive statistics of dependent variables, predictors and controls used in the study of culture on entrepreneurial behaviors

Level-1 Variable	N	Mean	SD	Min	Max
Age	52 376	41.18	12.41	18	64
Gender	52 376	1.51	0.50	1	2
Education	52 376	2.41	1.11	2	5
Household Income Tier	52 376	1.93	0.80	1	3
Fear of Failure	52 376	0.40	0.49	0	1
Self-efficacy	52 376	0.50	0.50	0	1
Current Jobs	5 130	6.85	107.34	0	5 000
Entry	52 376	0.10	0.30	0	1
Growth Aspiration	5 130	15.31	110.07	0	3 000

Notes: N, Mean and SD columns present population-weighted values
Notes: Min and Max columns present unweighted values
Notes: Entry suggests those who have been identified as entrepreneurs and others that are not
Notes: Growth aspirations is the expected number of jobs in 5 years
Notes: Entry and Growth aspirations are the two dependent variables in our analysis

Level-2 Variable	N	Mean	SD	Min	Max
GDP Per Capita (PPP), kUSD	52 376	27 357.81	10 894.47	2 659.21	45 845.48
GDP Change, %	52 376	3.82	1.86	0.67	10.06
Population Size, Millions	52 376	104.88	260.62	2.01	13 21.05
Population Growth, %	52 376	0.01	0.01	0.00	0.02
In-group Collectivism	52 376	5.11	0.71	3.46	5.86
Power Distance	52 376	5.31	0.35	4.14	5.68
Assertiveness	52 376	4.23	0.29	3.41	4.71
Future Orientation	52 376	3.80	0.49	3.06	5.64
Institutional Collectivism	52 376	4.14	0.40	3.41	5.26
Performance Orientation	52 376	4.05	0.32	3.34	5.04
Uncertainty Avoidance	52 376	4.17	0.56	3.09	5.42

Notes: All columns present unweighted values

[31] rho is the proportion of the total variance contributed by the country-level variance component
[32] df = degrees of freedom; χ^2 = chi-square

Table 13 Correlation matrix of individual-level variables in the study of culture on entrepreneurial actions

Individual-level variables	1	2	3	4	5	6	7	8	9
(1) Age	1.00								
(2) Gender	0.02	1.00							
(3) Education	-0.13	-0.02	1.00						
(4) Household Income Tier	-0.01	-0.08	0.32	1.00					
(5) Current Jobs	0.00	-0.02	0.02	0.00	1.00				
(6) Self-efficacy	-0.03	-0.16	0.10	0.11	-0.02	1.00			
(7) Fear of Failure	-0.01	0.07	-0.06	-0.07	0.00	-0.16	1.00		
(8) Growth Aspirations*	-0.03	-0.02	0.02	0.04	0.36	0.01	-0.03	1.00	
(9) Entry into Entrepreneurship**	-0.08	-0.06	0.03	0.03	.	0.23	-0.09	.	1.00

* Growth aspirations based on 5130 observations (sample size on which growth aspiration hypotheses were tested: Correlation matrix based on NON-Log transformed growth aspirations)

**Entry to entrepreneurship based on 52376 observations (sample size on which growth aspiration hypotheses were tested)

Notes: Observations for current jobs and growth aspirations are observed only for entry (=1). Identical values of entry (=1) for all observations of current jobs and growth aspirations therefore did not return any feasible correlation coefficients.

Table 14 Correlation matrix of national-level variables in the study of culture on entrepreneurial actions

Country-level variables	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**
(1) GDP Per Capita Purchasing Power Parity	1.00													
(2) GDP Change (%)	-0.65	1.00												
(3) Population Millions	-0.48	0.59	1.00											
(4) Population Growth	0.06	0.02	-0.11	1.00										
(5) Transition Economy	-0.50	0.66	0.55	-0.42	1.00									
(6) In-group Collectivism	-0.61	0.54	0.24	0.35	0.31	1.00								
(7) Power Distance	-0.32	0.13	-0.10	0.21	0.04	0.68	1.00							
(8) Assertiveness	0.37	-0.25	-0.35	0.33	-0.26	0.05	0.13	1.00						
(9) Future Orientation	0.46	-0.41	-0.04	-0.34	-0.21	-0.73	-0.66	-0.07	1.00					
(10) Institutional Collectivism	0.19	0.05	0.22	-0.44	0.21	-0.62	-0.66	-0.55	0.56	1.00				
(11) Performance Orientation	0.45	-0.27	0.16	0.00	-0.26	-0.46	-0.48	0.26	0.53	0.27	1.00			
(12) Uncertainty Avoidance	0.51	-0.31	0.10	-0.29	-0.22	-0.80	-0.66	-0.12	0.76	0.64	0.67	1.00		
(13) Growth Aspirations*	-0.03	0.07	0.08	-0.05	0.06	0.01	-0.06	-0.02	0.02	0.07	0.05	0.05	1.00	
(14) Entry into Entrepreneurship**	-0.10	0.07	0.06	0.01	0.02	0.05	0.00	-0.04	-0.02	-0.03	-0.01	-0.03	.	1.00

* Growth aspirations based on 5130 observations (Same sample size on which country-level hypotheses were tested: Correlation matrix based on NON-Log transformed growth aspirations)

**Entry to entrepreneurship based on 52376 observations (sample size on which growth aspiration hypotheses were tested)

Notes: Observations for growth aspirations are observed only for entry (=1). Identical values of entry (=1) for all observations of growth aspirations therefore did not return any feasible correlation coefficient.

Table 15 shows the influence of country-level predictors on the individual-level probability of entry into entrepreneurship. Country-level predictor estimates are standardised (beta coefficients) while all others are non-standardised. A random-effect logistic regression model is reported in Models 1 along with estimates for the fixed part (estimates of coefficients) and random part (variance estimates) as well as model fit statistics. The Models in Table 15 report the odds ratio.

We tested if country-level cultural norms had any cross-level influence on the probability of an individual's entry to entrepreneurship. Model 1 of Table 15 shows the influence of the three country-level predictors, namely, *institutional collectivism* (hypothesis H1), *uncertainty avoidance* (hypothesis H3) and *performance orientation* (hypothesis H5) on the probability of entry into entrepreneurship. We can see that an increase of one standard deviation in a country's societal institutional collectivism reduced the likelihood of individual-level entry into entrepreneurship by 22% (1 – 0.78) ($p < 0.1$). We see that an increase of one standard deviation in a country's cultural norm of uncertainty avoidance decreases the probability of an individual-level entry into entrepreneurship by 32% (1 – 0.68) ($p < 0.05$). The cultural norm of performance orientation increased the likelihood of individual-level entry into entrepreneurship by 32% ($p<0.05$). Combined, these findings support the country-level hypotheses H3 and H5 and provide some support for H1. The random component estimate in Model 2 of Table 15 shows that that the inclusion of the three additional country-level predictors explained an additional 30% of the unaccounted country-level variance in the model ($p < 0.000$)[33].

The standard errors associated with the variance components corresponding to the random intercept and the residual are shown in parentheses under the section "Random Part Estimates" in Table 15. The variance component of the random intercept is 0.11 which is less than twice its standard error (0.06), ie, since the variance component is not significantly larger than the standard error, there remains little significant unexplained variation in the intercept across countries. The residual variance decreased from 10% in the Null model (Model 0 of Table 15) to 3% in Model 2 suggesting that our final model explains up to 70% of the country-level variance.

[33] Note that this is not the full effect of a country's cultural norms, as the other country-level cultural norms were introduced in Model 1.

Table 15 Effects of culture on individual-level entry into entrepreneurship

Effects on Entrepreneurial Entry	0	2
Fixed Part Estimates		
Age		1.07***(0.01)
Age (Squared)		1.00***(0.00)
Gender		0.79**(0.03)
Education		1.02(0.02)
Household Income Tier		1.05*(0.02)
Transition Economy		0.46*(0.13)
GDP Per Capita Purchasing Power Parity		1.00(0.00)
GDP Per Capita Purchasing Power Parity (Squared)		1.00(0.00)
GDP Change (%)		1.12*(0.05)
Population (Millions)		1.00(0.00)
Population Growth		0.00(0.00)
Self-efficacy		5.85***(0.04)
Fear of Failure		0.68***(0.03)
In-group Collectivism		0.89(0.17)
Power Distance		0.84(0.09)
Assertiveness		0.79(0.11)
Future Orientation		1.04(0.08)
Country-level (Level-2) Predictors		
Institutional Collectivism **(H1 < 1)**		0.78+(0.12)
Uncertainty Avoidance **(H3 <1)**		0.68*(0.11)
Performance Orientation **(H5 >1)**		1.32*(0.18)
Constant	0.11***(0.12)	
Random Part Estimates		
Number of Observations	52376	52376
Number of Groups (Countries)	28	28
Variance of Random Component	0.60 (0.08)	0.37 (0.05)
% of Variance due to Random Component (rho)	10 (0.02)	4 (0.01)
Model Fit Statistics		
Degrees of Freedom	0	16
Chi-squared		2534***
Log Likelihood	-16205	-14496
AIC[a]	32410	29024
Likelihood Ratio (LR) Test[b]		*

Notes: Standard Error in parentheses
*** p<0.001, ** p<0.01, * p<0.05, + p<0.10
2-tailed significances
Estimates represent Odds Ratio (OR) (OR>1 represents positive relation: OR<1represents negative relationship)
Unstandadrdized GLS coefficients
[a] AIC is Akaike's Information Criteria and is = (2*k – 2(Log Likelihood)), where k is the number of predictors in the model
[b] LR Test performed using Maximum Likelihood Estimates (MLE)

Table 16 shows the individual- and country-level influences on individual-level entrepreneurial growth aspirations[34]. Again, country-level estimates are standardised (beta coefficients) while all others are non-standardised. Random intercept models are reported in column 1. Models 0, and 1 in Table 16 also report estimates for the fixed part (estimates of

[34] The dependent variable of growth aspiration is log transformed in all our analyses. A unit change in a predictor would thus result in a 100*(coefficient of the predictor) % change in the dependent variable

coefficients) and random part (variance estimates) as well as the model fit statistics corresponding to each model.

We tested whether country-level cultural norms influenced individual-level growth aspirations. Model 1 of Table 16 shows the influence of national-level societal *institutional collectivism* (hypothesis H2)*, uncertainty avoidance (*hypothesis H4) *and performance orientation* (hypothesis H6) on individual-level growth aspirations. These three cultural norms were transformed to their z-standardised scores. Societal institutional collectivism was positively associated (β= 0.35) with individual-level growth aspirations ($p < 0.01$). Since our dependent variable was log transformed and the country-level predictors are z-standardized scores, the estimates could be interpreted by saying that a one standard deviation change in societal institutional collectivism would lead to a 35% (100 * 0.35) increase in the growth aspirations by individuals. In countries with a high level of institutional collectivism, entrepreneurs are more likely to seek to grow their firms. The cultural norm of uncertainty avoidance was found negatively associated with individual-level growth aspirations, but this association was not statistically significant (β= -0.04). Performance orientation did not exhibit a statistically significant association with entrepreneurial growth orientations, either. Combined, these observations supported the country-level hypothesis H2 but not H4 and H6.

