Western Graduate&PostdoctoralStudies

Western University
Scholarship@Western

Electronic Thesis and Dissertation Repository

6-21-2013 12:00 AM

New Venture Creation Mode: Differences Between Nascent Intrapreneurs and Nascent Entrepreneurs

Matthias A. Tietz
The University of Western Ontario

Supervisor
Dr. Simon C. Parker
The University of Western Ontario

Graduate Program in Business
A thesis submitted in partial fulfillment of the requirements for the degree in Doctor of Philosophy
© Matthias A. Tietz 2013

Follow this and additional works at: https://ir.lib.uwo.ca/etd

 Part of the Entrepreneurial and Small Business Operations Commons

Recommended Citation

Tietz, Matthias A., "New Venture Creation Mode: Differences Between Nascent Intrapreneurs and Nascent Entrepreneurs" (2013). *Electronic Thesis and Dissertation Repository*. 1320.
https://ir.lib.uwo.ca/etd/1320

This Dissertation/Thesis is brought to you for free and open access by Scholarship@Western. It has been accepted for inclusion in Electronic Thesis and Dissertation Repository by an authorized administrator of Scholarship@Western. For more information, please contact wlswadmin@uwo.ca.

NEW VENTURE CREATION MODE: DIFFERENCES BETWEEN NASCENT INTRAPRENEURS AND NASCENT ENTREPRENEURS

(Thesis format: Integrated Article)

by

Matthias Alfred Tietz

Graduate Program in Business Administration

A thesis submitted in partial fulfillment
of the requirements for the degree of
Doctor of Philosophy

The School of Graduate and Postdoctoral Studies
Western University
London, Ontario, Canada

© Matthias A. Tietz 2013

ABSTRACT

The process of new venture creation continues to fascinate practitioners and academics alike for its widespread and fundamental impact on all market economies. New ventures contribute to the economy through the jobs they create and by enhancing productivity resulting in increased economic prosperity and growth. Such important contributions underline the considerable merit attributed to understanding the determinants and consequences of new venture creation. There is little disagreement that personal, organizational, opportunity, cultural, institutional factors, etc. influence the creation of new ventures. The challenge remains to determine which factors have what kind of influence on new venture creation.

In this thesis I propose a differentiating analysis of the venturing mode of business starters – as nascent entrepreneurs (NEs) or as nascent intrapreneurs (NIs, or corporate entrepreneurs). NEs try to create a new venture by themselves. NIs attempt the same for their employer. In this thesis I offer three complementary essays that jointly address the question: *How do nascent intrapreneurs and nascent entrepreneurs differ from each other?*

In my first essay I develop the Individual-Opportunity-Organization Nexus. I explore individual, opportunity, and organizational influences on the choice of new venture creation mode. My research propositions employ variables traditionally used to inform the general start-up decision, to inform the venture mode choice.

Essay two analyzes the impact of start-up motivations on the venture mode choice. We develop a two-stage theoretical framework based on individual motivations. We employ a bi-variate probit model with sample selection, which shows that some start-up motivations affect the self-selection into nascent venturing in general and others affect the organizational selection mechanisms of intrapreneurs.

In essay three I compare the start-up and abandonment rates of NIs and NEs. Using series of multinomial logit models, I demonstrate that NIs, compared to NEs, have a reduced likelihood of quitting in the first 45 months of developing their nascent venture. There was no evidence of one group being faster in bringing their nascent venture to market.

In combination, the three essays explain why and how nascent intrapreneurs and nascent entrepreneurs differ from each other. Future research needs to distinguish between these two groups.

Keywords

New Venture Creation Mode, Nascent Venturing, Motivation, Start-Up and Abandonment

CO-AUTHORSHIP STATEMENT

I hereby declare that this thesis incorporates some material that is a result of joint research. Essay 2 was co-authored with Dr. Simon Parker. As the first author, I took the lead on this essay including: formulating research questions, conducting the literature review, developing the research design, analyzing and interpreting data, and preparing the first complete draft of the manuscript. Dr. Parker contributed as an adviser throughout the research process and by editing, refining, and revising the complete drafts. With the above exceptions, I certify that this dissertation and the research to which it refers, is fully a product of my own work.

ACKNOWLEDGEMENTS

Throughout the process of writing this dissertation, I was fortunate to receive the support of many people. Without their help, this project would not have been possible.

Before anyone else, I would like to thank my thesis supervisor, Dr. Simon Parker, for coaching, challenging, and encouraging me throughout my studies at Ivey and in particular throughout my thesis project. Without your gift to make complex theoretical and empirical relationships understandable to me, I would still struggle to comprehend the vast majority of them. Simon, I thank you for believing in my abilities, for developing my skills regarding empirical methods, writing, and argumentation with great patience. You were there for me since my first day of the PhD program, gave me my first teaching assistant position, and later supported me during my academic job search. I am deeply thankful for your guidance and the opportunity to learn from you. I hope you will continue to allow me to win every other tennis match.

Over the course of this thesis project, I also grew increasingly indebted to the members of my thesis supervisory, proposal, and examination committees: Dr. Brian Anderson, Dr. Stewart Thornhill, Dr. Eric Morse, Dr. Christopher Lee, and Dr. Robert Garrett. The feedback and support I received from you helped me to see the challenges and merits of my work. Your contributions shaped the final product. In particular, I would like to recognize the untiring support of Dr. Brian Anderson who not only taught me the joys of drinking coffee, but who, with an exceptional eye for theoretical clarity, has challenged me to continually improve my writing and argumentation skills. I continue to learn, but read on to see how far I have come. I am very thankful, Brian.

I have been lucky to find support among the entire Ivey community of faculty and staff. I thank Anna Potrawiak and Linda Dittmer-Pino, Meagan Seale, Dr. Debbie Compeau, and Dr. June Cotte for their support from the PhD office. Sarah Buck made interactions with the Ivey's Pierre L. Morrissette Institute of Entrepreneurship a joy. Pierre L. Morrissette himself graciously supported my endeavors financially and showed me by example the values of philanthropy.

Near the core of my journey are my friends and fellow students in the Ivey PhD community. For their support during tough times, their open ear for my troubles, their encouraging smiles, some sweet baked goods, and of course all the scholarly discussions, I particularly thank Karin Schnarr, Matthew Wong, Majid Eghbali-Zarch, Pouya Seifzadeh, Yves Plourde, Bassam Farah, Rida Elias, Mike Sartor, Liliana Lopez Jimenez, Ryan Raffety and the many other unsung heroes of our basement community. I hope to stay in touch with all of you.

My friends outside the PhD program helped me to stay healthy and happy. I am very grateful for the many times I could try to copy the rock climbing skills of my friend Markus Richter, or sing along to German song's in my friend Dina's car. My friend Melissa contributed to the final thesis with a keen editor's eye. Outside of the London community, my friends from my childhood, studies, and international travels, Robert Krups, Philipp Maier, Hans Vollbrecht, Silke Schutzbach, Vasili Uspensky, Luis Blanco, Mary Jones, Michela Luzzi, and Andreas Brenner provided their support via Skype, personal visits, and on the phone. It still amazes me how strongly I feel your presence in my life. The happiness your friendship causes transcends any geographical distance. I wish for our deep friendships to endure. They make me one lucky man.

I feel privileged to acknowledge the joy of being part of the Tietz and Schumacher families. Not many people are as lucky as I am to have such a network of support to fall into whenever needed. I took much motivation from our regular weekend phone conversations. The few times I saw you in person during these 46 months were energizing and reassuring. Whenever I spent time with my dearest cousins, aunts, and uncles, you lifted me up. Tim and Jan Anton kept my feet on the ground and my heart in the heavens. Thank you, you are great! In particular, I am grateful to my mother Bärbel Tietz, my father Erich Tietz, and my brother Christian Tietz for standing by me anytime and offering their support, advice, and love so richly and warmly as only they can.

But if one person shared my hopes, fears, and tears, it is my beloved Susan. Your consideration, understanding, and laughs carried me through this process. There were times when you had to set me straight and when we argued until 3.30am. That is part of the journey. I am so incredibly proud that despite what you endured with me, you chose to pursue your PhD studies as well! I can only dream of ever being as helpful and supportive as you are. There is no way I would have been able to do this without you! Thank you so much. I am truly blessed to share my life with you and look forward to many happy years to come. I will be at your side! I love you!

A final note of acknowledgement goes to my grandpa, Opa Gerd, who showed us the strengths of the loving bounds of our families in early 2010. I love you and continue to miss you always. Thank you for instilling in me not only with the values of life-long learning, the endurance needed to walk around an entire city, but also for showing me how to “zoepp Spekulatius”. Although you were never a man of many words there are some I hope you smile down at me: “Wir sind stolz auf dich, Junge.”

TABLE OF CONTENTS

ABSTRACT ii

CO-AUTHORSHIP STATEMENT iv

ACKNOWLEDGEMENTS v

TABLE OF CONTENTS viii

LIST OF TABLES, FIGURES, & EQUATIONS xi

Chapter 1 : Introduction 1

What motivates my research? 1

Choice of Three-Essay Format 6

Contribution to Literature 9

Thesis Outline 15

References 17

Chapter 2 : Starting inside or outside of corporate Walls? Multiple Perspectives on the Choice of New Venture Creation Mode 21

Introduction 21

Theoretical Framework: Multiple Perspectives on the Venturing Mode 25

Individual Characteristics 29

Opportunity Characteristics 36

Organizational Characteristics 42

Interactive Characteristics 45

Discussion 48

Conclusion 53

References 55

Chapter 3 : Intrapreneurs' Motivation to Start New Ventures 63

Introduction 63

Theoretical Development 68
Core Individual Motivations 68
Occupational Choice Theories 72
Human Resource Management Selection Theories 74
Framework and Hypotheses 76
Methods 85
Data and Sample 85
Measures 87
Empirical Model 93
Results 96
Discussion 102
References 109
Chapter 4 : Make it or Break it: Start-Up and Abandonment Rates of Nascent Intrapreneurs compared to Nascent Entrepreneurs over time 118
Introduction 118
What happens to nascent entrepreneurs over time? 123
Hypothesis Development 126
Initial Resource Endowments 126
Imprinting Effects 128
Embeddedness 130
Switching Costs 135
Legitimacy Concerns 136
Less stifling bureaucracy 140
Data and Measures 141
Dependent Variable: Start-up, Abandonment, or Still Trying 143
Independent Variables 145

Control Variables 146
Methodology 149
Results 150
Implications and Conclusions 163
References 171
Chapter 5 : General Conclusions 180
Contributions 183
Theoretical Contributions 183
Practical Contributions 186
Limitations 188
Future Research 190
References 193
Curriculum Vitae 196

LIST OF TABLES, FIGURES, & EQUATIONS

Table 1 Sample Overview – Essay 2 90

Table 2 Descriptive Statistics – Essay 2 91

Table 3 Pearson Correlations - Essay 2 94

Table 4 Results of Bivariate Probit Model with Sample Selection - Essay 2..... 98

Table 5 Robustness Check - Probit Model - NIs and non-NVs – Essay 2..... 101

Table 6 Overview of Studies on Self-reported outcome achievement – Essay 3 123

Table 7 Descriptive Statistics of Outcome Differences for NIs and NEs - Essay 3 151

Table 8 Results of Chi Square test of Outcome Difference over time – Essay 3 152

Table 9 Results of the Multinomial Logit Model - Essay 3..... 154

Table 10 Results of Competing Risk Regression on Nascent Venture Abandonment - Essay 3 160

Figure 1 Influences and Consequences of Venturing Mode - Layout of the three essays 16

Figure 2 Research Model: Individual-Opportunity-Organization Nexus - Essay 1 25

Figure 3 Results of Chi Square tests of Outcome Differences over time - Essay 3 153

Figure 4 Comparison of NIs' and NEs' Start-Up Rates 9 - 27 months - Essay 3..... 157

Figure 5 Competing-risks regression on the likelihood of abandonment..... 162

Equation 1 Bivariate Probit Model with Covariance Structure - Essay 2..... 93

Chapter 1 : Introduction

A nascent intrapreneur (NI) (or nascent corporate entrepreneur) is an individual in the process of setting up a new venture for his or her employer (Pinchot, 1985). A nascent entrepreneur (NE) is also trying to start a new venture, but does so independently outside of the borders of an existing organization. Both NIs and NEs belong to the general group of nascent venturers (NVs). The qualifier "nascent" refers to the fact that their venturing efforts are works in progress (Reynolds & Miller, 1992) and the outcome of the venturing activity is uncertain. This thesis focuses on this early stage where NIs and NEs are shaping their ideas into new ventures. The thesis uses the term "venture mode" to differentiate the two ways by which NVs can establish their new venture, either independently outside the borders of an existing organization as in the case of NEs, or dependently within the organization as in the case of NIs (Antoncic & Hisrich, 2001; Burgelman, 1983).