The random component estimates suggest that the remaining residual variance was 4% (0.06/ (0.06+1.38)). Thus, the three additional country-level predictors explained an additional 33% of the variance in intercept that existed between countries. The likelihood ratio test was again highly significant (df = 1; χ^2 = 133; $p < 0.000$).The standard errors associated with the variance components corresponding to the random intercept as well as the residual are shown in parentheses under the section "Random Part Estimates" in Table 16. The variance component of the random intercept is 0.06 which is thrice its standard error (0.02), i.e., since the variance component is significantly larger than the standard error, there remains significant unexplained variation in the intercept across countries. The reduction of variance component from 9% in the Null model (Model 0 of Table 16) to 4% in Model 1 in Table 16 suggests that more than half of the variance in intercept across countries could be explained by our final model.

Table 16 Effects of culture on individual-level growth aspirations

Effects on Growth Aspirations	0	1
Fixed Part Estimates		
Age		-0.01(0.01)
Age (squared)		0.00(0.00)
Gender		-0.17***(0.03)
Education		0.05**(0.01)
Household Income Tier		0.18***(0.02)
Current Jobs		0.001***(0.00)
Transition Economy		-0.62*(0.24)
GDP Per Capita Purchasing Power Parity		0.00(0.00)
GDP Per Capita Purchasing Power Parity (Squared)		0.00(0.00)
GDP Change (%)		-0.06(0.04)
Population in Millions		0.00(0.00)
Population Growth		0.00(0.00)
Fear of Failure		-0.09*(0.04)
Self-efficacy		0.15**(0.05)
In-group Collectivism		0.41**(0.15)
Power Distance		-0.16+(0.09)
Assertiveness		-0.21*(0.06)
Future Orientation		-0.06(0.07)
Country-level (Level-2) predictors		
Institutional Collectivism **(H2; positive)**		0.35**(0.13)
Uncertainty Avoidance		-0.04(0.13)
Performance Orientation		-0.00(0.11)
Random Part Estimates		
Number of Observations	5130	5130
Number of Groups (Countries)	28	28
Variance of Random Intercept	0.15(0.04)	0.06(0.02)
Variance of Overall Residual	1.46(0.03)	1.38(0.03)
% of Variance	9	4
Model Fit Statistics		
Degrees of Freedom	0	21
Chi-squared		295***
Log Likelihood	-8283	-8142
AIC[a]	16566	16326
Likelihood Ratio (LR) Test[b]		*

Notes: Standard Error in parentheses
*** p<0.001, ** p<0.01, * p<0.05, + p<0.10
2-tailed significances
Dependent variable is log-transformed
Unstandadrdized GLS coefficients
[a] AIC is Akaike's Information Criteria and is = (2*k – 2(Log Likelihood)), where k is the number of predictors in the model
[b] LR Test performed using Maximum Likelihood Estimates (MLE)

Robustness Analysis

Given the large number of observations and heterogeneity in an extensive cross-national longitudinal dataset such as ours, a potential concern is that the results could in part be driven by some influential outlying nations or social groups, or that the econometric evidence is tainted by some unobservable effect that we failed to include. Because of this concern, we

conducted robustness tests. To determine whether influential outliers such as specific nations overly influenced our results, we looked at the distribution of number of observations per country (shown in Table 11). Spain stood out as an outlier accounting for about 37% of the sample size. We removed Spain from our dataset and repeated our analyses. We also checked for outliers on the substantive predictors, namely fear of failure and self-efficacy. Spain, the UK and Thailand had substantially large number of data points for fear of failure (=1) and Spain and the UK also had large number of data points for self-efficacy (=1). In unreported analyses – available upon request – we removed those countries from our dataset and repeated our analyses. This did not significantly alter the results, indicating that our results are robust to outliers.

Model Fit Statistics

Pair-wise likelihood ratio tests between models (where one model is nested within the other) in Tables 15 and 16 that were used to test the statistical significance of twice the difference between the log likelihood of the two models confirmed that the addition of predictors in the models always significantly improved the fit of the model with a significance level of at least 5%. This fact is further corroborated by the decreasing absolute value of the log likelihood as a decreasing value of the Akaike's Information Criterion[35] across models.

Collienarity diagnostics

Finally, we also checked if any of the predictors as well as the dependent variable suffered from issues of multi co-linearity. The standard practice is to report the variance-inflation factor (VIF), the tolerance measure (1/VIF) and the R-squared (1 minus tolerance) value as measures that signals whether any variable suffers from issues of multi co-linearity. A VIF value less than 10 and hence a tolerance of greater than 0.1 marks the safe range, suggesting that variables do not suffer from multi co-linearity. Table 17 below reports the results of the tests performed to verify whether any of the variables used in this study suffered from multi

[35] AIC (Akaike's Information Criterion) is = (2*k – 2(Log Likelihood)), where k is the number of predictors in the model

co-linearity. We observe that as per conventions, none of our variables suffer from multi collinearity.

Table 17 Collinearity diagnostics

Variable	VIF	Tolerance	R-squared
Entry into entrepreneurship	1.08	0.92	0.07
Growth aspirations	1.17	0.85	0.14
Age	1.06	0.94	0.05
Age (squared)	1.05	0.95	0.04
Gender	1.04	0.95	0.04
Education	1.19	0.84	0.15
Household income	1.17	0.85	0.14
Transition Economy	1.10	0.91	0.09
Current jobs	1.15	0.86	0.13
GDP per capita (KUSD)	3.74	0.26	0.73
GDP (squared)	4.73	0.21	0.78
GDP change (%)	5.30	0.18	0.81
Population (in millions)	2.64	0.37	0.62
Population growth (%)	1.61	0.62	0.37
Self efficacy	1.16	0.85	0.14
Fear of failure	1.06	0.94	0.05
In group collectivism	9.34	0.10	0.89
Power distance	3.13	0.31	0.68
Assertiveness	4.55	0.21	0.78
Future orientation	3.34	0.29	0.70
Institutional collectivism	6.70	0.14	0.85
Uncertainty avoidance	7.76	0.12	0.87
Performance orientation	6.47	0.15	0.84

5.4 Conclusions

Our study is among the first, if not the first, to pinpoint some of the crucial mechanism by which national cultural norms and individual-level factors jointly shape entrepreneurial behaviours using multi-level analysis techniques. We found strong associations between societal institutional collectivism, uncertainty avoidance and performance orientation, on the one hand, and individual-level probability of entry into entrepreneurship, on the other. Our analysis indicates that the effect of cultural norms on the probability of entrepreneurial entry is both statistically significant and important in absolute terms.

The analysis of the effect of cultural norms on an individual's entrepreneurial growth aspirations yielded findings that go against widely held beliefs. First, we observed that societal institutional collectivism constitutes a positive influence on individual entrepreneurs' growth orientations. This finding shows that the popularly held perception, that

individualistic societies are the most entrepreneurial, is only half true. We found that collectivist societies tend to support risk-taking and resource-mobilising acts, such as organic growth. Conversely, our analysis suggests that if societies go overboard with individualism, they may fail to create the societal risk-sharing mechanisms that would encourage entrepreneurs to 'take the plunge' and pursue organisational growth. Our findings thus support Tiessen's (1997) proposition that it is useful to distinguish between variance-inducing and resource-mobilising aspects of entrepreneurship when analysing the effect of individualism-collectivism. We also found uncertainty avoidance to be negatively associated with both entrepreneurial entry and entrepreneurial growth aspirations. Both entry and growth represent departure from established norms and a venture into a realm where expectations are not necessarily clearly laid out and few procedures exist to bring stability to social interactions.

Our study also comes with limitations, many of which represent interesting avenues for replicating, challenging, and extending the theoretical model presented. Of societal-level constructs in our theoretical model, we focused on the cultural norms of Individualism-Collectivism, Uncertainty Avoidance, and Performance Orientation. Following Hofstede (2006) we opted to focus on the construct institutional collectivism but it is possible that the construct of in-group collectivism, specifically its relationship to corporate venturing, might yield promising results. There are many more cultural attributes, such as, for example, assertiveness, acting autonomous and gender egalitarianism, which also might influence entrepreneurial behaviours. The extension of our theoretical model to of additional individual-level and country-level concept could further explain the nuances of individual-level entry into entrepreneurship as well as entrepreneurial growth aspirations in cross cultural settings. Our study represents a first attempts at integrating these hitherto disparate theoretical bodies in theoretically and methodologically unified multi-level framework that helps explains why previous cross cultural research on business behaviour in general and entrepreneurial behaviour in particular have failed to provide a more unified set of results.

In conclusion, this study has demonstrated, using a rigorous application of multi-level analysis techniques, important and counterintuitive relationships between national cultural attributes and individual-level entrepreneurial behaviours. Our research represents only an early inquiry into this fascinating area. We hope that our study will inspire further studies of this important topic.

Chapter 6: National Cultural Orientations as a Context and its Influence on Persistence in Entrepreneurship

In this chapter, I contribute towards a better understanding of how societal-level cultural orientations influence entrepreneurial actions in general and how they hinder or foster persistence in the entrepreneurial process in particular. Utilising a process based theory, entrepreneurship would be viewed as a process comprising of multiple stages and subsequent to that, the study would show that cultural norms influence the entrepreneurial process in dissimilar ways at these different stages. Using Global Entrepreneurship Monitor (GEM) data for 37 countries between 2001-2008 combined with data on national cultural norms from the Global Leadership and Organizational Behavior Effectiveness *(GLOBE)* study, a quasi-longitudinal analysis that details the cross-level effect of national cultural attributes on the likelihood of an individual qualifying as nascent, new or established entrepreneur would be proposed and carried out. The initial findings claim to challenge two popularly held notions that cultural norms have similar effects at all stages of the entrepreneurial process and that individualistic societies are the most entrepreneurial. While collectivist societies tend to inhibit variance-inducing act of entrepreneurial-entry, they enhance entrepreneurial risk-taking by collective risk-sharing and resource-mobilizing acts in subsequent stages of entrepreneurship. A process model such as this allows for the temporal resolution of the entrepreneurial process into stages. By looking at the influence of cultural norms on the stages, one can accommodate for the possibility that national culture could exercise non-static as well as a more lasting influence on individual-level entrepreneurial actions, and thus, it may influence, for example, the persistence of individuals in the entrepreneurial process. This comprehensive study is reported in the next section[36].

Extant literature in entrepreneurship has frequently recognised national cultures as a central regulator of entrepreneurship (Baumol 1990; Autio, Pathak and Wennberg 2010, Stephan and Uhlaner 2010). In spite of this recognition our knowledge on how cultures shape individuals' entrepreneurial behaviors is still incomplete (Begley & Tan, 2001, Freytag & Thurik, 2007, Hayton, George, & Zahra, 2002, Kreiser, Marino, Dickson, & Weaver, 2010). This is an important gap within which could lay answers to why some countries are more entrepreneurial than others. Thus, although the entrepreneurial act of creating a new firm is essentially an individual-level phenomenon (Gartner, 1988); the role of an individual's cultural orientations in regulating such entrepreneurial actions should not be overlooked.

[36] This is a work in progress and I am the sole author of this paper thus far

Research that has taken notice of this, have done so by assuming that the entrepreneurial process is limited to the act of making an entrepreneurial entry and by looking into how national cultural orientations influence such entries. In doing so, it has treated entrepreneurial actions as static in nature ignoring the fact that those actions get continuously revised all along the entrepreneurial process and that culture may then have dissimilar effects along the process too . For example, entrepreneurial entry may symbolize a variance-inducing act wherein an individual takes risk, evaluates the probability of failure and his own ability to succeed, makes trade-offs with alternate and standard forms of employment, sustains opportunity costs and challenges the status quo. National cultures that encourage risk taking under uncertainty, that have more pronounced individualistic orientations and those that are tolerant towards failure would be supportive of such variance-inducing acts of entrepreneurial entry. Once an entry has been made individuals would divert their actions towards resource-mobilizing aiming to, for example, lay a more developed organizational structure, appropriate returns on opportunity costs and trade-offs and realize growth. National cultures that are more collectivist in their orientations would tend to inhibit variance-inducing acts such as entry and would support risk-taking by collective risk-sharing and resource-mobilising acts in the subsequent stages of entrepreneurial process. Entrepreneurial actions along the entrepreneurial process are thus non-static and so could be the influences of cultures.

Effects of culture on events post entrepreneurial entry have seldom been studied. National cultural orientations may influence persistence into subsequent to entry stages of entrepreneurial process. Considering entrepreneurship is an important driver of job creation and economic development (Henrekson, 2005; OECD, 2010; Acs, 2002; North, 1990), it becomes ever so important to look into what national level context – notably, national culture - drives the entrepreneurial cycle forward. In this chapter, we utilise a process based theory of entrepreneurship that establishes entrepreneurship to be comprised of multiple stages and show how cultural norms influence the entrepreneurial process in dissimilar ways at these different stages. We establish that it is this mechanism through which cultures cast dissimilar influences at different stages that eventually regulates the likelihood to persist into or exit from entrepreneurship. By looking at the influence of cultural norms on the stages, we accommodate for the possibility that national culture could exercise non-static as well as a more lasting influence on individual-level entrepreneurial behaviors, and thus, it may influence, for example, the persistence of individuals in the entrepreneurial process. We contribute towards a better understanding of how national cultural norms influence the

entrepreneurial process by either favouring or hindering persistence in entrepreneurship. A detailed description on the entrepreneurial process and its constituent stages is provided in a subsequent section.

Studying the influence of national cultures on individuals' entrepreneurial actions entails the consideration of two levels of analysis. Methods applied to such multi-level studies often introduce inconsistencies in the treatments of the levels concerned. For example, studies that have looked at the influence of country-level measures of cultures on the national aggregate rates of entrepreneurship have consistently ignored that entrepreneurship, although influenced by cultural context, is fundamentally realized at the level of the individual. The use of higher-level aggregates of lower-level behaviours may mask or potentially even distort individual-level decision processes (Kozlowski & Klein, 2000). Entrepreneurship research, on the other hand, has often tended to use individual-level operationalisations of cultural norms, thereby ignoring the fact that, as an encapsulation of a shared belief system, culture is fundamentally a collective construct (Hofstede, 1980). Measuring culture as the individual perceives it may therefore mask the effect of cultural practices on individual's business behaviours. Another significant issue in studies that look at the association between national culture and individuals' entrepreneurial behaviors lies in the inappropriate application of OLS regression techniques. Since such studies often employ the use of clustered data (individuals grouped or clustered by country), OLS regressions are almost certain to introduce bias in the estimates. A multi-level technique that preserves the identity of the involved levels of analysis should be in order. Using Global Entrepreneurship Monitor (GEM) data from 37 countries between 2001 – 2008 combined with data on national cultural norms from the Global Leadership and Organizational Behavior Effectiveness (*GLOBE*) study (House et al., 2004), we emply multi-level methods that details the cross-level effect of national cultural attributes on the likelihood of an individual qualifying as nascent, new or established entrepreneur.

Our analysis reveals that – contrary to popularly held notion – the cultural norm of societal *institutional collectivism* is *negatively* associated with individual-level entrepreneurial entry into nascent entrepreneurship but *positively* associated with entry into new and established entrepreneurship, reflecting the varying effect of institutional collectivism on different stages of the entrepreneurial process as well as the fact that national cultures that tend to be more collectivistic in orientations support persisting in stages of entrepreneurship subsequent to that of entry. In addition, we find that the cultural norm of *uncertainty avoidance* is *negatively* associated with entrepreneurial entry into nascent, new and established

entrepreneurship, while the cultural norm of *performance orientation* is *positively* associated with entrepreneurial entry into all the three stages of the entrepreneurial process. Our study is among the first to pinpoint some of the crucial mechanisms by which national cultural norms and individual-level factors jointly shape entrepreneurial behaviours. Specifically, we believe that this is the first process-based quasi-longitudinal analysis of the entrepreneurial process that details the cross-level effect of national cultural attributes on the likelihood of an individual qualifying as nascent, new or established entrepreneur We contribute to international business and entrepreneurship research by showing how individuals' entrepreneurial behaviours are contingent on the cultural context in which they are embedded and by bringing into light the differential influence of cultures on the various stages of entrepreneurial process that could be either supportive or disruptive of persistence into entrepreneurship. We also contribute methodologically by developing and testing multi-level framework that allows for more advanced tests of the directionality of causation across levels.

The Entrepreneurial process

The entrepreneurial process has often been looked upon as beginning at the instant when a first-person opportunity is discovered and with any kind of initiation of activities by the agent to start a new firm (McMullen & Shepherd, 2006; Eckhardt & Ciuchta, 2008). Reynolds and White (1997) suggest that the entrepreneurial process begins with the *conception* of potential entrepreneurs (all individual), *gestation* of a new firm (nascent entrepreneurs) and *infancy* (fledging new firms), and ends with *adolescence* (new firms that are firmly established). Korunka et al., (2003) articulate about the entrepreneurial process by saying "…begins with the first actions of the nascent entrepreneur…and ends with the first activities of the new venture". This view identifies individual founder(s) and the new firm as discrete entities and considers them entirely distinct from one another. Going beyond the entry and the first activities initiated by an individual stage alone, Bygrave (1994) furthers the view of the entrepreneurial process by including growth in the early stages of the firm as the end point of the entrepreneurial process, while growth *per se* is viewed as an important entrepreneurial event by Davidsson, Delmar and Wiklund (2002). All these views assume that the

entrepreneurial process consists of activities that lead to the creation of a new firm and that the end of the process is the establishment or growth of the firm.[37]

In this study, we also distinguish between 'stages' of the entrepreneurial process and define the different stages using GEM operationalizations. GEM identifies three types of entrepreneurs. These are: (1) *nascent* entrepreneurs (individuals who are active in the process of starting a new firm for less than a year but have not yet launched one); (2) *new* entrepreneurs (owner-managers of new firms who have paid wages to any employees for more than 3 months but less than 42 months); and (3) *established* entrepreneurs (owner-managers of firms 42 months old or older). As a cross-sectional panel survey, GEM does not follow the individuals over time, so it is not a panel data set. Rather, different individuals may qualify for different 'stages', as operationalized by GEM. However, for a given individual to qualify as 'established entrepreneur', it is necessary for that individual to first have been a 'nascent' and subsequently a 'new' entrepreneur. Hence, samples of entrepreneurs representing the two stages post entry (i.e. samples of new and established entrepreneurs) are quasi-longitudinally progressed ones. In this chapter, we hypothesize the likelihood of entry into each of these three stages. A positive likelihood of entry into the second stage i.e. into new entrepreneurship would be suggestive of the fact that an individual has persisted in entrepreneurship past the entry stage and similarly a positive likelihood of entry into the third stage i.e. into established entrepreneurship would be suggestive of the fact that an individual has persisted in entrepreneurship past the stage of new entrepreneurship[38].

6.1 Theory and Hypotheses

Individuals make decisions on entrepreneurial entry that involves taking risks, evaluating the probability of failure and their own ability to succeed, making trade-offs with alternate and standard forms of employment, sustaining opportunity costs and challenging the status quo. Subsequent to an entry, they may eventually decide to persist or quit based upon the outcome of self-evaluation, the perceived self-efficacy, the extent of their commitment and

[37] Some authors have extended the view of the entrepreneurial process to also constitute the process leading up to an "exit", from where the founder(s) whitdraw from entrepreneurship (DeTienne, 2010; Petty, 1997).

[38] For the sample of established entrepreneurs, we have no information on precisely their duration of stay in established entrepreneurship beyond 42 months. All we know is that this sample is representative of owner-managers of firms 42 months old or older. Hence, we are limited in our knowledge of their persistence in entrepreneurship

the economic returns on trade-offs and opportunity costs. Although entrepreneurial behaviors of entry, persistence or exit are undertaken by individuals, they are contingent upon the given societal and cultural context in which those behaviors are performed (Davidsson and Wiklund 2001, Jack and Anderson 2002, Phan 2004, Shane and Venkataraman 2000). One has to evaluate whether or not the context is conducive for persistence or what are the constraints and trade-offs in their context (Aldrich 1999) that might stifle persistence, etc. Thus, after carefully scrutinizing their own aspirations as well as the prevailing contextual factors, individuals evaluate the extent to which they could persist in the entrepreneurial process.

The decision to enter as well persist into entrepreneurship depends on whether or not such decisions create prospective returns greater than alternative courses of actions. Logics for rationalizing entry into entrepreneurship in general and persistence in particular could be based upon economic as well as social utility considerations. Both these logics concern opportunity costs associated with persistence in the entrepreneurial process. Under the purview of economic logics, entrepreneurs are motivated to persist in entrepreneurship aiming to appropriate economic returns, as they act under uncertainty and sustain opportunity costs and trade-offs associated with the allocation of efforts in alternative occupational pursuits (Autio and Acs 2010, Cassar 2006). National cultural orientations that enhance entrepreneurial risk-taking by the collective risk-sharing will favourably influence persistence in entrepreneurship.

Social logics behind entrepreneurial entry and subsequently persisting with entrepreneurship concern the social consequences of alternative courses action (Klyver and Thornton 2010). Social logics allow individuals to behave in ways that conform to what is considered by others as legitimate – i.e., desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and motives (Suchman 1995: 574). National cultural orientation that places entrepreneurship at a higher status and those that considers it as more respectful than any alternative career will be influential in establishing legitimacy to enter and subsequently persist in entrepreneurship. On the other hand, societies that score high on the cultural norm of uncertainty avoidance would increase the legitimacy cost of entrepreneurial entry. If conditions do not favour entry, they would not be conducive for persistence in entrepreneurship as well.

Further, national cultural orientations that tend to encourage and reward innovations and value performance improvement may result in the escalation of an individual's own

commitment to persist in entrepreneurship subsequent to an entry. Individual's aspirations to perform and succeed based upon on his abilities, skills and self-efficacy would be reinforced in societies that associate value and reward with an individual's performance. Combined, we argue that an individual's cultural context would have a regulatory influence on the decision to enter into entrepreneurship and eventually persist in it. We argue that decisions of entry as well persistence depends on whether or not national cultural orientations aid to create prospective returns – economic or social - greater than alternative courses of actions and whether or not they reinforce an individual's commitment to persist.

In this chapter, we study the regulatory influence of three specific measures of cultural orientations: *individualism-collectivism, uncertainty avoidance* and *performance orientation* on the likelihood of an individual qualifying as *nascent, new* and *established* entrepreneur. (House et al, 2004). The salient aspects of entrepreneurial behaviours –risk taking, innovativeness and proactiveness – resonate closely with the national cultural norms of individualism-collectivism, uncertainty avoidance and performance orientation. It is thus not surprising that these are the most widely explored (in practice, the only) cultural norms in entrepreneurship research (Hayton, George, & Zahra, 2002). Our theoretical model is illustrated in Figure 12.