This introductory chapter outlines my research motivation, presents the three guiding research questions, and explains the reasoning for the three-essay approach. It then outlines the contributions of the thesis. The Chapter concludes with an outline of the thesis.

What motivates my research?

Some individuals try to start a business on their own; others try starting a new venture together with their employer. Researchers have studied the characteristics of NEs

(Reynolds, 1997); why NEs try to start new businesses (Alänge & Scheinberg, 1988; Scheinberg & MacMillan, 1988); how their motivations differ from those of regular employees (Carter, Gartner, Shaver, & Gatewood, 2003); and how important NEs are for the economy (Acs & Armington, 2004; van Praag & Versloot, 2007). However, research also shows that more than 20% of new ventures begin to take shape within corporate boundaries (Parker, 2011) and that these NI ventures contribute to corporate performance (Antoncic & Hisrich, 2001; Hornsby, Kuratko, & Zahra, 2002), innovation, and corporate renewal (Zahra & Covin, 1995). Translated into economic value and jobs created, NIs are an important group of nascent venturers (Reynolds & Curtin, 2011). Yet we know little about how NIs and NEs compare in their nascent start-up efforts.

Research on corporate entrepreneurship (CE) has focused on intrapreneurs from the perspective of the established organization. CE research predominantly addresses the questions of how to create, maintain and develop entrepreneurial characteristics within well-established companies (Kuratko, Covin, & Garrett, 2009; Kuratko, Montagno, & Hornsby, 1990; Stopford & Baden-Fuller, 1994). Perhaps due to strategy scholars' influence, CE tends to focus on firm level analysis. Moreover, CE research concentrates on organizational outcomes. For example, some CE research centers on company objectives for improving innovation and other performance variables inside the corporation, mostly via changes in the entrepreneurial orientation of the firm (Covin & Slevin, 1991; Lumpkin & Dess, 1996). As most of this research is located at the organizational, or firm level, the individual level, where the NI plays the principal role, has received much less attention. This thesis identifies a gap in research relating to individual level nascent intrapreneurship.

The individual-level research available predominately concerns NEs. Scholars have attempted to better understand entrepreneurs in terms of their characteristics (see Gartner, 1988 for a critical overview); their networks (Larson & Starr, 1993; Smith & Lohrke, 2008); their motivation (Stewart & Roth, 2007); and their cognitions (Mitchell et al., 2002). Such contributions comprise the traditional mainstream entrepreneurship research but address only the NE side of the venturing mode construct. Studies in this literature also compare business starters (sometimes entrepreneurs and intrapreneurs) with the general population (Johnson, 1990; Stewart & Roth, 2007). These studies presume that no meaningful differences exist between NIs and NEs.

This thesis suggests otherwise. It extends the Individual-Opportunity Nexus (Shane, 2003) to argue that unique contextual factors meaningfully influence the individual venturing decision. In particular, differences in the organizational context between NIs and NEs influence how individuals establish a new venture. Due to these contextual differences, there may be a number of differences between NIs and NEs. This thesis sets out to explore the differences between NIs and NEs in three separate, yet connected essays.

The purpose of the first essay is to include contextual influences from the organizational level on the venture mode choice. I develop a theoretical model, which explains how individual, opportunity, and organizational characteristics influence the venture mode choice. The model builds on the Individual-Opportunity Nexus (Shane, 2003). The Individual-Opportunity Nexus (ION) explains entrepreneurial activity in general as occurring at the intersection of individual and opportunity characteristics. The ION does not include the contextual influence of organizational characteristics, nor does

it elaborate on the different modes of venture creation (NI or NE). The thesis' first essay therefore extends the ION model in two ways: (1) by including the organizational perspective as an influencing factor, and (2) by including the venturing mode as a key characteristic of the start-up decision.

Essay two tests part of the conceptual model developed in essay one. In essay two I analyze the impact of various individual motivations on the selection of individuals into intrapreneurship and entrepreneurship. Essay two builds testable hypotheses from one proposition of the conceptual model. Specifically, the essay analyzes how intrinsic and extrinsic motivation in form of financial, recognition, independence, and role model motivation influence the decision to start a new venture and the venture mode choice. The essay also builds on the theoretical addition of organizational influencers to the model in essay one. In essay two, I include organizational selection mechanisms to determine whether a nascent venturer explores a new idea as a NI or a NE. The essay demonstrates that the organization, through selection mechanisms for NIs, influences the venturing mode decision at the same time that individual venturing motivations play a role.

Essay three explores the consequences of integrating contextual influences on the venture mode choice. This essay investigates differences in the start-up and abandonment rates of NIs and NEs. Several scholars have shown that the new venture creation process is random and unstructured (Davidsson & Gordon, 2010; Liao, Welsch, & Tan, 2005). Some nascent venturing efforts reach the market within months and others take several years to develop (Reynolds & Miller, 1992). This gap in the understanding of the time it takes nascent ventures to reach the market or to be abandoned serves as initial motivation

to investigate differences between NIs and NEs. Together the three essays attempt to answer the following three research questions:

Essay 1: How do individual, opportunity, and organizational characteristics influence the venture mode choice?

Essay 2: How do NIs and NEs differ in their start-up motivation?

Essay 3: How do NIs and NEs differ in their start-up and abandonment rates of nascent venturing activities?

Analysis of the venturing process at the individual level is timely and important for another reason. To date, research has emphasized the outcome of the venturing process. Prior research focuses on innovation or performance, particularly within companies (Antoncic & Hisrich, 2004; Baron & Tang, 2011). While these factors are relevant, in order to comprehend the process of new venture creation it is necessary to examine its beginnings on the individual NI and NE level. Individual NIs and NEs attempt to develop their nascent ventures from the nascent stage to the startup stage. The idiosyncrasies of NIs and NEs within the contextual framework of organizations and opportunities inform and shape this process.

Finally, Phan, Wright, and Ucbasaran (2009) describe a disconnect between process studies and structural studies in entrepreneurship. Process studies analyze the

dynamic of a relationship over time. Structural studies offer a more static perspective of the context within which processes take place. These studies are complementary because a structural study can supply the context for a process study. This thesis aims to explore how to exploit these complementarities between structural studies and process studies in the three-essay format.

Choice of Three-Essay Format

Low and MacMillan discuss three elements that are indispensable to our understanding of entrepreneurship today: process, context, and outcomes (Low & MacMillan, 1988). They particularly encouraged "theory driven research that is contextual and process oriented" (p. 139). As the field of entrepreneurship progressed, the theoretical emphasis shifted from a focus on entrepreneurs as decontextualized individuals (Gartner, 1988), toward their behaviors in the venture creation process. We have also witnessed partial integration of contextual factors (e.g. industry environment, geographic location, policy standards, etc.) into the entrepreneurial process (Aldrich & Martinez, 2001). Although we increasingly understand the processes, contexts, and outcomes of new venture creation, there is still much to learn from purposefully combining the structure or context with process and outcome perspectives (Dess, Lumpkin, & McGee, 1999; Phan et al., 2009). The aforementioned is the goal of this thesis through the three studies of which it consists.

The essays comprising the thesis focus on (1) theoretical differences, (2) motivation, and (3) differences in start-up and abandonment rates. The thesis' three-

essay approach is helpful as a format for four reasons: First, it is comprehensive. Second, it follows a logical sequence. Third, it tracks individuals over time. Fourth, it includes multiple levels of analysis.

First, regarding comprehensiveness, this set of three studies allows for a comprehensive understanding of how differences between NIs and NEs materialize over time. Both NIs and NEs engage in the process of venture founding (Davidsson, 2006; Gartner, 1988). This process has been conceptualized as different stages (Katz & Gartner, 1988). However, the distinction between these stages is often unclear, partly because start-up efforts seldom follow a linear approach of strictly sequential activities (Liao et al., 2005). Empirical findings to date suggest that under scrutiny, every start-up effort appears unique as it unfolds over time. It is therefore difficult to discern whether NIs and NEs differ from each another in this respect. The three topics of this thesis – (1) theoretical differences, (2) motivation, and (3) start-up and abandonment rates – provide insight from three different, general stages of the nascent venture founding process: beginning, middle and end. This provides a more comprehensive overview of how NIs and NEs might differ.

Second, the three essays follow a logical sequence. The thesis proposes an investigation into how individual preferences inform decisions made at early stages, which then influence decisions made at later stages. The thesis starts in essay one by theorizing why NIs and NEs might be different, for example in their motivation. The thesis then investigates motivational differences between NIs and NEs in the second essay. The analysis in essay two is also the thesis' first empirical contribution. The motivational differences between NIs and NEs also lead to the structural component of

the venturing context – the venture mode choice: NI or NE. Essay three then uses the outcome of essay two to analyze how these structural differences might manifest in different venturing outcomes (start-up or abandonment) over time. Essay three contributes the process study. The three essays build logically on one another.

Third, the two empirical essays that test parts of the conceptual model allow the research presented to track the individuals behind each venture over time. The ability to follow the individual NI or NE is important for two reasons. Tracking highlights that the initial differences from individual, opportunity, and organizational levels affect the venturing mode choice. Tracking also shows that the venturing mode choice influences start-up and abandonment rates. In order to demonstrate the two aforementioned benefits of tracking individual NIs and NEs it is necessary to track the same people. The three-essay approach aids in this goal as the two empirical essays share the same data and sample. The database used for both empirical studies is the Panel Study of Entrepreneurial Dynamics (PSED-I and PSED-II). The PSED is a longitudinal, founder-dedicated database. The PSED provides a consistent measurement basis for all of the variables used in both empirical essays. Specifically, the constructs, definitions, and measurements relating to NIs and NEs are the same. The two empirical essays also share control variables. The use of the same data from the same database allows identical operationalization of NIs and NEs in both studies. The NI and NE sample frame is the same. In other words, the thesis studies how individuals' motivation influences their venturing mode choice and how their venturing mode choices manifest in different start-up and abandonment rates. While under other circumstances it might be favorable to have an additional sample to increase generalizability and robustness of the analyses, the

proposed method of using one large longitudinal data set has the advantage of comparing the same two groups twice. Another advantage of using the same data set is that the research design then allows for the investigation of the above-mentioned chronological and logical connections in a controlled environment, uninfluenced by changes in time, place, environmental conditions, etc. This comparability and applicability of the findings in one study for the subsequent one is a major strength of my thesis.

Fourth, the conceptual components of the essays address the topic of new venture creation mode from multiple levels of analysis. While the data and focus of this thesis are at the individual level, the thesis' conceptual analysis is broader. The conceptual analysis in essay one examines individual, opportunity, and organizational influences from the multilevel perspective of the individual, venture, and organization. This approximates reality much better than an analysis from one single level. This is because the multilevel perspective addresses the venturing context and venture mode choice in a holistic fashion. Especially in the case of NIs, the individual-, venture-, and organizational level all inform the venture mode choice. While the interactions between individual, opportunity, and organizational aspects of the new venture mode choice are not a central part of this thesis, the complexity of the new venture creation process demands recognition of influences from multiple perspectives. My thesis aims to provide some groundwork for future multi-level interactive theorizing.

Contribution to Literature

This thesis attempts to make five contributions to the literature. First, essay one suggests joining the CE and the individual level nascent venturing literature on new

venture creation in an overarching Individual-Opportunity-Organization Nexus (IOON). Essay one explains the details of my model with this section providing a brief overview. The current model, entitled the Individual-Opportunity Nexus, uses individual differences to explain who recognizes and exploits an opportunity (Shane, 2003). The ION therefore analyses the start-up decision from an individual-centric perspective. The ION also explicitly recognizes that characteristics of opportunities affect whether or not an individual is likely to start any new business. The CE literature, by contrast, has mostly developed an organizational perspective on new venture creation. The CE literature's focus is therefore at the organizational level especially dealing with performance of organizations that engage in corporate venturing (Zahra, 1993; Zahra & Covin, 1995). The few CE studies framed at the individual level tend to analyze middle level managers (Burgelman, 1983; Kuratko, Ireland, Covin, & Hornsby, 2005) rather than individual intrapreneurs. The CE literature, however, recently benefitted from additional research drawing on the level of the individual (Kacperczyk, 2012; Shimizu, 2012). The newer studies support the call by Brixy and colleagues to restore the individual as a key focus of CE research (Brixy, Sternberg, & Stüber, 2012). Moreover, Sørensen's work (Sørensen, 2007; Sørensen & Fassiotto, 2011) highlights the influence of organizations on entrepreneurial behavior as an important contextual influence. The broader IOON proposed in this thesis provides the opportunity to combine all three, individual, opportunity, and organizational influences on new venture creation. Essay one uses these influences as equally important next to each other. By doing so, essay one extends the Individual-Opportunity Nexus (Shane, 2003) in two ways. The first way is by including influences from the CE literature (Kacperczyk, 2012; Zahra, Nielsen, & Bogner, 1999)

and the organizational perspective advocated by Sørensen (Sørensen, 2007; Sørensen & Fassiotto, 2011). The second way in which essay one extends the ION is by focusing on the venture mode as an important characteristic of the start-up outcome. The resulting IOON models the venture mode decision as co-created by individual, opportunity, and organizational influences. Such modeling is congruent with the ION, the CE literature, and the integrative model of Hornsby and colleagues (Hornsby, Naffziger, Kuratko, & Montagno, 1993), which ranks individual influences causally adjacent to organizational level determinants of CE.

As a second contribution, I develop theory about the nature of the selection into nascent entrepreneurship and nascent intrapreneurship. Essay two theorizes how individual and organizational selection on an individual's motivation jointly explains the venture mode decision. Individual selection in this context is the process by which a person decides which occupational choice is right for him or her – nascent venturing or regular employment (Kolvereid, 1996a, b). Individual selection is widely studied in occupational choice models in labor economics (Lazear, 2005; Parker, 2004, 2008). Organizational selection in the form of Human Resource Management (HRM) selection processes by contrast explains how an organization scrutinizes an individual's motivation when choosing amongst candidates for intrapreneurship (Davis, 1999; Gerstein & Reisman, 1983; Hamel, 1999; Hayton, 2005; Schmelter et al., 2010). Although scholars have studied both selection mechanisms, they did so separately. Studying the two selection mechanisms separately is likely to overestimate nascent intrapreneurship since NIs only develop their ventures together with their employer. Substantial selection bias blemishes the results of studies that compare two types of venturers without previously

accounting for the self-selection to participate in the general group of nascent venturers (Parker, 2011). At the time of the writing of this thesis, no study combines individual with organizational selection mechanisms on individuals' venturing motivation. Essay two develops this combination. The combination of individual and organizational selection is important because of the fact that NIs require their employer's consent. One of the thesis' contributions therefore is to model the influence of individual start-up motivations on venture mode choice as a joint and simultaneous outcome of individual occupational selection mechanisms and HRM selection mechanisms inside the organization. This contribution builds on the thesis' overarching contribution of strengthening the joint perspective of individual and organizational influences on the nascent venturing process outlined in essay one.

The third contribution occurs in essay three, which empirically examines differences in start-up and abandonment rates between NIs and NEs. The arguments presented in essay three clarify the importance of the specific context of *nascent* venturing for the empirical comparison of start-up and abandonment rates between the two venturing modes. While one established position suggests the importance of initial resource endowments of the incumbent in the context of timely business start-up (Shrader & Simon, 1997; Teng, 2007), another perspective stresses organizational hurdles to the quick development of corporate start-ups (Sørensen, 2007). It is currently unclear which of the two perspectives would better explain the start-up and abandonment rates of nascent NI ventures relative to NE ventures. The thesis' contribution in this area is to reconcile both perspectives by emphasizing specific early advantages that NIs enjoy over NEs during the particular time of nascent venturing. The essay argues that NIs' intimate

familiarity with the resources and capabilities of their employer amplifies the benefits of initial resource and capability endowments. This early familiarity prevents diseconomies of scale in the development of the nascent venture. Moreover, these benefits accrue at a point in time when their existence allows for a stabilizing and advantageous venturing trajectory thus making it less likely that NIs abandon their ventures compared to NEs. At the same time, the drawbacks of corporate bureaucracy materialize at a later stage. In the earliest months after conception of the idea, the nascent venture is still in flux. The controlling function of bureaucracy, however, occurs as the venture creates the first positions, changes, and begins to become a separate business entity. In the specific context of NE venturing, essay three develops the additional argument that concerns about legitimacy make NEs strive for faster time to market than NIs. Legitimacy concerns regarding the liabilities of newness and smallness are at the forefront of NEs' challenges. In addition to the necessity to earn an income as an independent NE, essay three argues that NEs are more likely than NIs to bring their venture to market faster. With these arguments the thesis contributes to the study of venture mode as an important boundary condition of differences between start-up and abandonment rates of nascent ventures. Clear theorizing of the influence of venture mode at a specific time, in our case the nascent start-up phase, can help address other situations of competing explanations for phenomena observed in the process of new venture creation.

The fourth contribution is that the three essays together explain how combining structure and process studies can advance the CE literature. Until now the literature focuses either on the structural dimensions of CE (Hornsby et al., 1993) or on process dimensions (Burgelman, 1983). Yet the apparent disconnect between structural and

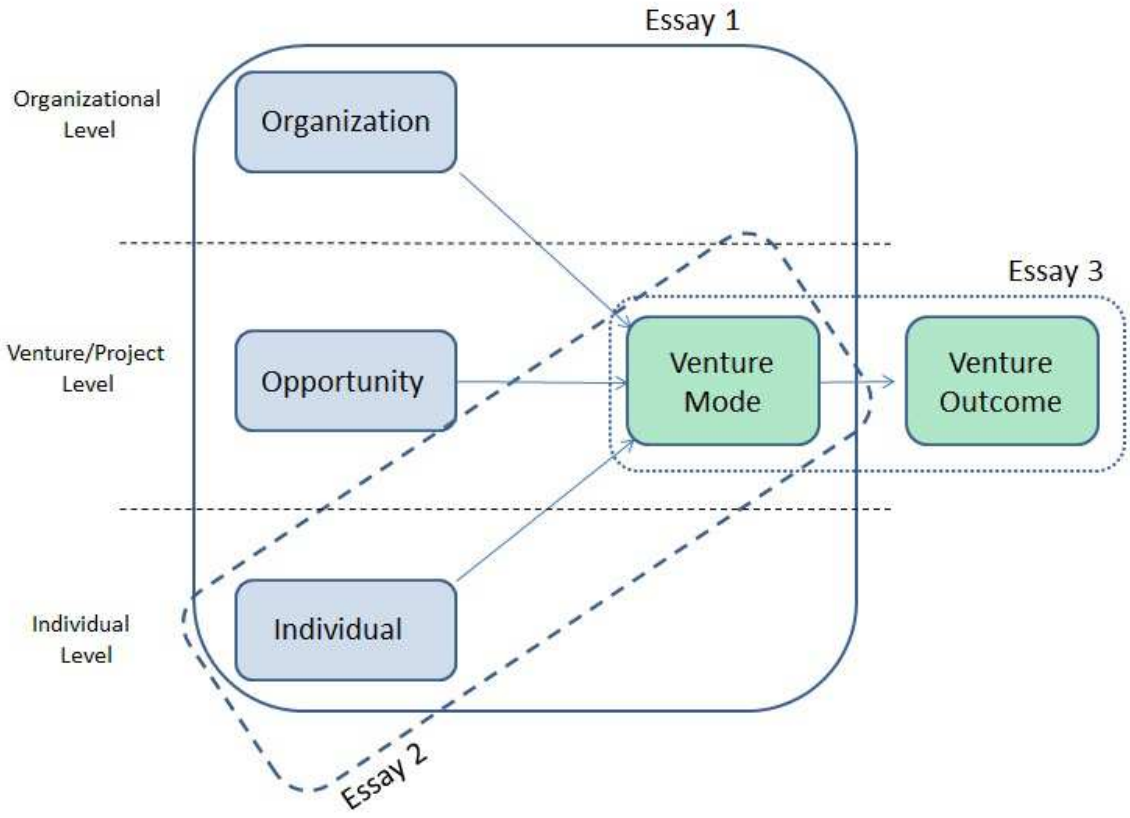
process studies (Phan et al., 2009) comes at a cost. If process studies fail to build on structural studies they can do little more than detect patterns. This thesis includes both a structure study in essay two and a process study in essay three. The thesis then uses the findings of the structure study about the venturing mode decision as input into the process study about the venturing start-up and abandonment rates. The three-essay format enables this connection. The thesis uses the findings of essay two regarding motivation as input for essay three regarding start-up and abandonment rates over time. The combination of the three essays therefore addresses the call by Dess, Lumpkin, and McGee (1999) to link CE strategy, structure, and processes. These authors emphasize that researchers "need to consider the links between these concepts, corporate entrepreneurship and performance" (pg. 97). This thesis exemplifies how to make use of the complementary nature of structure and process studies.

With respect to the last proposed contribution, my thesis' research addresses the "heterogeneity problem" that Davidsson (2006) discussed at various stages in his review of the nascent entrepreneurship literature. This problem deals with the low reliability of findings derived from the highly heterogeneous groups of business starters. Entrepreneurs and their activities are extremely diverse. What is true in one context and for one sample is not necessarily true in another context or another sample. To address this challenge, the thesis proposes a simple distinction that separates the group of business starters into two sizeable subgroups, NIs and NEs. While each group is still heterogeneous, a clear and parsimonious distinction between NIs and NEs contributes at least a first step towards addressing the heterogeneity challenge.

Thesis Outline

Figure 1 below provides an overview of the general layout of the thesis. The Figure demonstrates the relationships and interdependencies of the three essays. From left to right, the Figure shows how the three essays connect and build on each other. The thesis is therefore structured as follows: the next three chapters are dedicated to the individual essays of this thesis followed by the concluding analysis. Chapter two is comprised of the first essay on theoretical differences between NIs and NEs. Chapter three is the second essay and discusses the motivational differences between NIs and NEs. The third essay in chapter four examines the differences in start-up and abandonment rates between NIs and NEs. Chapter five draws together the findings from the three studies and concludes with a discussion of the results, their implications and ideas for future research.

Figure 1 Influences and Consequences of Venturing Mode - Layout of the three essays



References

Acs, Z., & Armington, C. 2004. Employment Growth and Entrepreneurial Activity in Cities. ***Regional Studies***, 38(8): 911-927.

Alänge, S., & Scheinberg, S. 1988. Swedish entrepreneurship in a cross-cultural perspective. In B. A. Kirchoff, W. A. Long, W. E. McMullan, K. H. Vesper, & W. E. Wetzel (Eds.), ***Frontiers of Entrepreneurship Research***: 1-15. Wellesley, MA: Babson College.

Aldrich, H. E., & Martinez, M. A. 2001. Many are Called, but Few are Chosen: An Evolutionary Perspective for the Study of Entrepreneurship. ***Entrepreneurship: Theory & Practice***, 25(4): 41-56.

Antoncic, B., & Hisrich, R. D. 2001. Intrapreneurship: Construct refinement and cross-cultural validation. ***Journal of Business Venturing***, 16(5): 495-527.

Antoncic, B., & Hisrich, R. D. 2004. Corporate entrepreneurship contingencies and organizational wealth creation. ***Journal of Management Development***, 23(6): 518-550.

Baron, R. A., & Tang, J. 2011. The role of entrepreneurs in firm-level innovation: Joint effects of positive affect, creativity, and environmental dynamism. ***Journal of Business Venturing***, 26(1): 49-60.

Brixy, U., Sternberg, R., & Stüber, H. 2012. The Selectiveness of the Entrepreneurial Process. ***Journal of Small Business Management***, 50(1): 105-131.