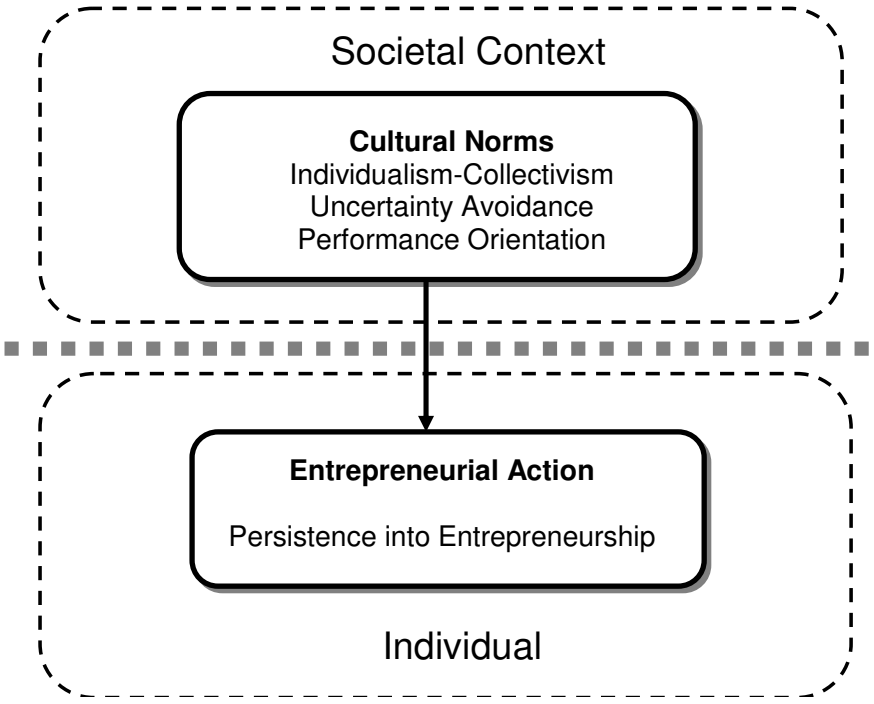


Figure 14 Theoretical model of the influence of culture on persistence into entrepreneurship

As noted above, entrepreneurship consists of both variance-inducing and resource-mobilising behaviours (Kirzner, 1997, Tiessen, 1997). This is reflected in our theoretical model: we expect variance-inducing behaviours (and cultural influences thereupon) to be mainly associated with entrepreneurial entry (nascent), and we expect resource-mobilising behaviours to be mainly associated with new and established entrepreneurship. Specifically, we focus on the cultural norms of societal institutional collectivism, uncertainty avoidance, and performance orientation.

Institutional Collectivism and Persistence in Entrepreneurship

The most predominantly studied dimensions of culture in sociological and anthropological research concerns those of individualism-collectivism (Smith and Bond 1993, Triandis 1995). Hofstede's (1980) survey defined an individualistic society as the one in which the ties between individuals are loose and that his personal needs are placed over and above those of the group. Several studies have had their own conceptualisation of the cultural dimension of individualism-collectivism. For example, Gelfand et al's (2005) study discerns the concept of individualism or collectivism in terms of societal institutions and in-group collectivism. GLOBE defines societal institutional collectivism "the degree to which organizational and societal institutional practices encourage and reward collective distribution of resources and collective action" (House et al, p. 30) whereas defines in-group collectivism as "the degree to which individuals express pride, loyalty, and cohesiveness in their organizations or families". Particularly noteworthy is their characterisation of societal institutional collectivism which recognises societies with high institutional collectivism as those where critical decisions are made by the group; the social economic system maximizes the interest of collectives and group loyalty finds precedence over the pursuit of individual goals. On the other hand societies with low institutional collectivism as those where critical decisions are made by individuals; the social economic system maximizes the interests of individuals and the pursuit of individual goals finds precedence over group loyalty. Since entrepreneurship is a socially driven economic activity where the individual considers his entrepreneurial behaviors in relation to his societal environment, we use the effect of societal institutional collectivism in this study.

We propose that societal level institutional collectivism will be negatively associated with entry into nascent entrepreneurship but positively associated with entry into new and

established entrepreneurship. Such associations are felt owing to mechanisms through which institutional collectivism influences, in dissimilar ways, the variance-inducing acts during entry and the resource-mobilising acts during new and established entrepreneurship (Tiessen 1997). Positive influence of institutional collectivism on the subsequent stages would therefore concern an individual's persistence in entrepreneurship.

In this chapter, I draw upon the arguments presented in the previous chapter (Chapter 5) that link societal-level institutional collectivism and entry into entrepreneurship. It was posited in Chapter 5 that an individual's employment choice is arguably the single most important determinant of societal status (Steinmetz & Wright, 1989). Through career choices, individuals signal their life preferences, aspirations and education (Near et al., 1980). Entrepreneurial career choices differ fundamentally from employment. When an individual embarks upon an employed career, it signals that the individual operates within the confines of established role definitions, social hierarchies and power relations. Conversely, when an individual starts an entrepreneurial firm, it signals a departure from established social hierarchies and perhaps even a willingness to challenge the established status quo. Such signals would not likely be well received on societies characterized by strong societal institutional collectivism.

Entry into entrepreneurship is also likely to influence an individual's ability to discharge of social obligations towards her social group. Entrepreneurial income is inherently less certain than employment, making it less likely that the individual will be able to successfully deliver on her obligations toward others (Gelfand et al., 2004). Relative to employment, therefore, an entrepreneurial career choice signals a break with established power relations, conflicting with collectivist norms and values(Triandis, 1995). Relative to employment, an entrepreneurial career choice also signals that the individual prioritizes her own interests and ambitions relative to those of the collective (Tiessen, 1997). Such signals would reduce an individual's legitimacy within a culture characterized by high societal institutional collectivism, and therefore, inhibit self-reflective individuals from choosing entrepreneurship over employment. Thus, we hypothesize:

> ***Hypothesis* 1***: Societal-level institutional collectivism will be negatively associated with entry into entrepreneurship at the individual level.*

Entry into entrepreneurship alone, however, by no means marks the culmination of the entrepreneurial process. In fact, less than one tenth of all individuals who "take the plunge" go past the entry stage to subsequently persist in entrepreneurship. Following this observation, one may put forth the pertinent question of why some individuals and not others persist in entrepreneurship. We argue that the same mechanisms through which the regulatory influence of societal-level institutional collectivism is felt on an individual's decision to enter into entrepreneurship no longer apply which could also explicate his persistence in it. In the following, we posit causal mechanisms whereby societal-level institutional collectivism will be positively associated with persistence in entrepreneurship, suggesting that collectivistic societies promote persistence in entrepreneurship.

Entry into entrepreneurship as such is an uncertain move relative to standard forms of employment. Post entry, persistence in entrepreneurship would represent a strategic career choice made by the focal entrepreneur if the return on risks could be maximized. Personal risks associated with choosing entrepreneurship as a career prior to entry gets translated into risks associated with the survival of the venture post entry. The individual persists if the venture is likely to survive. However, newly launched ventures would not have evolved well-defined organisational structures, which add to the ambiguity in task and role definitions. Further, identifying potential sources of finance, hiring new and retaining existing employees, growth, diversification, etc represents important functions that a new venture would not have enacted before, thereby augmenting the uncertainties associated while performing each of these functional entities. An individual persists if these uncertainties could be mitigated. Societal-level cultural orientations could be argued to exercise a regulatory influence on persistence through mechanisms that could facilitate mitigation of uncertainties.

We posit that institutional collectivism influences persistence through its effect on *risk-sharing* and *role-identification*. Recalling GLOBE's definition of societal institutional collectivism as "the degree to which organizational and societal institutional practices encourage and reward collective distribution of resources and collective action", we argue that societies that are high on institutional collectivism are the ones that not only encourage individual risk-taking by facilitating societal risk-sharing through collective action but that also mitigate uncertainties associated with various functional entities through role-specific participation. These, we argue, are the two pertinent mechanisms through which societal-level institutional collectivism exercise its influence on individual-level persistence in entrepreneurship.

Individuals with foresight are aware of the social consequences behind the pursuit of entrepreneurship. Entrepreneurs that have entered would have, in addition to sustaining economic risks, also risked their social standing in the event of an entrepreneurial failure. Collectivist societies offer to mitigate this risk by being collectively responsible for failure, thus relaxing the stigma associated with failure and hence reducing the legitimacy cost of entrepreneurship. Hence, societies that have a more collectivist orientation are more likely to encourage entrepreneurs to persist in entrepreneurship by ensuring to safeguard their social standings and by sharing the risk of failure. Further, societies high in institutional collectivism tend to evolve structures and mechanisms that seek to create benefits for the society (Thelen, 2004). The more such activities are evolved, the more sophisticated the societal institutional infrastructure becomes. The classic argument of Evsey and Musgrave (1994) emphasized precisely this aspect of collectivist societies. In their argument, high tax rates typical of institutional-collectivist societies represent a form of societal risk sharing. In societies with collectivist institutions, the society will first tax and then re-distribute personal and business income for purposes considered beneficial for the society (Cullen & Gordon, 2007). This mechanism both increases the availability of external resources potentially available for entrepreneurs and also makes the access to such resources more impartial. Societal redistributive mechanisms would therefore favor risk-taking by entrepreneurs who have already entered encouraging them to persist in entrepreneurship.

Subsequent to an entrepreneurial entry, an entrepreneur's perceived entrepreneurial self-efficacy is no longer the single most determining factor for a venture's success. Rather, the overall success depends upon the combined successes of all functional entities involved in a new venture. Although aware of the various entities, the focal entrepreneur may not usually have the necessary expertise to discharge each of these duties, thus raising doubts regarding the success of the venture. Mechanisms that ensure that each of these duties is being discharged ensure survival. In collectivist societies, resources in the form of expertise and specializations are more likely to combine and present themselves as available through their collective distribution and efficient division of labor. This enhances the probability of collective actions taken towards carrying out role specific functions entailed by new ventures. For entrepreneur's that have entered, this scenario of collective action substantially reduces the uncertainties initially perceived to be associated with the discharge of various functions.

Further, societies that are high in institutional collectivism are characterised by members who assume that they are highly interdependent with the organization (House et al 2004).

Institutional practices in such societies reduce social hierarchies and power relations between its members and foster the evolution of the society's economic system that tends to maximize the interests of collectives (House et al 2004). Members of highly collectivist societies share the focal entrepreneur's efforts towards developing a well-defined organisational structure, thereby subsequently reducing the ambiguity in task and role definitions within the new venture. An entrepreneur's subsequent realisation about venture-survival drawn from reduced uncertainties would reinforce and revitalize his pursuit and persistence in entrepreneurship. Collectivist societies would thus share the entrepreneur's burden in mobilising activities related to the functional entities of a new venture allowing him to better discharge his duties. Hence, by encouraging risk-taking through societal risk-sharing and by mitigating uncertainties associated with a new venture's organisational structure through collective distribution of resources and actions, societal-level institutional collectivism enhances the probability of an entrepreneur to persist in entrepreneurship. Therefore, we hypothesize:

> ***Hypothesis 2****: Societal-level institutional collectivism will be positively associated with entry into new and established entrepreneurship such that in societies where institutional collectivism is higher, persistence in entrepreneurship will be higher.*

Performance Orientation and Persistence in Entrepreneurship

The cultural norm of performance orientation reflects the extent to which a community encourages and rewards innovation, high standards and performance improvement (Javidan, 2004). In his review of the construct, Javidan (2004: 245) associated the cultural norm of performance orientation with, e.g., the valuation of training and development; an emphasis on results rather than people; competitiveness and materialism; setting of demanding targets; having a 'can-do' attitude; appreciation of feedback as necessary for improvement; the taking of initiative; bonuses and financial rewards; and the belief that anyone can succeed if they try hard enough. All of these values are often associated with entrepreneurship in the literature.