Burgelman, R. A. 1983. Corporate Entrepreneurship and Strategic Management: Insights from a Process Study. ***Management Science***, 29(12): 1349-1364.

Carter, N. M., Gartner, W. B., Shaver, K. G., & Gatewood, E. J. 2003. The career reasons of nascent entrepreneurs. ***Journal of Business Venturing***, 18(1): 13-39.

Covin, J. G., & Slevin, D. P. 1991. A Conceptual Model of Entrepreneurship as Firm Behavior. ***Entrepreneurship: Theory & Practice***, 16(1): 7-25.

Davidsson, P. 2006. ***Nascent Entrepreneurship: Empirical Studies and Developments***. Hannover, MA: now Publishers.

Davidsson, P., & Gordon, S. R. 2010. ***Panel studies of new venture creation: a review and suggestions for future studies***. Paper presented at the Annual Meeting of the Academy of Management, Montréal, Canada.

Davis, K. S. 1999. Decision criteria in the evaluation of potential intrapreneurs. ***Journal of Engineering and Technology Management***, 16(3–4): 295-327.

Dess, G. G., Lumpkin, G. T., & McGee, J. E. 1999. Linking Corporate Entrepreneurship to Strategy, Structure, and Process: Suggested Research Directions. ***Entrepreneurship: Theory & Practice***, 23(3): 85-102.

Gartner, W. B. 1988. "Who is an Entrepreneur?" Is the Wrong Question. ***American Journal of Small Business***, 12(4): 11-32.

Gerstein, H., & Reisman, H. 1983. Strategic Selection: Matching Executives to Business Conditions. ***Sloan Management Review***, 24(2): 33-49.

Hamel, G. 1999. Bringing Silicon Valley Inside. ***Harvard Business Review***, 77(5): 70-84.

Hayton, J. C. 2005. Promoting corporate entrepreneurship through human resource management practices: A review of empirical research. ***Human Resource Management Review***, 15(1): 21-41.

Hornsby, J. S., Kuratko, D. F., & Zahra, S. A. 2002. Middle managers' perception of the internal environment for corporate entrepreneurship: assessing a measurement scale. ***Journal of Business Venturing***, 17(3): 253-273.

Hornsby, J. S., Naffziger, D. W., Kuratko, D. F., & Montagno, R. V. 1993. An Interactive Model of the Corporate Entrepreneurship Process. ***Entrepreneurship: Theory & Practice***, 17(2): 29-37.

Johnson, B. R. 1990. Towards a multidimensional Model of Entrepreneurship: The case of achievement motivation and the entrepreneur. ***Entrepreneurship Theory and Practice***, 14(3): 39-54.

Kacperczyk, A. J. 2012. Opportunity Structures in Established Firms: Entrepreneurship versus Intrapreneurship in Mutual Funds. ***Administrative Science Quarterly***, 57(3): 484-521.

Katz, J., & Gartner, W. B. 1988. Properties of Emerging Organizations. ***The Academy of Management Review***, 13(3): 429-441.

Kolvereid, L. 1996a. Organizational Employment Versus Self-Employment: Reasons for Career Choice Intentions. ***Entrepreneurship: Theory & Practice***, 20(3): 23-31.

Kolvereid, L. 1996b. Prediction of employment status choice intentions. ***Entrepreneurship: Theory & Practice***, 21(1): 47-57.

Kolvereid, L., & Isaksen, E. 2006. New business start-up and subsequent entry into self-employment. ***Journal of Business Venturing***, 21(6): 866-885.

Kuratko, D. F., Covin, J. G., & Garrett, R. P. 2009. Corporate venturing: Insights from actual performance. ***Business Horizons***, 52(5): 459-467.

Kuratko, D. F., Ireland, R. D., Covin, J. G., & Hornsby, J. S. 2005. A Model of Middle-Level Managers' Entrepreneurial Behavior. ***Entrepreneurship Theory and Practice***, 29(6): 699-716.

Kuratko, D. F., Montagno, R. V., & Hornsby, J. S. 1990. Developing an Intrapreneurial Assessment Instrument for an Effective Corporate Entrepreneurial Environment. ***Strategic Management Journal***, 11(4): 49-58.

Larson, A., & Starr, J. A. 1993. A Network Model of Organization Formation. ***Entrepreneurship: Theory & Practice***, 17(2): 5-15.

Lazear, E. P. 2005. Entrepreneurship. ***Journal of Labor Economics***, 23(4): 649-680.

Liao, J., Welsch, H., & Tan, W.-L. 2005. Venture gestation paths of nascent entrepreneurs: Exploring the temporal patterns. ***The Journal of High Technology Management Research***, 16(1): 1-22.

Low, M. B., & MacMillan, I. C. 1988. Entrepreneurship: Past Research and Future Challenges. ***Journal of Management***, 14(2): 139-161.

Lumpkin, G. T., & Dess, G. G. 1996. Clarifying the Entrepreneurial Orientation Construct and linking it to Performance. ***Academy of Management Review***, 21(1): 135-172.

Mitchell, R. K., Busenitz, L., Lant, T., McDougall, P. P., Morse, E. A., & Smith, J. B. 2002. Toward a Theory of Entrepreneurial Cognition: Rethinking the People Side of Entrepreneurship Research. ***Entrepreneurship Theory and Practice***, 27(2): 93-104.

Parker, S. C. 2004. ***The Economics of Self-Employment and Entrepreneurship***. Cambridge: Cambridge Universtity Press.

Parker, S. C. 2008. Entrepreneurship among married couples in the United States: A simultaneous probit approach. ***Labour Economics***, 15(3): 459-481.

Parker, S. C. 2011. Intrapreneurship or entrepreneurship? ***Journal of Business Venturing***, 26(1): 19-34.

Phan, P. H., Wright, M., Ucbasaran, D., & Tan, W.-L. 2009. Corporate entrepreneurship: Current research and future directions. ***Journal of Business Venturing***, 24(3): 197-205.

Pinchot, G. I. 1985. ***Intrapreneuring***. New York: Harper & Row.

Reynolds, P., & Miller, B. 1992. New firm gestation: Conception, birth, and implications for research. ***Journal of Business Venturing***, 7(5): 405-417.

Reynolds, P. D. 1997. Who Starts New Firms? – Preliminary Explorations of Firms-in-Gestation. ***Small Business Economics***, 9(5): 449-462.

Reynolds, P. D., & Curtin, R. T. 2011. Introduction. In P. D. Reynolds, & R. T. Curtin (Eds.), ***New Business Creation***, Vol. 27: 1-25: Springer New York.

Scheinberg, S., & MacMillan, I. C. 1988. An 11-country study of motivations to start a business. In B. A. Kirchoff, W. A. Long, W. E. McMullan, K. H. Vesper, & W. E. Wetzel (Eds.), ***Frontiers of Entrepreneurship Research***: 669-687. Wellesley, MA: Babson College.

Schmelter, R., Mauer, R., Börsch, C., & Brettel, M. 2010. Boosting corporate entrepreneurship through HRM practices: Evidence from German SMEs. ***Human Resource Management***, 49(4): 715-741.

Shane, S. 2003. ***A General Theory of Entrepreneurship: The Individual-Opportunity Nexus***. Cheltenham: Edward F. Elgar.

Shimizu, K. 2012. Risks of Corporate Entrepreneurship: Autonomy and Agency Issues. ***Organization Science***, 23(1): 194-206.

Shrader, R. C., & Simon, M. 1997. Corporate versus independent new ventures: Resource, strategy, and performance differences. ***Journal of Business Venturing***, 12(1): 47-66.

Smith, D. A., & Lohrke, F. T. 2008. Entrepreneurial network development: Trusting in the process. ***Journal of Business Research***, 61(4): 315-322.

Sørensen, J. B. 2007. Bureaucracy and Entrepreneurship: Workplace Effects on Entrepreneurial Entry. ***Administrative Science Quarterly***, 52(3): 387-412.

Sørensen, J. B., & Fassiotto, M. A. 2011. Organizations as Fonts of Entrepreneurship. ***Organization Science***, 22(5): 1322-1331.

Stewart, W. H., & Roth, P. L. 2007. A Meta-Analysis of Achievement Motivation Differences between Entrepreneurs and Managers. ***Journal of Small Business Management***, 45(4): 401-421.

Stopford, J. M., & Baden-Fuller, C. W. F. 1994. Creating corporate entrepreneurship. ***Strategic Management Journal***, 15(7): 521-536.

Teng, B.-S. 2007. Corporate Entrepreneurship Activities through Strategic Alliances: A Resource-Based Approach toward Competitive Advantage*. ***Journal of Management Studies***, 44(1): 119-142.

van Praag, C., & Versloot, P. 2007. What is the value of entrepreneurship? A review of recent research. ***Small Business Economics***, 29(4): 351-382.

Zahra, S. A. 1993. Environment, corporate entrepreneurship, and financial performance: A taxonomic approach. ***Journal of Business Venturing***, 8(4): 319-340.

Zahra, S. A., & Covin, J. G. 1995. Contextual influences on the corporate entrepreneurship-performance relationship: A longitudinal analysis. ***Journal of Business Venturing***, 10(1): 43-58.

Zahra, S. A., Nielsen, A. P., & Bogner, W. C. 1999. Corporate Entrepreneurship, Knowledge, and Competence Development. ***Entrepreneurship: Theory & Practice***, 23(3): 169-189.

Chapter 2 : Starting inside or outside of corporate Walls? Multiple Perspectives on the Choice of New Venture Creation Mode

Introduction

The Individual-Opportunity Nexus (ION) has influenced the scholarly discussion about the creation of new ventures. First introduced by Shane and Venkataraman, the ION argues for an augmentation of the individual-centric view of entrepreneurship with the integration of opportunities (Shane, 2003; Shane & Venkataraman, 2000). The interaction of individuals and opportunities is central to new venture creation. Shane (2003) further explained how individuals identify and then exploit opportunities in the lead up to new ventures. Not without critics, scholars considered the ION incomplete for being under-socialized (Baker, Gedajlovic, & Lubatkin, 2005) or void of context (Zahra & Dess, 2001). Lately scholars controversially discussed the ION with respect to its epistemology and the question of whether individuals create or discover opportunities (Alvarez & Barney, 2013; Eckhardt & Shane, 2013; Venkataraman, Sarasvathy, Dew, & Forster, 2013).

Yet, the literature has not discussed how the integrated perspective of the ION can inform a fundamental decision in the lead up to new venture creation that is the venture mode choice. Some individuals try to start a new venture with their employer as Nascent Intrapreneurs (NIs) (Burgelman, 1983; Pinchot, 1985). Others become independent Nascent Entrepreneurs (NEs) (Reynolds, 1997). This essay employs the definition of a NI as a person in the process of starting a new venture (Reynolds & Miller, 1992) together

with his or her employer (Pinchot, 1985). While not all employees have the option to become NIs, some do have the option (due to organizational rank, social capital, etc.) to explore the intrapreneurship (or corporate entrepreneurship) mode of new venture creation. NIs furthermore can expect to own part of the nascent venture on which he or she is working in many cases (Martiarena, 2013). This makes NIs distinct from other employees.

A nascent entrepreneur (NE), in comparison to a NI, tries to develop a new venture independently or in a team, but outside of the organizational context (Reynolds, Carter, Gartner, & Greene, 2004; Reynolds, 1997). NEs own their venture themselves. Despite scholarly work recognizing the importance of entrepreneurs for the economy (van Praag & Versloot, 2007) and of intrapreneurs for innovation and organizational renewal inside established organization (Antoncic & Hisrich, 2001), the literature has uncovered few antecedents to the venturing mode choice (NI or NE).

The gap in our understanding of the antecedents to the venturing mode choice in entrepreneurship research in general, and the ION in particular, is concerning for four reasons. First, a clear conceptualization of the venturing mode (NI or NE) is necessary to define the boundary conditions of the new venturing activity. We know for example that the organizational context is of particular importance for new venture creation (Sørensen & Fassiotto, 2011). Approximately 90 per cent of individuals who attempt to start a new venture have previously been employed (Burton, Soerensen, & Beckman, 2002; Gompers, Lerner, & Scharfstein, 2005). Sociologists argue that this context shapes the individuals involved in new venture creation (Aldrich & Martinez, 2001). Yet, the ION fails to include the organizational context and its influences on the venture mode choice.