We predict that national level performance orientation will be positively associated with entry into nascent, new and established entrepreneurship. A positive influence of performance orientation on entry into the second stage i.e. into new entrepreneurship would be suggestive of the fact that an individual has persisted in entrepreneurship past the entry

stage. An entry into entrepreneurship is typically an uncertain and hence a difficult proposition which represents departing from conventional and standard forms of employment. Consequently, societal perceptions of performance in entrepreneurship are likely to be different from those in conventional career paths. Societies that score high on performance orientation are those that would have realised the potential outcomes from entrepreneurship, for example, innovation, high standards, valued results, etc. Prevailing norms of performance orientation would thus serve as a tacit nod that would justify going forward with entrepreneurship and signal its legitimacy. Individuals who during entry (nascent) are driven more by "I *have* to perform" and during the early stage (new) of entrepreneurship have only just begun to reap the rewards of entrepreneurship are likely to have their aspirations reinforced in high-performance societies. Therefore, such societies send signals that an individual is ready to set a high bar on himself (Cassar, 2007). GEM operationalisations of nascent and new entrepreneurship are typical of stages in the entrepreneurial process where individuals are getting their acts together or have slowly but surely started to realise some returns. They still contemplate the idea of taking initiatives so that they could appropriate maximum returns that they had hoped for to begin with. The act of initiation towards realising aspirations itself would be regarded more highly in societies characterised by high performance orientation. Combined, high performance orientation societies increase the likelihood of entry (nascent) and persistence during early (new) stage of entrepreneurship which is when individual's own commitment are escalated based upon prevailing norms. Societies with high performance orientation reinforce an individual's personal assessment of his performance aspirations during entry and early stages. Therefore, we hypothesize:

> ***Hypothesis 3****: Performance orientation at the societal level will be positively associated with entry into nascent entrepreneurship and new entrepreneurship at the individual-level, that performance orientation at the societal level will favour persistence in entrepreneurship past the entry stage*

Once past the variance-inducing stage where an entrepreneurial entry is made, entrepreneurs allocate efforts to mobilise resources. The stage of new entrepreneurship is thus consumed by activities aimed to realise performance aspirations. Having past that stage, entrepreneurs those who enter into established entrepreneurship would have stayed long enough in the entrepreneurial process to realise whether or not their expected returns from

entrepreneurship have been met. By the time a transition between new to the established stage of entrepreneurship is made, entrepreneurs would have already steadied their ventures from uncertainties and maximized returns or would have failed to reap the expected returns. In the former case scenario, individuals would have already lived up to the expectations of their societies and in turn would have been rewarded by them. Societal reward was a motivational factor for them during entry and early stages, but having already reaped the rewards societal level performance orientation would then have a neutral effect on the entry to established entrepreneurship. In the later case scenario, having assessed that they have failed to meet society's expectations out of their entrepreneurial pursuit, and that they would be unable to reap societal rewards, they would not be motivated to enter into established entrepreneurship. Therefore, we hypothesize:

> ***Hypothesis 4****: Performance orientation at the societal level will have a neutral influence or will be negatively associated with entry into established entrepreneurship at the individual-level, such that performance orientation at the societal level will have no effect or hinder persistence in entrepreneurship past the stage of new entrepreneurship*

Uncertainty Avoidance and Persistence in Entrepreneurship

Uncertainty avoidance refers to the extent to which individuals in a given society feel threatened in ambiguous situations, the extent to which individuals prefer order and rule-based reduction of uncertainty as well as the extent to which uncertainty is generally tolerated in a society (Sully de Luque & Javidan, 2004). In Hofstede's definition, uncertainty avoidance is "the extent to which the members of a culture feel threatened by uncertain or unknown situations" (Hofstede, 1991: 113). In our consideration, we draw on these two definitions and specifically focus on the part of uncertainty avoidance to representing the extent to which individuals in a given society will feel threatened by ambiguity, prefer rule-based mechanisms for uncertainty reduction and seek orderliness, consistency, structure and formalised processes in their lives.

We propose that societal uncertainty avoidance will be negatively associated with entry to all stages of entrepreneurship. An entrepreneurial entry represents a departure from standard wage employment. While regular forms or employment are governed by fixed set of rules

and established contractual relationships, new ventures typically represent immature organisational structures that are still in the process of evolution and those where individual roles are not well defined. Organisational structures that are not fully fledged to begin with therefore add to the uncertainty of entrepreneurial entry.

Societies that are high in uncertainty avoidance are the ones where individuals would typically prefer standard forms of employment. This would suggest then that the prevalence of individuals choosing regular jobs would be higher, which would further mean that such societies would then have lesser and lesser entrepreneurs. This would result in a situation where there are not enough role models that would have "lead from the front" and would have exemplified entrepreneurial success. Lesser number of successful entrepreneurial instances would lead to further uncertainty because there would be limited lessons of guidance available. To make matters worse, any stories of entrepreneurial failure could also be interpreted as a negative social signal in societies high in uncertainty avoidance. This would shoot the potential legitimacy costs associated with entrepreneurial entry thereby inhibiting entry.

However, Once an entrepreneurial entry has been made, it is about appropriating maximum returns on opportunity costs and trade-offs associated with choosing entrepreneurship over alternative careers. The stage past entry , as pointed earlier, demands mobilisation of resources and allocations of efforts such that returns could be maximised. However, such resource mobilising and effort-allocating acts could have some uncertainty associated with them. One is not very sure about what would be the "best combination" that would reap maximum rewards. Hence, unlike the uncertainties about whether one would fail or succeed associated with entrepreneurial entry, there could be uncertainties associated with the execution during subsequent stages of entrepreneurship. Societies that are high in uncertainty avoidance would have not had to see such ambiguity associated with executing actions owing to the fact that they would have seen the majority of their members choosing to work under prescribed rules and regulations. Hence, there would be no prescribed solutions to such ambiguous situations that may arise during the subsequent stages of entrepreneurship. Further, additional ambiguity could be created by the delay between investments required to get the new business up and running and the materialisation of expected returns. Because resource investments during the subsequent - to - entry stages are made under incomplete information, there will be considerable uncertainty associated with the outcomes of such investments. An entrepreneurial entry, although signals going against norms in societies with

high uncertainty avoidance, if is followed by a success would still be pardonable, but failure to achieve the outcomes of entrepreneurship would be severely punished socially in societies characterised by uncertainty avoidance. This would severely dent one's intentions to enter as well as persist in the subsequent stages of entrepreneurship. Therefore, we hypothesize:

> ***Hypothesis 4****: Uncertainty avoidance at the societal level will be negatively associated with entrepreneurial entry into all stages of entrepreneurship such that greater the uncertainty avoidance in subsequent stages, lesser will be the probability to enter into those subsequent stages and hence lesser the probability to persist in the subsequent stages of entrepreneurship*

6.2 Methodology

Our theoretical model draws on entrepreneurship theories to highlight individual-level socio-cognitive motivations for entering and persisting with new firms, as well as on international business research that considers the effect of culture and institutions on economic activity. We performed our analyses using data of adult-population survey from the Global Entrepreneurship Monitor (GEM) survey for 37 countries for the years 2001-2008, to form an initial database of 401 831 (un-weighted) interviews of adult-age individuals (Reynolds, Bosma, & Autio, 2005). We complemented this dataset with data on national cultural norms for the same set of 37 countries included within the GEM, as collected by the Global Leadership and Organizational Behavior Effectiveness (*GLOBE*) study (House et al., 2004). By combining these two datasets, we analyse 401 831 (unweighted) interviews in 37 different countries, listed in Table 18 and 19 below. Further, we supplemented our data with controls for national-level attributes provided by the International Monetary Fund (IMF) and EuroStat for the years 2001-2008 and for the 37 countries involved in the analyses.

Table 18 Sample descriptive for the study of culture on persistence in entrepreneurship

Country	N	%N	Age	Gender	Education	Hhinc	%Nascent	% New	% Estb
Argentina	6156	1.53	38	1.49	2.20	1.99	9.34	5.38	8.37
Australia	5638	1.40	43	1.58	2.45	2.11	5.87	5.68	11.65
Austria	1692	0.42	40	1.48	1.75	1.84	4.26	4.02	9.04
Brazil	10088	2.51	37	1.50	1.59	1.53	4.74	10.01	12.54
Canada	4493	1.12	40	1.48	2.59	1.93	5.68	3.72	4.81
China	6776	1.69	39	1.47	1.90	1.90	6.23	10.61	10.54
Colombia	4628	1.15	37	1.52	1.93	1.49	10.16	14.15	12.75
Denmark	14445	3.59	43	1.52	3.06	1.91	2.58	2.85	4.82
Ecuador	1653	0.41	37	1.58	1.80	1.88	11.68	9.07	11.74
Finland	7117	1.77	42	1.46	2.23	2.00	4.54	3.51	11.55
France	7682	1.91	40	1.52	2.45	2.01	3.23	0.79	1.28
Germany	25228	6.28	43	1.53	1.93	2.01	3.91	2.74	6.22
Greece	6173	1.54	40	1.48	2.35	2.03	5.95	4.05	16.62
Hong Kong	4207	1.05	38	1.52	1.76	2.05	3.57	3.02	4.37
Hungary	8219	2.05	40	1.50	1.79	1.95	3.93	2.59	4.28
India	4419	1.10	35	1.35	2.05	1.67	8.08	5.18	12.58
Ireland	3478	0.87	42	1.56	2.67	1.95	4.97	5.35	13.69
Israel	5522	1.37	37	1.50	2.58	1.95	3.53	3.71	4.35
Italy	5038	1.25	43	1.50	2.24	1.70	3.20	1.67	4.90
Japan	6665	1.66	43	1.50	2.65	1.85	2.24	2.25	9.68
Mexico	5479	1.36	36	1.50	2.04	1.88	7.14	2.48	3.10
Netherlands	10108	2.52	43	1.52	2.33	2.01	3.83	3.57	9.17
New Zealand	2600	0.65	42	1.55	2.38	1.97	9.12	8.12	10.92
Poland	3262	0.81	40	1.50	2.01	1.89	4.45	3.53	6.07
Portugal	1802	0.45	40	1.48	1.76	2.04	4.99	4.22	7.82
Russia	3114	0.77	40	1.59	2.53	2.14	1.16	1.57	1.35
Singapore	9396	2.34	38	1.48	2.40	2.03	4.10	3.15	4.27
Slovenia	8553	2.13	41	1.50	2.15	2.03	4.06	2.20	7.30
South Africa	8413	2.09	36	1.50	1.61	2.04	6.04	2.86	2.35
South Korea	4097	1.02	39	1.48	2.56	2.07	5.59	8.42	12.52
Spain	86582	21.55	41	1.48	2.14	1.91	2.77	3.77	7.48
Sweden	26250	6.53	42	1.49	2.00	2.05	1.44	1.98	5.56
Switzerland	6696	1.67	42	1.50	2.11	1.94	3.32	4.05	10.86
Thailand	6393	1.59	40	1.60	1.92	1.96	4.99	10.84	15.97
Turkey	4003	1.00	37	1.45	2.16	1.83	2.90	4.75	9.87
USA	16579	4.13	42	1.48	2.76	2.13	7.99	4.49	7.62
United Kingdom	59187	14.73	42	1.55	2.49	1.73	3.57	3.79	7.35
	401831	100	40	1.50	2.20	1.93	5.00	4.71	8.25

Table 19 Sample descriptive by year for the study of culture on persistence in entrepreneurship

Year	N	%N
2001	25,006	6.22
2002	54,746	13.62
2003	34,877	8.68
2004	66,188	16.47
2005	43,569	10.84
2006	75,854	18.88
2007	51,228	12.75
2008	50,363	12.53
	401,831	100

We used three dependent variables in our analysis: *individual-level entry into nascent, new and established entrepreneurship*. GEM identifies three types of entrepreneurs. These are: (1) nascent entrepreneurs (individuals who are active in the process of starting a new firm but have not yet launched one); (2) new entrepreneurs (owner-managers of new firms who have paid wages to any employees for more than 3 months but less than 42 months); and (3) established entrepreneurs (owner-managers of firms 42 months old or older). All the three dependent variables are dummy variables (1=yes) indicating that a given *individual* qualifies as either nascent or new entrepreneur in the GEM data. Our dataset shows that the average share of individuals who qualified as nascent, new or established entrepreneurs is 5.0%, 4.7% and 8.3% respectively (Table 18). The entry to entrepreneurship dummy relates to individuals and not to new entrepreneurial entities such as new ventures. This is consistent with our research question, which is about the effect of national culture on entrepreneurial behaviors *by individuals*.