Second, studying the venture mode is timely and important because contemporary guidance from individual level entrepreneurship studies centers on the general decision to start or not to start developing a nascent venture (Townsend, Busenitz, & Arthurs, 2010). Entrepreneurship studies do not focus on the optimal venture mode for the individual and business opportunity. This neglect is in disagreement with evidence that links the venture mode to the performance of the resulting nascent venture (Zahra, Neubaum, & El-Hagrassey, 2002) and the performance of a parent company (Campbell, Ganco, Franco, & Agarwal, 2012). In light of this evidence, this essay suggests that we need to understand the antecedents of the venture mode choice if we want to understand completely how the venture mode influences start-up and parent company performance.

Third, scholars concerned with the organizational context of new venture creation continue to study how to optimize the environment for new ventures inside organizations (Schmelter, Mauer, Börsch, & Brettel, 2010; Wang, Guidice, Tansky, & Wang, 2010). If these studies fail to consider the venturing mode such efforts are likely to have the unwanted consequences of prospective NIs leaving the corporation to become independent NEs (Anton & Yao, 1995; Klepper & Sleeper, 2005). This essay's focus on the antecedents of the venture mode choice clarifies the conditions under which individuals are likely to stay with their company and become NIs.

Fourth, the essay focuses further on the ION. Studying antecedents to the venture mode more comprehensively than before provides an opportunity to add another explanatory factor to the ION. The essay combines its individual and opportunity perspectives with the organizational perspective promoted by the corporate entrepreneurship (CE) literature and advocated by Sørensen and Fassiotto (2011).

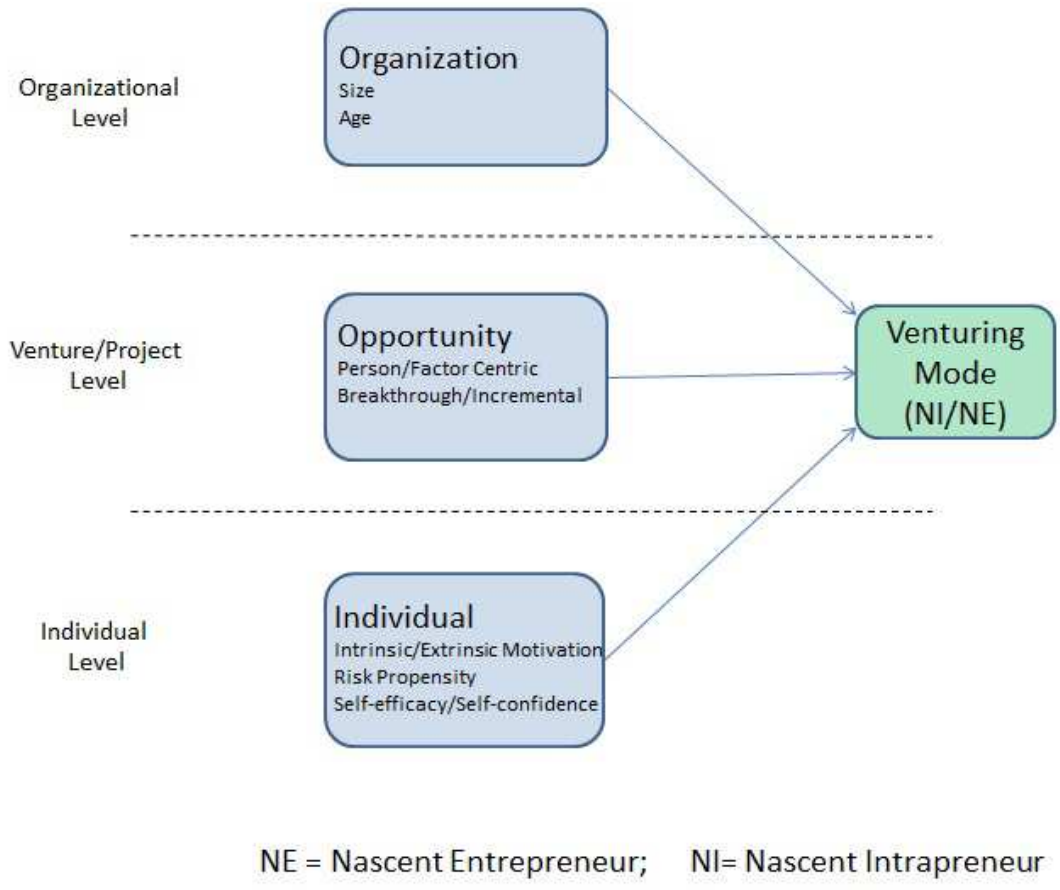
Consequently, the gap in this essay concerning antecedents to the venturing mode construct is addressed by the question: how do individual, opportunity, and organizational factors influence the venture mode choice?

This essay's principle contribution is the development of a theoretical model that explains how individual, opportunity, and organizational factors determine the venture mode choice. By doing so, the essay extends the ION to become the Individual-Opportunity-Organization Nexus (IOON). The IOON promises to provide a more comprehensive analysis of new venture creation than the ION and to enable further cross-level theorizing.

The following presents the research model, augmenting the ION with Sørensen and Fassiotto's perspective on organizational context (2011). Next, I develop the propositions underlying the model. The discussion section explains the model's advantages and implications for future research.

Theoretical Framework: Multiple Perspectives on the Venturing Mode

Figure 2 Research Model: Individual-Opportunity-Organization Nexus - Essay 1



As depicted in Figure 2 above, the research model extends the Individual-Opportunity Nexus (ION) to include an organizational perspective on the venturing mode choice. The ION by itself explains individual entrepreneurial activity in general through the interaction of individual and opportunity characteristics. This is in line with the

subjectivist theory of entrepreneurship (Mahoney & Michael, 2005; Kor, Mahoney & Michael, 2007). Kor and colleagues (2007) have extended the subjectivist theory developed by Mahoney and Michael (2005) to include how an individual's subjective perceptions shape the set of opportunities available to an organization. Subjective perceptions of individuals, as for example their risk propensity and an individual's self-efficacy, play a major role in the formation of believes about opportunities (Gregoire & Shepherd, 2012).

The model presented in this essay builds on this research and in addition explains the influence of the organizational context on the entrepreneurial process. As another feature, the IOON focuses on one particular characteristic of venturing: the venturing mode.

My research model proposes main effects of individual, opportunity and organizational factors as well as interactions amongst the three as influencers on the venturing mode choice. For the development of the proposed relationships between individual, opportunity, and organizational factors and the new venture mode choice, the new IOON adopts the view that a holistic and more comprehensive theorizing about the three factors understands them as equally important next to each other. Any one perspective on new venture start-up activity may be informative but would be insufficient in explaining the complex reality at play in new venture creation and venture mode choice. If the essay neglected one of the three factors, even the most elegant theorizing incorporating the other two factors could not predict the impact of the remaining third factor. The three factors are independent yet they interact with each other. The following introduces specific characteristics of each of the three factors.

How separate individual, opportunity, and organizational characteristics influence new venture creation has a long history of scholarship in entrepreneurship. The IOON incorporates three individual characteristics (1-3), two opportunity characteristics (4&5), and two organizational characteristics (6&7) known to influence the general start-up decision in order to demonstrate how they affect the venture mode decision of becoming an NI relative to becoming an NE.

Prior research has investigated individual level effects on entrepreneurship (Baum & Bird, 2010; Hmielski & Baron, 2009). The three individual variables chosen for this essay as exemplary illustrations reflect the author's belief that several individual characteristics must temporally and logically precede the economic analysis of venture viability. As Penrose suggests: "the decision to search for opportunities is an enterprising decision requiring entrepreneurial intuition and imagination and must proceed the 'economic' decision to go ahead with the examination of opportunities of expansion" (Penrose, 1959, pg 34). Therefore the individual aspects of motivation (Shane, Locke, & Collins, 2003), risk propensity, and self-efficacy/self-confidence (Chen, Greene, & Crick 1998) were selected to represent the individual influences most likely to impact the venture mode decision, even before the economic part of the venturing decision becomes dominant.

The essay draws on parts of the motivation literature that differentiates (1) intrinsic and extrinsic motivation (Amabile, 1993; Amabile, Hill, Hennessey, & Thige, 1994; Kuratko, Hornsby, & Naffziger, 1997). Researchers emphasized that stable personal traits such as (2) risk propensity inform the venturing decision (Cramer, Hartog, Jonker, & Van Praag, 2002; Ekelund, Johansson, Järvelin, & Lichtermann, 2005).

Research also explored how (3) self-efficacy (Bandura, 1977) and self-confidence beliefs positively affect the start-up decision (Baum & Locke, 2004; Townsend et al., 2010).

Regarding the characteristics of opportunities, little prior work has paid attention to how they influence the venturing decision (Gregoire & Shepherd, 2012). Maine (2008) explored an opportunity's gradient of newness and potential impact on the industry. Dahlqvist and Wiklund (2012) measured the market newness of new ventures. Following such earlier examples, this essay explores such characteristics in from of the influence of (4) break-through or incremental opportunities on the relative choice of NI over NE. As a second opportunity characteristic, this essay differentiates between (5) person-centric or factor-centric opportunities. A person person-centric opportunity refers to a venturing idea that is dependent on an individual's skills or experiences. Factor-centric opportunities require specific assets as inputs in order to develop the opportunity. While such theorizing in the lead up to new venture creation is new to the best of my knowledge, there is a reasonable amount of scholarly work on complementary factors needed in the exploitation of an opportunity, which my argumentation draws upon (Jacobides, Knudsen, & Augier, 2006; Teece, 1986; Teece, Pisano, & Shuen, 1997).

Finally, scholars taking an organizational perspective on new venture creation discuss how (6) organizational size and (7) organizational age affect organizational development in general and new venture creation in particular (Kacperczyk, 2012; Le Mens, Hannan, & Pólos, 2011; Sørensen, 2007; Sørensen & Stuart, 2000).

This essay suggests that the combination of these three factors with their seven characteristics provide a comprehensive perspective on the venturing mode choice. It is

also relevant to acknowledge that previous research on new venture creation in general guides this essay's choice of each factor's characteristics. I selected these seven particular characteristics because previous research has shown their effect on the general start-up decision. If existing research has already established their effects on general start-up propensity, it is likely that these characteristics will also contribute theoretically to inform the venture mode choice: NIs and NEs. Since the decision to start a venture is theoretically linked to the choice of the venturing mode, other factors that have not been theorized to affect the general start-up decision do not enter the IOON. In this way, my theoretical paper addresses concerns about selection bias influencing the studies of subgroups of nascent venturers (Parker, 2011).

Without any claim of full comprehensiveness in the characteristics of each of the three factors, this essay attempts to clarify how seven individual, opportunity, and organizational characteristics known to influence the general start-up decision affect the venturing mode choice. The following analysis justifies the inclusion of each characteristic by explaining how it is influential in the general start-up literature. The essay examines how each characteristic affects the choice of trying to start a new venture as NI relative to becoming a NE.

Individual Characteristics

Individual determinants within the ION explain that not every person is equally likely to take up nascent venturing. As the individuals' utility from nascent venturing exceeds the opportunity cost, nascent venturing becomes more likely (Shane, 2003).

Some scholars have argued that individuals who are intrinsically motivated and self-confident are perceived to enjoy higher utility in similar opportunities (Monsen, Patzelt, & Saxton, 2010) thus making them more likely to engage in any start-up activities. People with high opportunity costs influencing their risk propensity, such as well-paying jobs, are less likely to take on a venturing opportunity (Cassar, 2006).

Research based on the Work Preference Inventory (Amabile et al., 1994) shows that individuals who are more driven by intrinsic motivation (e.g. independence) than by extrinsic motivation (e.g. financial rewards and reputation) are more likely to start their own business than to remain employed (Plant & Ren, 2010). Individuals intrinsically motivated by working independently might prefer becoming a NE over becoming a NI since inside the corporation as NIs they would still have a manager influencing their decision. Outside and independent of any organization, NEs are freer to make decisions on their own (Kuratko et al., 1997).