Country-level predictors

Data on country-level cultural norms were obtained from the GLOBE dataset. GLOBE measures *institutional collectivism* as: "the degree to which organizational and societal institutional practices encourage and reward collective distribution of resources and collective action" (House, Javidan, Hanges, & Dorfman, 2002:2). *Uncertainty avoidance* in societal practices is measured as the degree to which individuals in a society prefer rule-based mechanisms to introduce orderliness and clearly articulated expectations, even at the cost of experimentation and innovation. *Performance orientation* measures the extent to which a

given society is perceived to encourage and reward performance improvement. GLOBE measures cultural norms with 7-point Likert scales, and cultural scores are presented as regression predicted scores that correct for response bias. So as to provide for easier interpretation of the analysis, we z-standardized the three predictors (and the other Globe measures used as controls), such that the effect on entry into the different stages may be interpreted based upon one standard deviation change in each of these predictors.

Individual-level controls

Our theoretical model of national culture as a contextual base shaping the stages in the entrepreneurial process necessitates that we first control for the two central attitudes that have been widely linked to entrepreneurial behaviours: an individual's fear of failure and the individual's perceived self-efficacy in entrepreneurial efforts. Both of these were obtained from the GEM dataset. Because GEM is a very expensive social survey, only single-item dichotomous scales are used to measure each of these items[39]. As such, the use of dichotomous scales reduces problems with translation equivalence (Ter Hofstede, Wedel, & Steenkamp, 2002). Risks of translation bias are further reduced by GEM's back-translation practice and the careful training of national teams, with each new team receiving two days of training in the beginning (Reynolds et al, 2005). All amendments to interview protocols are agreed in annual coordination meetings in which all teams participate, and the administration of the questionnaire is supervised by a 8-member research committee. These safeguards alleviate concerns regarding potential translation equivalence issues.

Perceived Self-Efficacy (1=yes) indicates whether the individual thought that (s) he possessed the knowledge, skills, and experience required to start a new business. *Fear of Failure* was captured using a dummy variable (1=yes) that measures an individual's lack of confidence in his or her ability to cope with endogenous or exogenous uncertainty associated with new business ventures, as well as the fear of anticipated consequences of such failure.

An individual's decision to become a nascent entrepreneur, as well as to move on to become a newly established or a fully established entrepreneur, may also be influenced by a number of factors other than his or her attitudes. We controlled for a number of demographic characteristics, all of which were obtained from the GEM dataset. An individual's age is an

[39] The need for simplicity is further reinforced by the fact that GEM is implemented in dozens of different countries in all continents. To minimize bias caused by cultural interpretations, only dichotomous (yes/no) scales are used

important influence on entrepreneurial ambitions, with younger individuals generally exhibiting higher ambitions than older ones. We therefore controlled for the age of the individual, as well as the squared term of age in order to capture any curvilinear effects. Since women typically exhibit more modest entrepreneurial activity than men, we controlled for gender (male=1, female=2). Both education and household income have been associated with entry into entrepreneurship (Evans & Leighton, 1989) . We controlled for education with a 5-step categorical scale toward higher levels of education (5=graduate experience) and household income with a 3-step income tier scale (3=highest income tier). Finally, we controlled for the entrepreneurs' current number of employees so as to capture idiosyncratic variation in initial conditions of the venture.

Country-level controls

We obtained the country-level controls for our analysis from IMF and EuroStat datasets. Prior GEM research suggests that a country's level of economic development significantly influences the nature and distribution of entrepreneurial activity (Stel, Carree, & Thurik, 2005). We therefore controlled for the country's GDP per capita (purchasing power parity, PPP), as well as GDP (PPP) per capita squared to capture curvilinear effects. Following established practice (Bowen & De Clercq, 2008, Dreher & Gassebner, 2007, Freytag & Thurik, 2007), we also included a dummy (1=yes) for transition economies.[40] To capture any effect of the country's economic expansion, we controlled for the change in GDP from previous to current year. As proxies of the size of domestic markets as well as economic expansion, we controlled for population size (in millions) as well as population growth during the previous year. Both indicators were computed from IMF data.

Estimation methods

Our data is grouped by country and year, thus resulting in a hierarchical and clustered dataset. This increased the possibility of 'false positives' in OLS analysis due to under-estimation of standard errors because of their non-normal distribution (Hoffman & Griffin, 2000). Since we combined individual-level observations with country-level measures of cultural norms, the data was analysed using hierarchical linear modelling methods. We

[40] The countries classified as transition economies are: Bosnia & Herzegovnia, China, Croatia, Czech Republic, Hungary, India, Kazkhstan, Latvia, Macedonia, Poland, Romania, Russia, Serbia & Montenegro, and Slovenia.

carried out our outcome regressions using random-effect logistic regression to estimate the influence of individual-level factors (level-1) and country-level factors (level-2) on an individual's probability to enter into each of the three stages of entrepreneurship.

As *entry to entrepreneurship* is a dichotomous variable, we adopted a random effects logistic regression model, wherein we assumed unobserved country-specific effects (u_i) to be randomly distributed with a mean of zero, constant variance ($u_i \sim IID\ (0, \sigma^2_u)$) and uncorrelated to the predictor covariates. We adopted the random-effect model in our analysis. The random-effect (GLS) model is intuitively similar to the OLS model, but it allows the constant term (intercept) to vary randomly across countries. . We looked at the influence of country-level predictors (societal-level cultural orientations) on entry into nascent, new and established entrepreneurship.

6.3 Results

Table 20 provides the descriptive statistics for both individual- and country-level predictor and dependent variables. Tables 21 through 26 show the correlation matrix of each of the three dependent variables with individual-level and country-level variables, respectively. Table 27 shows effects on individual-level entry into the three stages of entrepreneurship. Significant between-country variance is a precondition for multi-level analysis (Bliese, 2000, Hofmann, 1997, Hofmann e al. 2000). To check this for entry into the three stages of entrepreneurship, we performed three multi-level logistic regressions models that included no predictors. As can be seen in Models 1, 3 and 5 of Table 27, the intra-class correlation coefficient (ICC, rho[41]) indicates that 9.5%, 12% and 13.5% of the variance in the dependent variable of entry to nascent, new and established entrepreneurship respectively, resided between groups (df[42] = 1; χ^2 = 3987; $p < 0.000$ for nascent, df = 1; χ^2 = 4511; $p < 0.000$ for new and df = 1; χ^2 = 7063; $p < 0.000$ for established). This supported the application of multi-level analysis techniques over OLS.

[41] rho is the proportion of the total variance contributed by the country-level variance component
[42] df = degrees of freedom; χ^2 = chi-square

Table 20 Descriptive statistics of dependent variables, predictors and controls used in the study of culture and persistence in entrepreneurship

Individual-level Variables	N	Mean	Std. Dev.	Min	Max
Age	401831	40.87	12.50	18	64
Gender	401831	1.51	0.50	1	2
Education	401831	2.23	1.08	0	4
Household income tier	401831	1.91	0.80	1	3
Self-efficacy	401831	0.48	0.50	0	1
Fear of failure	401831	0.38	0.48	0	1
Nascent	401831	0.04	0.20	0	1
New	401831	0.04	0.20	0	1
Established	401831	0.08	0.26	0	1

Country-level Variables	N	Mean	Std. Dev.	Min	Max
Transition economy	401831	0.09	0.28	0	1
GDP Per Capita, KUSD	401831	26873.87	9524.00	1576.26	46863.37
GDP Change, %	401831	3.28	1.47	0.67	10.06
Population, Millions	401831	88.74	203.84	2.00	1321.05
Population Growth, %	401831	0.01	0.01	-0.01	0.03
Institutional Collectivism	401831	4.26	0.46	3.41	5.26
Performance Orientation	401831	4.12	0.33	3.34	5.04
Uncertainty Avoidance	401831	4.40	0.62	3.09	5.42

Table 21 Correlation matrix for the sample of nascent entrepreneurs

Individual-level Variables	1	2	3	4	5	6	7
(1) Age	1.00						
(2) Gender	0.01	1.00					
(3) Education	-0.10	-0.01	1.00				
(4) Household income tier	-0.01	-0.09	0.23	1.00			
(5) Self-efficacy	0.01	-0.16	0.11	0.11	1.00		
(6) Fear of failure	-0.01	0.07	-0.04	-0.05	-0.15	1.00	
(7) Nascent	-0.04	-0.05	0.04	0.02	0.15	-0.06	1.00

Table 22 Correlation matrix for the sample of new entrepreneurs

Individual-level Variables	1	2	3	4	5	6	7
(1) Age	1.00						
(2) Gender	0.01	1.00					
(3) Education	-0.10	-0.01	1.00				
(4) Household income tier	-0.01	-0.09	0.23	1.00			
(5) Self-efficacy	0.01	-0.16	0.11	0.11	1.00		
(6) Fear of failure	-0.01	0.07	-0.04	-0.05	-0.15	1.00	
(7) New	-0.04	-0.05	0.02	0.04	0.15	-0.06	1.00

Table 23 Correlation matrix for the sample of established entrepreneurs

Individual-level Variables	1	2	3	4	5	6	7
(1) Age	1.00						
(2) Gender	0.01	1.00					
(3) Education	-0.10	-0.01	1.00				
(4) Household income tier	-0.01	-0.09	0.23	1.00			
(5) Self-efficacy	0.01	-0.16	0.11	0.11	1.00		
(6) Fear of failure	-0.01	0.07	-0.04	-0.05	-0.15	1.00	
(7) Established	0.10	-0.09	0.01	0.09	0.20	-0.07	1.00

Table 24 Correlation matrix of control variables for the sample of nascent entrepreneurs

Country-level Variables	1	2	3	4	5	6	7	8	9
(1) Transition economy	1.00								
(2) GDP Per Capita, KUSD	-0.44	1.00							
(3) GDP Change, %	0.46	-0.43	1.00						
(4) Population, Millions	0.50	-0.39	0.53	1.00					
(5) Population Growth	-0.27	-0.01	0.26	0.03	1.00				
(6)Institutional Collectivism	-0.04	0.23	0.03	0.04	-0.27	1.00			
(7) Performance Orientation	-0.27	0.33	-0.13	0.13	0.05	0.22	1.00		
(8) Uncertainty Avoidance	-0.29	0.46	-0.37	-0.03	-0.35	0.60	0.47	1.00	
(9) Nascent	0.01	-0.03	0.02	0.03	0.01	-0.02	0.02	-0.03	1.00

Table 25 Correlation matrix of control variables for the sample of new entrepreneurs

Country-level Variables	1	2	3	4	5	6	7	8	9
(1) Transition economy	1.00								
(2) GDP Per Capita, KUSD	-0.44	1.00							
(3) GDP Change, %	0.46	-0.43	1.00						
(4) Population, Millions	0.50	-0.39	0.53	1.00					
(5) Population Growth	-0.27	-0.01	0.26	0.03	1.00				
(6)Institutional Collectivism	-0.04	0.23	0.03	0.04	-0.27	1.00			
(7) Performance Orientation	-0.27	0.33	-0.13	0.13	0.05	0.22	1.00		
(8) Uncertainty Avoidance	-0.29	0.46	-0.37	-0.03	-0.35	0.60	0.47	1.00	
(9) New	0.01	-0.06	0.06	0.05	0.03	-0.02	0.01	-0.04	1.00

Table 26 Correlation matrix of control variables for the sample of established entrepreneurs

Country-level Variables	1	2	3	4	5	6	7	8	9
(1) Transition economy	1.00								
(2) GDP Per Capita, KUSD	-0.44	1.00							
(3) GDP Change, %	0.46	-0.43	1.00						
(4) Population, Millions	0.50	-0.39	0.53	1.00					
(5) Population Growth	-0.27	-0.01	0.26	0.03	1.00				
(6)Institutional Collectivism	-0.04	0.23	0.03	0.04	-0.27	1.00			
(7) Performance Orientation	-0.27	0.33	-0.13	0.13	0.05	0.22	1.00		
(8) Uncertainty Avoidance	-0.29	0.46	-0.37	-0.03	-0.35	0.60	0.47	1.00	
(9) Established	0.00	-0.02	0.04	0.03	0.01	-0.02	-0.01	-0.03	1.00

Table 27 shows the influence of country-level predictors on the individual-level probability of entry into the three stages of entrepreneurship. Country-level predictor estimates are standardised (beta coefficients) while all others are non-standardised. Random-effect logistic regression models are reported in Models 1 through 6 of Table 27 along with estimates for the fixed part (estimates of coefficients) and random part (variance estimates) as well as model fit statistics. The models in Table 27 report the estimates from a multi-level random intercept logistic regression. The estimates shown in the table correspond to the odds ratio which are obtained by transforming the estimated logistic regression's co-efficients (β) into their corresponding exponentials ($\exp(\beta)$). The odds ratio is the ratio of the probabilities of a successful entry into entrepreneurship (corresponding to a value = 1 for our dependent variable) and an unsuccessful entry (corresponding to a value = 0 for our dependent variable).

A value of the odds ratio greater than one signifies a positive association between the predictors and dependent variable while a value less than 1 signifies a negative association.

Table 27 Effects on entry to various stages of entrepreneurship

	Nascent		New		Established	
Fixed Part Estimates	**1**	**2**	**3**	**4**	**5**	**6**
Controls						
Age		0.98***		0.98***		1.03***
		(0.00)		(0.00)		(0.00)
Age (Squared)		0.99		0.99		0.99
		(0.00)		(0.00)		(0.00)
Gender		0.79***		0.80***		0.66***
		(0.01)		(0.01)		(0.01)
Education		1.10***		1.00		0.90***
		(0.01)		(0.01)		(0.01)
Household Income Tier		0.97*		1.18***		1.47***
		(0.01)		(0.01)		(0.01)
Transition Economy		0.84		0.48***		0.52***
		(0.10)		(0.06)		(0.10)
GDP Per Capita, KUSD		1.00		1.00*		1.00
		(0.00)		(0.00)		(0.00)
GDP Per Capita (squared)		1.00***		1.00**		1.00
		(0.00)		(0.00)		(0.00)
GDP Change, %		1.01		1.15***		1.14***
		(0.02)		(0.03)		(0.04)
Population, Millions		1.00		1.00		1.00
		(0.00)		(0.00)		(0.00)
Population Growth, %		0.78		0.002		0.00+
		(4.44)		(0.17)		(0.00)
Self-efficacy		5.52***		5.53***		5.20***
		(0.13)		(0.13)		(0.08)
Fear of failure		0.64***		0.67***		0.70***
		(0.01)		(0.01)		(0.01)
Country-level Predictors						
Institutional Collectivism **(H1a, H1b, H1c)**		0.89****(H1a)*		1.04+**(H1b)**		1.21***(H1c)*
		(0.03)		(0.04)		(0.06)
Performance Orientation **(H2)**		1.16****(H2)*		1.13****(H2)*		0.91**(H2)**
		(0.04)		(0.04)		(0.05)
Uncertainty Avoidance **(H3)**		0.92***(H3)*		0.87****(H3)*		0.83****(H3)*
		(0.04)		(0.04)		(0.06)
Random Part Estimates						
Variance of Intercept	0.34 (0.03)	0.15 (0.02)	0.43 (0.04)	0.18 (0.03)	0.5 (0.04)	0.36 (0.03)
Rho	9.5	4.5	12.0	5.4	13.5	10.0
Observations		401831		401831		401831
Number of Groups	192	192	192	192	192	192
Degrees of Freedom	0	14	0	14	0	14
Log Likelihood	-S5973	-60668	-65704	-60398	-104196	-91853

Note: Columns present odds ratio instead of regression estimates. Values greater than 1 signal positive association. Values smaller than 1 signal negative association

p < 0.001***; p<0.01**; p<0.05*; p<0.1+: Standard errors in parentheses

We tested if group-level cultural norms had any influence on the probability of an individual's entry to the three stages of entrepreneurship. Model 2, 4 and 6 of Table 27 shows the influence of the three country-level predictors, namely, *institutional collectivism* (hypothesis H1a, H1b, H1c), *performance orientation* (hypothesis H2) and *uncertainty avoidance* (hypothesis H3) and on the probability of entry into nascent, new and established entrepreneurship respectively.

We observe that an increase of one standard deviation in a country's societal institutional collectivism reduced the likelihood of individual-level entry into nascent entrepreneurship by 11% (1 – 0.89) ($p < 0.1$), but increased the probability by 4% (1.04) ($p < 0.1$) and 21% (1.21) ($p < 0.5$) of entry to new and established entrepreneurship respectively. The cultural norm of performance orientation increased the likelihood of individual-level entry into nascent entrepreneurship by 16% ($p<0.001$), increased by 13% ($p < 0.01$) into new entrepreneurship. Although performance orientation was observed to decrease the probability to enter into established entrepreneurship by 9% (1 – 0.91), we did not find any statistical significance for this finding. We see that an increase of one standard deviation in a country's cultural norm of uncertainty avoidance decreases the probability of an individual-level entry into nascent entrepreneurship by 9% (1 – 0.91) ($p < 0.05$), decreases by 13% (1 – 0.87) ($p < 0.01$) into new entrepreneurship and by 17% (1 – 0.83) ($p < 0.01$) into established entrepreneurship. Combined, these findings support the country-level hypotheses H1a, H1b, H1c and hypothesis H3 and provide some support for hypothesis H2. The random component estimate in Model 2, 4 and 6 of Table 27 shows that the three country-level predictors explained 53%, 55% and 26% of the variance associated with the dependent variables of entry into nascent, new and established entrepreneurship respectively ($p < 0.000$).

Collienarity diagnostics

Finally, we also checked if any of the predictors as well as the dependent variable suffered from issues of multi co-linearity. The standard practice is to report the variance-inflation factor (VIF), the tolerance measure (1/VIF) and the R-squared (1 minus tolerance) value as measures that signals whether any variable suffers from issues of multi co-linearity. A VIF value less than 10 and hence a tolerance of greater than 0.1 marks the safe range, suggesting that variables do not suffer from multi co-linearity. Table 28 below reports the results of the tests performed to verify whether any of the variables used in this study suffered from multi

co-linearity. We observe that as per conventions, none of our variables suffer from multi collinearity.

Table 28 Collinearity diagnostics

Variable	VIF	Tolerance	R-squared
Entry into nascent entrepreneurship	1.05	0.95	0.04
Entry into new entrepreneurship	1.05	0.95	0.04
Entry into established entrepreneurship	1.09	0.91	0.08
Age	1.06	0.94	0.05
Age (squared)	1.04	0.96	0.03
Gender	1.04	0.95	0.04
Education	1.16	0.86	0.13
Household income	1.09	0.91	0.08
Transition Economy	1.05	0.94	0.05
GDP per capita (KUSD)	1.97	0.50	0.49
GDP (squared)	2.08	0.48	0.51
GDP change (%)	2.14	0.46	0.53
Population (in millions)	1.96	0.51	0.48
Population growth (%)	1.32	0.75	0.24
Self efficacy	1.18	0.84	0.15
Fear of failure	1.05	0.94	0.05
Institutional collectivism	2.48	0.40	0.59
Uncertainty avoidance	2.57	0.38	0.61
Performance orientation	1.96	0.51	0.49

6.4 Conclusions

Utilising a process based theory of entrepreneurship, our study treats entrepreneurship as a *dynamic* process that comprises of three mutually exclusive stages: *nascent, new* and *established* and shows how cultural norms influence the entrepreneurial process in dissimilar ways at these different stages. Our analysis reveals that national culture exercises important, but differential, influence on individual-level behaviours. The stage model also allows us to distinguish the entrepreneurial process into variance-inducing and resource mobilising acts. It is useful to distinguish between variation-generating and resource-mobilising aspects of entrepreneurship when trying to understand the links between culture and entrepreneurship (Tiessen 1997). By looking at the influence of cultural norms on the stages, we accommodate for the possibility that national culture could exercise non-static as well as a more lasting influence on individual-level entrepreneurial behaviors, and thus, it may influence, for example, the persistence of individuals in the entrepreneurial process.

The influence of three specific national cultural norms, namely, institutional collectivism, performance orientation and uncertainty avoidance on each of the three stages of entrepreneurship were studied, making our study the first one to entertain the cross-level effects of culture on the stages of entrepreneurial process. Our findings suggest that, the popular notion that individualistic societies are the most entrepreneurial is only half true. While we found that collectivist societies tend to inhibit variance-inducing acts such as entry (nascent), they also support risk-taking and resource-mobilising acts in subsequent stages of entrepreneurship (new and established). High performance orientation societies encourage the pursuit of entrepreneurship and associate societal rewards, such as legitimacy, status, respect, etc. We observe the positive influence of societal level performance orientation on entrepreneurship. Finally, we observe that the more there is societal level uncertainty avoidance along the entrepreneurial process, the lesser the probability of entry in subsequent stages.

Our study is not free from certain limitations. We included only three of the nine societal-level cultural constructs in our theoretical model that were proposed by House et al (2004). We focused on the cultural norms of institutional collectivism, performance orientation and uncertainty avoidance, while cultural measures of in-group collectivism, performance orientation, assertiveness, power distance, future orientation, humane orientation and gender egalitarianism could not be accommodated for in our theoretical model. Although including all these nine dimensions have been known to pose issues related to multi-collinearity, possible combinations of one or more of the five additional dimensions could be used too.

In conclusion, this study has demonstrated, using a rigorous application of multi-level analysis techniques, important and counterintuitive relationships between national cultural attributes and individual-level entrepreneurial behaviours. Our research represents only an early inquiry into this fascinating area. We hope that our study will inspire further studies of this important topic.