Individuals motivated intrinsically by achieving a legacy are also more likely to choose to start their own business (Alstete, 2002). They can attach their name and identity to their own work instead of being absorbed into a company's (brand) name. These individuals can distinguish their contribution and create a legacy that links directly to their name. This essay therefore suggests that individuals who derive happiness from within and value legacy building are more likely to become NEs than those who thrive on the recognition by others.

Conversely, extrinsically motivated individuals who explicitly seek personal recognition from their environment would not find enough enjoyment in nascent

venturing alone. Instead they require supplemental financial and reputational compensation by others (Plant & Ren, 2010). These individuals are more likely to become NIs because inside the organization prospective NIs have direct access to their reference group and the social network from whom they seek to receive extrinsic rewards. This is evidenced in part by the social and emotional embeddedness of intrapreneurs. Emotional embeddedness of intrapreneurs goes as far as causing envy amongst those less involved with intrapreneurial ventures (Biniari, 2012). Extrinsically motivated individuals thus find the corporate environment better suited if they seek and receive approbation and recognition by others (Wayne, Shore, & Liden, 1997). Intrapreneurial venturing activity readily provides individuals who harbor a desire for extrinsic rewards with a corporate environment able to satisfy this need.

Another argument suggests that extrinsically motivated individuals thrive in environments where rewards are directly linked to their work. Any delay generally weakens the connection between the achievement and the extrinsic reward (Li, Su, & Sun, 2010). Since nascent ventures rarely produce immediate extrinsic rewards, patience is required before the nascent venture provides substantial compensation. Reynolds and Miller for example found that 90% of all venturing efforts have a gestation window of up to 36 months (Reynolds & Miller, 1992). Therefore, extrinsically motivated individuals likely prefer employment where they receive regular and timely rewards for their efforts. In short, this essay proposes that individuals who do not choose a venturing opportunity out of personal fulfillment and intrinsic motivation are more likely to need external and more immediate recognition as a sort of compensation for the lack of intrinsic fulfillment.

Proposition 1: There is a positive relationship between how extrinsic (as opposed to intrinsic) an individual's motivation is and the likelihood of the individual choosing NI over NE as the venturing mode.

Risk preferences distinguish venturers from non-venturers (Ekelund et al., 2005; Stewart Jr & Watson, 1999). Individuals with higher risk propensity are more likely to engage in any sort of nascent venturing activity (Cramer et al., 2002). However, individuals with lower risk propensity could be more likely to become NIs. One reason for this preference is that NIs existing employment contracts already assimilate steady risk-return relationships. Employees predominantly earn a fixed salary. The risk that the amount or payment terms fluctuate is small. Even as they try to start a new venture as NIs, employees are likely to earn a fixed salary. Their employment income is secure, stable, and independent of the performance of the nascent venture. In addition to a salary, NIs typically earn a percentage of the venture's profit (Lerner, Azulay, & Tishler, 2009) because they are part owners. Secure, timely and stable income favors individuals with low risk inclinations.

In contrast, a nascent venturer with high return aspirations who is willing to bear more personal risk is more likely to become a NE. Three main reasons underlie this conjecture. First, an individual willing to accept more personal risk for greater participation in the rewards usually has to leave an employer in order to achieve these higher risk-return ratios. Because of departmental equality and established payment scales, corporations are often unwilling and unable to increase risk-return ratios for

individual employees (Balkin & Gomez-Mejia, 1984; Sykes, 1992). This argument is most prominent in the case of an overachieving employee, who in the corporate setting would seldom get to keep all the extra benefit of her work to herself. Usually a contract specifies the exact percentage of revenue or profit for the NI. In any case the fact that both NI and the organization participate in the potential upside of a nascent venture makes the upside less attractive compared to NEs. NEs do not have to share the upside with others.

Second, a corporation has very little incentive to keep an employee who would preferably exchange the structure and security of a salaried position for the higher risk and higher expected return of an independent venturing activity. Such different risk propensities have been argued to lead to agency problems between the NI and the firm (Jones & Butler, 1992; Shimizu, 2012). Shimizu (2012) makes the argument that although firms try to encourage risk-taking by their employees in order to foster intrapreneurship, the corresponding autonomy the organization grants, creates information asymmetries (Kuratko, Irleand, & Hornsby, 2004). Information asymmetry in turn might invite opportunistic behavior of NIs.

Third, the argument also works the other way around. Individuals interested in becoming NEs seem to be comfortable handling higher risk levels (Simon, Houghton, & Aquino, 2000). They do not share the upsides of their venturing activity, but they also would not be able to share potential downside risks. If the NE’s venture does not start-up to be a successful new firm in the future, the NE alone carried the costs and investments of the venturing activity.

We can further differentiate the risk propensity of NIs and NEs by analyzing their willingness to put personal assets at risk to finance their venture. Typically, independent entrepreneurs have a substantial portion of their private wealth invested in their firms (Busenitz, Fiet, & Moesel, 2005). If an individual is so confident about the future profitability of his nascent venture that he is willing to risk personal assets, he might be less likely to seek outside equity investors. That is because rational individuals would be less likely to share the potential upsides. However, they might be very interested in trying to secure non-equity financing, such as bank loans and supplier credits. In other words, if an individual is willing to assume personal risk in order to solely benefit from greater rewards the NE path is the utility optimizing choice. On the other hand, individuals who are less willing to invest personally into their nascent venture might seek corporate partners to gain access to others' resources. Individuals who prefer to keep their personal equity untouched might be more inclined to become NIs because in that scenario the company assumes the risk involved in starting a new venture.

Proposition 2: There is a negative relationship between an individual's risk propensity and the likelihood of them choosing NI relative to NE as the venturing mode.

Self-efficacy concerns and self-confidence help us understand specific individual differences between NIs and NEs. Scholars have shown that individuals with higher self-efficacy and self-confidence are more likely to have business start-up intentions (Townsend et al., 2010; Tyszka, Cieślik, Domurat, & Macko, 2011; Urban, 2010). Scholars characterize NEs as often overconfident (Bernardo & Welch, 2001; Busenitz &

Barney, 1997; Forbes, 2005). Such findings suggest that the higher the self-efficacy and self-confidence of an individual, the lesser their perceived need for help. Even if an individual lacks all of the required skills to start a venture successfully, he is likely confident in his capability to acquire these skills in the future. If confident individuals perceive little need for outside assistance and trust themselves, such individuals might prefer to become NEs. From their perspective, the corporate setup may not add much value; they believe they are better off on their own.

Conversely, individuals with lower self-efficacy and self-confidence might feel the need for a big, established corporate partner. They likely feel incapable and insecure on their own. This argument finds empirical support in Martiarena's (2013) study comparing entrepreneurs and two types of intrapreneurs based on their perceived start-up skills. She found that intrapreneurs are less likely to feel that they have what it takes and that there are opportunities for them to exploit (Martiarena, 2013). Trying to start a nascent venture together with their employer can give NIs the confidence needed to bring the nascent venture to market (Hayton, 2005). They are reassured about their venturing plans only once they feel the support of an established corporation. This argument is also in line with entrepreneurs experiencing a boost in confidence once their venturing ideas secure external financing (Forbes, 2005). Forbes shows that NEs inherently have a tendency to be overconfident and that some events exacerbate such tendencies (2005). In contrast, individuals who do not perceive themselves to have "what venturing takes" search for a possibility to fill the perceived void in their skillset or assets. As such, they are more likely to choose to become NIs.

Proposition 3: There is a negative relationship between an individual's self-efficacy and self-confidence and the likelihood of them choosing NI relative to NE as the venturing mode.

Opportunity Characteristics

Research in entrepreneurship has analyzed the sources of opportunities, their creation, discovery, the process of evaluating and exploiting them (Shane & Venkataraman, 2000; Short, Ketchen, Shook, & Ireland, 2010). Yet these studies are often separate from the studies on the individual entrepreneur (Sarason, Dean, & Dillard, 2006). In a first step to overcome this divide, the individual-opportunity-nexus (ION) (Shane, 2003; Shane & Venkataraman, 2000) proposes an interaction between individual and opportunity in the lead-up to entrepreneurial activity. The ION recognizes that the opportunity influences the entrepreneur potentially as much as the entrepreneur influences the opportunity (Sarason et al., 2006). The ION furthermore offers several insights into the origin of opportunities in technological, regulatory, and social change. It also elaborates on the form of new opportunities: markets, raw materials, production techniques, etc. (Shane, 2003).

Building on the existing research on the origin of new opportunities, we advance our understanding of the consequences of opportunity characteristics. In particular, compared to our understanding of how opportunity characteristics influence the general start-up likelihood, we know little about how opportunity characteristics affect the venture mode decision. Parker (2011) has established that NIs are more likely to engage

in business to business opportunities whereas NEs are more likely to market their nascent venturing efforts directly to the consumers. This essay suggests that other differences in opportunity characteristics have an impact on the venture mode decision as well. Two additional opportunity characteristics could affect the venture mode decision (NI or NE): person-centric (as opposed to factor-centric) and incremental (as opposed to breakthrough).

An opportunity is person-centric if the outcome relies on one or more specific people. An opportunity is factor-centric if the outcome relies on a specific combination of resources. Whether an opportunity is person-centric or factor-centric influences the ease and independence with which NIs and NEs can start their new venture. Person-centric opportunities often commercialize an individual's personal skills or experience (Dencker, Gruber, & Shah, 2009). This is one reason why so many new ventures start in the service industry and offer a particular skill of the founder for sale (i.e. web page design, programming, hair styling, industry consulting, etc.). The finding that amongst all nascent business starters, many personal hobby businesses exist (Reynolds et al., 2004) strengthens this allegation.

Who is in control of the necessary inputs warrants our attention. With a person-centric opportunity, the individual herself is in control of when and how her skills are used. Such control is important because it determines who benefits from the use of the skills. In a person-centric opportunity the involvement of an employer as a venturing partner is unnecessary. The individual can independently offer her skills. We also observe this phenomenon when a former employee decides to offer her services on her own account to the same former employer, usually in return for higher compensation.

A factor-based opportunity requires the dedication of specific resources. Seizing an opportunity involves the identification and securing of relevant input factors that are not person-centric but rather complementary assets to bring the new business to market (Teece, 2003). These could range from expensive machinery, a network of sales agents, to patents, or established contracts with suppliers of scarce raw material. When the necessary factor inputs are very specific, not easily replaced, or substituted, the owner of the input factors usually receives a substantial share of returns (Teece et al., 1997). Unlike person-centric opportunities, factor-centric opportunities require the individual to discover the opportunity as well as specific input factors to exploit it. For a factor-centric opportunity, the venture's performance depends on the specific resources (Le Mens et al., 2011). If an employer has the specific resources and this combination of individual and specific (non-personal) input factors becomes necessary, the individual is more likely to try to become a NI as opposed to becoming a NE.

Studies on legitimacy in nascent ventures suggest that it is easier to acquire specific factors from within an established company, as opposed to as a newly forming independent nascent venture (Delmar & Shane, 2004; Suchman, 1995; Tornikoski & Newbert, 2007). Because of high proximity and familiarity with the resource endowment of the employer, employees are likely to explore opportunities based on the specific resources their employer has to offer (Andersson, Baltzopoulos, & Loof, 2012). If that is the case, the employer's participation becomes increasingly likely, at least as an owner of complementary input factors.

It is possible that NEs have access to complementary resources through financing from banks or by forming alliances. However, the very nature of a factor-centric

opportunity suggests that the owner of the necessary factor input reaps the largest benefit from its exploitation. The higher bargaining power of the owner of the necessary factor input could easily suppress the NEs upside in the potential collaboration. If the opportunity is clearly factor-centric, the individual contribution of the NE might further become marginal in its importance to secure a successful start-up process. As in a factor-centric opportunity, the individual NE would only be able to contribute much less than in a person-centric opportunity, the factor -centric opportunities might be more attractive to pursue together with corporations, i.e. nascent intrapreneurship. Person-centric opportunities are most attractive for NEs.

Proposition 4: There is a positive relationship between how factor-centric (as opposed to person-centric) an opportunity is, and the likelihood of an individual exploring that opportunity in the NI relative to NE venturing mode.

Whether an opportunity promises breakthrough (i.e. disruptive) or incremental (i.e. non-disruptive, but sustaining) advancement affects the start-up decision and the venture mode choice as well. If an idea appears to generate only incremental benefits to an existing and already exploited opportunity it is less attractive for an individual to pursue. That is, its desirability could be lower (Haynie, Shepherd, & McMullen, 2009; Mitchell & Shepherd, 2010). Breakthrough opportunities hold out higher promises in terms of compensation and impact on the industry and society. That stimulates their exploitation. While it may seem that breakthrough opportunities are proportionally more likely to incentivize start-up in general, this essay proposes two explanations why incremental opportunities with their higher feasibility lend themselves more readily to exploration in the corporate context. First, an incremental advancement suggests the

existence of an existing opportunity that one can incrementally advance. Individuals inside the organization exploiting the existing opportunity are in a preferential position to judge the merit of an incremental improvement opportunity. This is because the organizational members possess experience in the relevant industry. Second, incremental adjustments seldom necessitate system-wide change. They rarely require major adjustments or potentially costly changes in departments or compensation structures. Bhide (2000) makes the argument that organizations or individuals facing high opportunity costs are likely more interested to pursue high return venturing activities. Organizations with smaller opportunity costs could therefore be more willing to embark on these kinds of calculable and manageable improvements (Bhide, 2000). This is particularly true if the organization has a shareholder enforced focus on short-term profitability. The acceptance of incremental improvements to the existing business model seems a more likely proposition where short term feasibility strongly influences opportunity evaluation (Tumasjan, Welpe, & Spörrle, 2012) in comparison with a highly uncertain potential breakthrough opportunity. The consequences of an incremental advancement opportunity are potentially much easier to calculate then the hypothetical costs and benefits of a potential breakthrough opportunity.

Adding to the difficulty in forecasting the outcome of pursuing a potential breakthrough opportunity, the existing business model might be a threat at the same time. The potential obsolescence of the existing business model (in a Schumpeterian sense) can lower the organization's interest in exploiting a potential breakthrough opportunity. One could counter argue that already existing companies are in a better (resource, legitimacy, human capital) position to seize breakthrough opportunities and that as such,

breakthrough opportunities might be more attainable for NIs inside organizations. Some companies strive for such a self-renewing, constantly innovating business model of self-inflicted partial obsolescence (e.g. 3M, Apple) despite the potential of endangering the existing business model. A breakthrough opportunity would not present the same challenges to a NE. All else equal, the NE does not have to worry about how the parent organization perceives the breakthrough opportunity. This is because there is no danger of damaging customer or supplier relationships. The NE's fresh slate therefore makes it easier for him to tackle a potential breakthrough opportunity. Further, if the opportunity has the potential for a breakthrough, its conservation as an independent new way of conducting business might be more achievable outside of existing corporate boundaries. Within an established organization the breakthrough opportunity runs the risk to be tamed down and forcefully integrated into established organizational routines. Finally, challenging the established status quo of an industry with a potential breakthrough opportunity might be particularly thrilling for an intrinsically motivated individual such as a NE. NEs do not want to fit into existing systems and have been characterized as rebels (Davidsson & Gordon, 2010). As risk and return ratios increase with breakthrough opportunities, these opportunities might attract more risk bearing individuals. Both of these conjectures are congruent with proposition one and two.

Proposition 5: There is a negative relationship between how breakthrough (as opposed to incremental) an opportunity is and how likely an individual is to explore that opportunity through the NI relative to the NE venturing mode.

Organizational Characteristics

This essay has argued how existing individual and opportunity characteristics might impact the venture mode decision. The following section examines organizational characteristics. In previous research, size and age of organizations have been linked to the rate of spin-offs and spin-outs (Elfenbein, Hamilton, & Zenger, 2010). Spin-offs and spin-outs are conceptually very similar to nascent ventures started by NIs and NEs because the first remains within corporate boundaries as part of the organization whereas the second does not. Research in this area suggests that employees in smaller firms self-select into entrepreneurship as much as they self-select to work for smaller employers (Parker, 2009). In addition, smaller, younger firms expose potential venturers to several different business tasks. Such exposure has been argued to stimulate the skillsets of a "Jack of all trades" (Lazear, 2004) rather than the mastery of a singular function. In turn, such diverse exposure and balanced skillsets prepare a potential venturer to start a venture (Lazear, 2005).

Simultaneously the small size of the organization makes it less likely that the venturing effort remains within the organization. This is because of two reasons. First, smaller organizations have little slack in organizational resources. The regular business activity presumably consumes the majority of resources, time, and energy. Such slack, however, could support a nascent intrapreneurial venture because there is usually less or no competition for its use. If the NI venture uses resources that other organizational members do not need, it minimizes conflict potential. Second, adding a NI venture to an existing small and young organization might threaten the core business of the small organization. If members of a small organization feel competition for their resources,

management attention, etc. from the NI venture, the possibility of internal resistance increases. For these reasons, I expect the smaller organizational size to positively influence the likelihood of starting a nascent venture in the NE mode as opposed to the NI mode.

Research has linked the size and age of organizations, via their effect on bureaucracy, to entrepreneurial entry decision (Sørensen, 2007). Sørensen's (2007) argument suggests that larger firms limit intrapreneurial activity because their bureacracy suppresses creativity and the ceasing of business opportunities. If larger and older firms are more bureaucratic, more stifling, and constrain their employees more with bureaucratic responsibilities, older and larger firms become less likely to bring forward entrepreneurial individuals in general (Sørensen, 2007).

Yet these effects of larger firms have until recently been assumed to exist without empirical evidence of the underlying mechanisms. In her investigation of these mechanisms, Kacperczyk (2012) argued that researchers often simply inferred the stifling effects of bureaucracy based on firm size and age. Her empirical analysis showed that organizational size and age does not have to lead to less venturing activity. Instead, she argued that opportunity structures within bigger and older companies allow for embracing of employees' ideas in an integrative form (Kacperczyk, 2012). Such an argument is akin to the organizational learning literature where absorption of new knowledge becomes easier with more existing knowledge (Cohen and Levinthal, 1990). Large and established organizations can continue their core business and develop a NI venture in parallel. Their routinized processing of large amounts of complex information (Cohen and Levinthal, 1990; Galbraith, 1973) might also help to identify the precise

opportunity for the NI. Large established firms could thus provide attractive venturing grounds for NIs.

Although bureaucratic procedures are still likely to increase with organizational size and age, larger and older organizations are attractive venturing grounds for NIs. This is due to their potential slack resources, routinized information processing, and capacity to integrate NI ventures. To the extent that these capabilities of organizations increase with size and age, they might make organizational support of NIs easier. The organization's choice to adopt a nascent venture (versus to deny it support) might be positively influenced by the availability of slack resources, and the organization's absorptive capacity. It is furthermore possible that in the very early stages of the nascent venture, an established organization's positive effects outweigh the negative effects of bureaucracy. Especially if the nascent venture is in the process of becoming a new firm, the opportunity structures inside the existing and large organization might provide direct and early support that could outweigh the negative impact of bureaucracy.

Proposition 6: There is a positive relationship between organizational size and how likely an individual is to start in the NI relative to the NE venturing mode.

Proposition 7: There is a positive relationship between organizational age and how likely an individual is to start in the NI relative to the NE venturing mode.

Interactive Characteristics

Through the above propositions, this essay has built on prior research regarding the individual, opportunity, and organizational characteristics known to affect the general start-up decision. The essay has proposed relationships between these characteristics and the venturing mode choice. Beyond these direct relationships, the model presented in this essay adopts a configurational approach to explain that individual, opportunity, and organizational factors jointly influence the venturing mode choice. Configurational models deepen our understanding beyond that provided by direct effects or contextual relationships (two-way interactions) alone (Anderson & Eshima, 2013; Ketchen, Thomas, & Snow, 1993; Meyer, Tsui, & Hinings, 1993; Wiklund & Shepherd, 2005). Configurational models suggest that different configurations of strategies, structures, processes, and contexts mutually influence each other and thus result in differences to outcome variables.

The proposed IOON attempts to analyze the venturing mode choice through a configurational approach. The ION already suggests interaction effects between individual and opportunity characteristics on the general venturing decision (Shane, 2003). Research also argues for the integration of individual and organizational aspects of new venture creation (Sørensen & Fassiotto, 2011). By extension, there should also be an interaction between individual, opportunity, and organizational factors influencing the general venturing decision. If that is true, it is a small step to argue that individual, opportunity, and organizational influences also interact to explain the venture mode choice.

Any relationship including only two of the main explanatory factors can change the direction and magnitude of the effect on venturing mode. If we do not account for the third factor the analysis could be improperly configured to support the relationship between the other two. For example, suppose an extrinsically motivated individual with high risk tolerance inside a small, young organization perceives an opportunity to start a new venture. The configuration of the individual and organizational factors in this example suggests that the individual would be more likely to start such a new venture in the NE mode, as opposed to the NI mode. Yet, without consideration of the opportunity characteristics, such conclusion might be premature. If the opportunity is a factor-centric, or incremental improvement opportunity, or both, its exploitation in the NE mode is no longer as likely. In that sense, opportunity characteristics moderate the interaction effect of individual and organizational variables on the venturing mode choice. We further continue to develop one possible three-way interactive proposition.

We draw exemplarily on propositions one, four, and six. Proposition one suggested that there is a positive relationship between how extrinsic (as opposed to intrinsic) an individual's motivation is and the likelihood of the individual choosing NI over NE as the venturing mode. Proposition four suggested that there is a positive relationship between how factor-centric (as opposed to person-centric) an opportunity is, and the likelihood of an individual exploring that opportunity in the NI relative to NE venturing mode. Proposition six suggested that there is a positive relationship between organizational size and how likely an individual is to start in the NI relative to the NE venturing mode. Taken together in a three way-interaction, the following configurational proposition emerges:

Pr**oposition 8a**: Individual extrinsic (as opposed to intrinsic) start-up motivation, a factor-centric (as opposed to person centric) opportunity, and organizational size have a three-way interaction effect on the venturing mode choice such that the relationship between a factor-centric opportunity and the NI venture mode choice (relative to the NE venturing mode choice) is

a) strongest amongst extrinsically motivated individuals in large organizations;

b) next strongest amongst extrinsically motivated individuals in smaller organizations;

c) next strongest in amongst intrinsically motivated individuals in large organizations; and

d) weakest amongst intrinsically motivated individuals in small organizations.

The configurational model comprises three individual, two opportunity, and two organizational characteristics. Even if we only selected one of the characteristics of each of the three overarching factor, there would be eleven more possible three-way interactions, each with four rank-ordered relationships (a-d) to discuss. If we included all seven characteristics simultaneously, there would be 64 rank-ordered relationships possible to configure the IOON. This large number of possible combinations makes a dedicated discussion of each possible interaction less practical. However, proposition 8a above attempts to serve as an example.

Pr**oposition 8b**: There are three-way interactions between individual, opportunity, and organizational characteristics, which influence on the venturing mode choice.

Discussion

This essay offers a simple model that explains how individual, opportunity and organizational factors determine the venture mode choice (NI or NE). This essay combines different perspectives on the venture mode choice through extending the Individual-Opportunity Nexus (ION) to the Individual-Opportunity-Organization Nexus (IOON). In doing so, the essay has developed propositions of how characteristics known to influence the general start-up decision also influence the decision to explore a new venture creation opportunity together within an established organization (i.e. become a NI) or independently outside (NE). By extending the ION to become the IOON this essay makes three important contributions to future research in this area.