Chapter 7: Entrepreneurial Actions and the Transformation of Institutions

I draw inspiration from Boettke and Coyne's (2009) work who present a modified version of the four levels of institutional hierarchy originally put forth by Williamson (2000). These four levels of institutional hierarchy as well as their expected duration before they undergo transformation, is shown in Table 31 below.

Williamson (2000) suggests that at the highest level of institutional hierarchy reside informal institutions that most commonly represent culture, customs, social norms, ethics, traditions, etc. This first level of hierarchy provides the most fundamental foundations for a society's institutions. These basic social and cultural institutional foundations change very slowly over time, with adaptation periods of decades, even centuries (Williamson, 2000). Although, informal institutions are deeply embedded as a context and is slow to changes, prevailing entrepreneurial activity may create its own feedback cycle, slowly veering a society to a more entrepreneurial culture (Verheul et al, 2001). Countries with high prevalence rates of entrepreneurial activities and successful new ventures offer role models that motivate other individuals to emulate them to become entrepreneurs themselves. Individuals start conforming to "If he/she can do it, I can" (Veciana, 1999). Verheul et al, (2001: 64) remark: "A 'demonstration' principle is at work: the more entrepreneurs, the higher the exposure of people to entrepreneurship, the higher the acceptance of entrepreneurship as an alternative to wage-employment and higher the likelihood of other people becoming self-employed". This demonstration principle establishes the legitimacy of entrepreneurship as an alternative career choice. Individuals' motivation for maximizing legitimacy and social utility such as status and respect begins to get leverage from the social culture of entrepreneurship that develops slowly but surely over time.

Further, the demonstration principle may also form the basis for explanations that aim to elucidate informal institutional context as one of the regulators of individuals' entrepreneurial motivations behind maximizing ones economic utility. Economic returns observed for successful entrepreneurship in one's society may encourage risk-taking entrepreneurial activities hoping to make greater returns for the risk taken as compared to regular wage-employment. Societies often associate high status with entrepreneurship and treat entrepreneurs with high respect based upon the economic returns that entrepreneurs might have accumulated by taking risks involved in entrepreneurship. The sense of being respected and of being held in high esteem owing partially to their economic success may act as a

motivational factor for maximizing economic utility. Hence, the possibility that informal institutions influence individuals' motivation for maximizing social and economic utility cannot be ruled out. It must also be emphasised that the basis of my argument for explaining such influences relies heavily on entrepreneurial feedback mechanisms. Such mechanisms need decades; even centuries (Williamson, 2001) to take full effects, such that those effects are not immediate and are weak. If the entrepreneurial feedback mechanism could be sustained over such prolonged periods, then their influence thereafter would be immediate and stronger. We also observe in Table 31 that formal institutions too require years or even decades for them to begin transforming. The influence of the entrepreneurial actions of "institutional entrepreneurs" would slowly bring about changes in the structures of societal-level formal institutions. These changes would be brought about partly due to positive entrepreneurial feedback mechanism and partly by an entrepreneur's repeated pursuit to affect institutions such that their actions force changes in the incentive structures. Thus, entrepreneurial actions could be thought as something that sustains itself owing to its capacity to bring about changes in the institutional structures.

Table 29 Williamson's four-level hierarchy of institutions and time to change

Institutional level of analysis	Examples	Expected duration of transformation processes	Strength of moderation effect of institutions on relation between various motivations and entrepreneurial behaviors
Informal Environment	Informal institutions, Customs, Traditions	Extremely long terms (decades, centuries)	psychological (strong) > (social = economic)(weak)
Formal Environment	Formal rules of the game, especially regarding property	Very long term (years, decades)	economic (strong) > (social = psychological)(weak)
Governance	How the game is played, especially regarding contract	Long term (months, years)	Not studied in this thesis
Resource allocation and employment	Prices and quantities	Short term (days, weeks, months)	Not studied in this thesis

Source: Table 4 as it appears in the book "Institutions and Entrepreneurship" by Boettke and Coyne (2009): page 353

Chapter 8: Discussion and Contributions

Central to this thesis is the recognition that entrepreneurship is fundamentally an individual-level phenomenon that entails the pursuit of opportunity by individuals or teams of individuals (Shane and Venkataraman, 2000; Shane, 2000; Venkataraman, 1997). However, individuals with foresight are aware of the consequences of their entrepreneurial actions - both economic and social. These consequences are also moderated by the context in which the focal individual performs those actions. For example, the protection of intellectual property rights might affect the distribution of returns to opportunity pursuit by individuals (e.g. Autio & Acs, 2010; Henrekson & Douhan, 2009) or a country's culture might affect the individual's social standing in the event of entrepreneurial entry, success, or failure (e.g. Wagner & Sternberg, 2004). As such, an individual's context may influence the economic and social trade-offs associated with alternative courses of action, such as the choice between self-employment and employed work. The research question thus addressed in the thesis was: *how do context influence an individual's entrepreneurial actions?*

The answer to this question was sought by extending the theoretical model presented by McMullen and Shepherd (2006) and acknowledging that *any* opportunity that exists in an individual's context (third person opportunity) may translate differently to an opportunity recognised and acted upon by the individual (first person opportunity) depending upon *not only* the individual's personal assessment of his or her *feasibility* and *desirability* but *also* upon the context in which the evaluation of first person opportunity is performed. Put differently, individuals exhibiting similar attitudes will behave differently, depending on the cultural context in which they are embedded. Conversely, a change in the cultural context may induce a change in how individuals with certain attributes behave. To consolidate this foregoing proposition, the thesis undertook three empirical studies that considered the cross-level effects of context by combining the influences of individual-level as well as contextual-level factors on entrepreneurial actions by individuals.

The first study examined the influence of prevailing norms in an individual's social reference group on individual-level entrepreneurial growth aspirations. It also looked into how negative attitudes in reference groups moderate the effect of an individual's exit experience from previous entrepreneurial activities on his or her growth aspirations. The findings suggest that reference-group norms were significant predictors of growth aspirations. In yet another intriguing finding, it was observed that group norms that were punishing

towards entrepreneurial failures moderated *positively* the effect of exit experience on growth aspirations. This observation has insight in that it highlights the fact that an individual's personal assessment of the feasibility of entrepreneurial actions drawn from his or her accumulated experiences from previous entrepreneurial activities would exercise a stronger influence on the propensity to engage in such actions than that of the negative attitudes prevailing in his or her social reference-group. This study contributes to the process literature on entrepreneurship (Aldrich 1999, Santarelli and Vivarelli 2007, Van de Ven and Engleman 2004) in two distinct ways. First, this study integrates individual-psychological and group-level sociological theories of entrepreneurship in a model at different levels of analysis. Second, the empirical application of our model shows how group-level social norms are contingent on individual enactment of experience, in that individuals with exit experience are less strongly influenced by negative social norms such as fear of failure. Although only exit experience from previous ventures was modeled ignoring other types of potentially relevant experience, this focus is believed to be an essential finding, since entrepreneurs' search for new variations and combinations is often a process of trial-and-error (Romanelli 1989). On a general level, the findings thus highlight how previous 'trial' experience enhances variation in subsequent re-entry and growth behaviors, and also, how that prior background is intricately related to the social context surrounding it along with the relevant exit that occurred.

In studies two and three, national-level cultural orientations were considered to represent an individual's context. While study two examined the influence of three pertinent societal-level cultural orientations – *institutional collectivism, uncertainty avoidance* and *performance orientation* – on an individual's propensity to enter into entrepreneurship as well on growth aspirations, study three examined the influence of the same three cultural factors in predicting an individual's persistence in entrepreneurship.

Based upon the findings of these two studies, it was observed that *institutional collectivism* exercised an initially negative, but thereafter a monotonously positive influence on the entrepreneurial process, suggesting that the popular notion that individualistic societies are the most entrepreneurial is only half true. While on one hand individualistic societies foster entry into entrepreneurship, on the other hand collectivist societies support risk-taking by facilitating societal risk-sharing and resource-mobilising acts commonly entailed during entrepreneurial growth phase and considered vital while contemplating persistence into entrepreneurship. These studies thus suggest that if societies go overboard with

individualism, they may fail to create the societal risk-sharing mechanisms that would encourage entrepreneurs to 'take the plunge' and pursue organisational growth or for that matter persist with the pursuit of entrepreneurial action. Our findings thus support Tiessen's (1997) proposition that it is useful to distinguish between variance-inducing and resource-mobilising aspects of entrepreneurship when analysing the effect of individualism-collectivism. These two studies contribute to a more nuanced understanding of the effect of institutional collectivism on entrepreneurship and conclude that collectivism is not always bad for entrepreneurship and that individualism is not always good for entrepreneurship.

Societal level *uncertainty avoidance* was observed to be negatively associated with entry, growth aspirations as well as persistence in entrepreneurship since all these manifestations of entrepreneurial action represent departure from established norms and a venture into a realm where expectations are not necessarily clearly laid out and few procedures exist to bring stability to social interactions. Of special notice was the observation that the more there is societal-level uncertainty avoidance, the lesser will be the probability to seek growth and to persist with the entrepreneurial process. Societal level *performance orientation* was observed to exercise a positive influence on entry, but inhibited persistence. The findings from the three empirical studies have been comprehensively listed in Table 30 below.

Table 30 Findings from the three empirical studies

Study	Findings
1	Group norms significant predictors of growth aspirations Groups' fear of failure moderates positively the effect of exit experience on growth aspirations
2	Individualism promotes entry while collectivism promotes growth aspirations UA suppresses entry PO promotes entry
3	Individualism encourages entry but Collectivism promotes persistence UA suppresses persistence PO promotes entry but inhibits persistence

Combined, the three empirical studies undertaken in the thesis make significant generic contributions to the extant entrepreneurship literature. First, this is one of the very few studies that have *simultaneously* considered the cross-level effects of context by combining the influences of individual-level and contextual-level predictors on individual-level entrepreneurial actions. Second, the thesis provides a nuanced understanding of the mechanisms through which an individual's various context exercise cross-level "direct" as well as "moderating" effects on entrepreneurial actions. Third, the thesis has provided a timely response to the repeated calls for the need for suitable multi-level methodological techniques to estimate combined effects of individual-level and contextual-level factors on individual-level entrepreneurial actions. Finally, the thesis provides evidence of the effect-size of the influence of context: both absolute as well as relative to those of individual-level predictors, thus allowing us to pronounce the proportions of influence contributed by the individual and context on entrepreneurial actions. What emerged from this thesis is the fact that entrepreneurial actions cannot be understood without considering the context in which an individual performs those actions, although, after comparing the estimated effect sizes, the individual remained the stronger predictor of his actions.

In my concluding remark, I acknowledge that entrepreneurship is a socially driven phenomenon wherein individuals consider their entrepreneurial actions in relation to their social environment. Such behaviors get regulated as and when the individual interacts with his or her social context. By studying the effect of context – either an individual's social-reference group or national culture - on entrepreneurial actions, this thesis has responded to the observation that entrepreneurial actions cannot be understood without due attention to the context in which they are performed. To this end Shane and Venkataraman (2000: 218) remark "[It is...] improbable that entrepreneurship can be explained solely by reference to a characteristic of certain people independent of the situations in which they find themselves". The importance of considering an entrepreneur's context in explicating his entrepreneurial actions is paramount. This PhD thesis did not treat the entrepreneur in isolation with his environment rather considered the regulatory influence of his context on the pursuit of his entrepreneurial actions.

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