First, the IOON offers a more comprehensive analysis of new venture creation compared to the ION before. The IOON helps to identify the nature of boundary conditions as combinations of individual, opportunity, and organizational characteristics that effectively interact in their influence on new venture creation. As research on new venture creation identifies more boundary conditions, the IOON helps to frame new arguments in a configurational model leading up to a more comprehensive understanding of new venture creation. For example, studying the individuals engaged in new venture creation without proper inclusion of the organizational context they come from (Sørensen & Fassiotto, 2011) or the opportunity they seek to develop (Shane, 2003), falls short of the expectation to develop models that can help us understand the complex reality of new venture creation. To paraphrase Aldrich, the study of individuals, void of a specific context, is a fruitless endeavor (Aldrich, 1999). No model can nor should aim to represent every aspect of a complex reality. Yet, the use of three important factors in the IOON

represents a decision to trade full comprehensiveness for theoretical parsimony and future applicability. Following such logic, if any one of the three main categories does not enter the analysis, it is unlikely that even an optimum combination of the other two dimensions can give a clear indication of the venture mode choice. The IOON thus advocates for the inclusion of all three main categories at play in the creation of new ventures and the choice of the venturing mode, in future theorizing efforts and empirical tests. If it is desirable to develop explanations of the factors encouraging new venture creation and venture mode choice, this essay recommends that it is necessary to pay close attention to those three main dimensions and their interaction in a complex reality. The IOON helps to do so.

Second, the IOON represents a combination of different levels of analysis (individual, opportunity/venture, organization). While studies from one single level of analysis have contributed many insights that this essay draws on, it is questionable whether the next "one-level-study" will represent reality as well as the next "multilevel-study". In this way, the essay agrees with the claim by Holcomb and colleagues (2010) that more cross-level theorizing in entrepreneurship is needed. Cross-level theorizing enables the representation of multiple perspectives even within single propositions or hypotheses, considering for example how organizational size shapes and is shaped by individual risk taking behavior. The combination of treatment and selection effects deserves a special mention in this regard. Cross-level theorizing, enabled by models such as the IOON, allows for concurrent analysis of treatment effect and selection effect. Treatment effect refers to firms shaping individual behavior while selection effect refers to individuals choosing to work for organizations with certain venturing friendly

characteristics. The IOON model serves as an invitation for future research to develop theories linking the three levels most involved in the start-up decision and the venture mode decision: individual, opportunity, and organization. The IOON also enables research to take place across levels *and* over time. While this idea is beyond the scope of this essay, the integration of a chronological dimension into the IOON complements the multi-level perspective. Taking the IOON as the foundation, future research can analyze the temporal sequence of effects from different levels on new venture creation and new venture mode. For example, high levels of individual self-confidence at time one could contribute to a higher probability to take on a person-centric opportunity at time two. However, once the initial enthusiasm fades away, (potentially influenced by bureaucratic challenges associated with larger companies) individual self-confidence at time three could suffer a negative impact. This may lead to abandonment of the venturing opportunity. Such investigation combining cross-level theorizing with a longitudinal time perspective may prove to be particularly powerful in understanding the interplay of individual, opportunity, and organizational influences on new venture creation.

Third, this essay suggests that individual, opportunity, and organizational characteristics known to influence the general start-up decision in one way have a reverse effect on the likelihood that an individual chooses to develop a new venture together with an employer, i.e. the NI venturing mode. The IOON is able to address characteristics known to influence the start-up likelihood and the proposed relationship of these characteristics with the venture mode choice. This analysis suggests the existence of a simple negative relationship between the general start-up likelihood and the NI venturing mode. This negative relationship is new and important to the literature. It is new because

it is the first time that the argument has been made that differences in individual, opportunity, and organizational characteristics influence people positively towards the start-up decision, but simultaneously make them less likely to become a NI. Such theorizing finds empirical support in a study by Parker (2011) who found that "people who start new ventures rather than doing wage-and-salary work possess unobserved attributes which also predispose them to try independent starts rather than those undertaking jointly with an employer" (pg. 28). This essay provides three theoretical categories within which I developed the arguments to explain several of these effects. The negative relationship the essay theorizes between general start-up and the NI-venture mode choice then becomes important to future studies in the field. This is because if comparative studies between NIs and NEs ignored it, misleading interferences would be drawn. Parker (2011) made this point and buttressed it empirically. He contrasted the results of a simple probit comparison with a bivariate probit model accounting for this hypothesized negative relationship in form of a sample selection. His results clearly show that were the negative relationship between start-up and the NI venturing mode ignored, researchers might draw interferences based on reversed effect signs and inaccurate effect size.

Taking a step back, this model also helps to develop a new perspective on an old scholarly discussion: academic debate continues regarding whether contextual or dispositional approaches are the most suitable theoretical frameworks for new venturing activity (Aldrich, 1999; Sørensen, 2007; Zahra & Covin, 1995). The model presented in this article combines the two approaches. The IOON provides a combined perspective that might help direct attention away from the discussion about the shortcoming of one

perspective compared to the other, and instead towards potential contributions of a combined perspective on new venture creation and venture mode choice. The author`s understanding of the literature underlying the individual, opportunity, and organizational antecedents to new venture creation suggests that a mutual appreciation of individual, opportunity, and organizational approaches to the study of new venture creation is already well under way. For example, the CE literature, as a popular contextual stream, has broadened its research field considerably over the years towards an appreciation of the influences of individual and opportunity characteristics on the creation of new ventures. In particular, the more recent studies involving CE perspectives indicate a growing interest in individual intrapreneurs. For example, research aimed to find the best motivational framework for them (De Clercq, Castañer, & Belausteguigoitia, 2011) and to translate their individual level risk aversion into organizational frameworks (Antoncic, 2003). Likewise, dispositional perspectives have been used to show which opportunity characteristics NIs and NEs prefer (Parker, 2011). Other dispositional studies have developed an appreciation of organizational context. For example, scholars have investigated how intrapreneurs are instrumental in building a corporate wide appreciation of radical innovation (Kelley, O'Connor, Neck, & Peters, 2011) or how their knowledge based human capital mediates corporate performance (Simsek & Heavey, 2011). Scholars have also looked at individual level agency problems arising out of the corporate entrepreneurship context (Shimizu, 2012). If these research streams continue to broaden their scope towards further integration of influences from other levels and perspectives, the combination of organizational, opportunity, and individual influences on new venture

creation might serve as a useful framework to foster this development and situate future research attempts within this promising trajectory.

Conclusion

This conceptual essay has extended existing research with the goal to offer a combined model of new venture creation and venture mode. It offers insights into individual, opportunity, and organizational characteristics that encourage venturing in general, but also have a counterproductive effect on the likelihood of trying to start a new venture as an intrapreneur. The proposed IOON Model extends the Individual Opportunity Nexus towards including organizational characteristics and towards explaining the venture mode choice. In its current form the IOON does not explicitly deal with the possible influence of additional macro level effects. However, to the extent that macro level effects affect the organization, opportunity, and individual, the IOON might already indirectly capture several macro level effects via the discussion of individual, opportunity, and organizational influencers. In any case, the IOON could accommodate theorizing efforts including macro level effects.

The extensions proposed by the IOON allow for a more comprehensive understanding of the complex new venture creation phenomenon. The broader concept also allows future research to develop cross-level arguments that integrate all three perspectives in configurational model. Finally, the IOON sheds light on the negative relationship between the general start-up decision and the intrapreneurial venture mode choice. Future research still needs to test these propositions empirically, in combination with the empirical evidence that already exists. Accordingly, this essay suggests that future research on new venture creation carefully distinguishes between entrepreneurs

and intrapreneurs, as they occupy distinct extremes on various continuums that describe the individual, opportunity, and organizational characteristics influencing on the creation of a new venture.

References

Aldrich, H. E. 1999. *Organizations evolving*. Thousand Oaks, CA: Sage.

Aldrich, H. E., & Martinez, M. A. 2001. Many are Called, but Few are Chosen: An Evolutionary Perspective for the Study of Entrepreneurship. *Entrepreneurship: Theory & Practice*, 25(4): 41-56.

Alstete, J. W. 2002. On becoming an entrepreneur: an evolving typology. *International Journal of Entrepreneurial Behaviour & Research*, 8(4): 222-234.

Alvarez, S. A., & Barney, J. B. 2013. Epistemology, Opportunities, and Entrepreneurship: Comments on Venkataraman et al. (2012) and Shane (2012). *Academy of Management Review*, 38(1): 154-157.

Amabile, T. M. 1993. Motivational synergy: Toward new conceptualizations of intrinsic and extrinsic motivation in the workplace. *Human Resource Management Review*, 3(3): 185-201.

Amabile, T. M., Hill, K. G., Hennessey, B. A., & Thige, E. M. 1994. The Work Preference Inventory: Assessing Intrinsic and Extrinsic Motivational Orientations. *Journal of Personality and Social Psychology*, 66(4): 950-967.

Anderson, B. S., & Eshima, Y. 2013. The influence of firm age and intangible resources on the relationship between entrepreneurial orientation and firm growth among Japanese SMEs. *Journal of Business Venturing*, 28(3): 413-429.

Andersson, M., Baltzopoulos, A., & Loof, H. 2012. R&D strategies and entrepreneurial spawning. *Research Policy*, 41(1): 54-68.

Anton, J. J., & Yao, D. A. 1995. Start-ups, spin-offs, and internal projects. *Journal of Law, Economics, and Organization*, 11: 362-378.

Antoncic, B. 2003. Risk taking in Intrapreneurship: Translating the individual level risk aversion into organizational risk taking. *Journal of Enterprising Culture*, 11(01): 1-23.

Antoncic, B., & Hisrich, R. D. 2001. Intrapreneurship: Construct refinement and cross-cultural validation. *Journal of Business Venturing*, 16(5): 495-527.

Baker, T., Gedajlovic, E., & Lubatkin, M. 2005. A Framework for Comparing Entrepreneurship Processes across Nations. *Journal of International Business Studies*, 36(5): 492-504.

Balkin, D. B., & Gomez-Mejia, L. R. 1984. Determinants of R&D Compensation Strategies in the High Tech Industry. *Personnel Psychology*, 37(4): 635-650.

Bandura, A. 1977. Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2): 191-215.

Baum, J. R., & Bird, B. J. 2010. The successful intelligence of high-growth entrepreneurs: Links to new venture growth. *Organization Science*, 21: 397-412.

Baum, J. R., & Locke, E. A. 2004. The Relationship of Entrepreneurial Traits, Skill, and Motivation to Subsequent Venture Growth. *Journal of Applied Psychology*, 89(4): 587-598.

Bernardo, A. E., & Welch, I. 2001. On the evolution of overconfidence and entrepreneurs. *Journal of Economics & Management Strategy*, 10(3): 301-330.

Bhide, A. V. (2000). *The Origin and Evolution of New Businesses*. New York, NY: Oxford University Press.

Biniari, M. G. 2012. The emotional embeddedness of corporate entrepreneurship: The case of envy. *Entrepreneurship: Theory and Practice*, 36(1): 141-170.

Burgelman, R. A. 1983. Corporate Entrepreneurship and Strategic Management: Insights from a Process Study. *Management Science*, 29(12): 1349-1364.

Burton, M. D., Soerensen, J. B., & Beckman, C. 2002. Coming from good stock: Career histories and new venture formation. *Research in the Sociology of Organizations*, 19.

Busenitz, L. W., & Barney, J. B. 1997. Differences between entrepreneurs and managers in large organizations: Biases and heuristics in strategic decision-making. *Journal of Business Venturing*, 12(1): 9-30.

Busenitz, L. W., Fiet, J. O., & Moesel, D. D. 2005. Signaling in Venture Capitalist—New Venture Team Funding Decisions: Does It Indicate Long-Term Venture Outcomes? *Entrepreneurship Theory and Practice*, 29(1): 1-12.

Campbell, B. A., Ganco, M., Franco, A. M., & Agarwal, R. 2012. Who leaves, where to, and why worry? Employee Mobility, Entrepreneurship and the effects on Source Firm Performance. *Strategic Management Journal*, 33(1): 65-87.

Cassar, G. 2006. Entrepreneur opportunity costs and intended venture growth. *Journal of Business Venturing*, 21(5): 610-632.

Chen, C.C., Greene, P.G., & Crick, A. 1998. Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? *Jounral of Business Venturing*, 13: 295-316.

Cohen, W. M. & Levinthal D. A. 1990. Absorptive Capacity: A New Perspective on Learning and Innovation. *Administrative Science Quarterly*, 35(1): 128-152.

Cramer, J. S., Hartog, J., Jonker, N., & Van Praag, C. M. 2002. Low risk aversion encourages the choice for entrepreneurship: an empirical test of a truism. *Journal of Economic Behavior & Organization*, 48(1): 29-36.

Dahlqvist, J., & Wiklund, J. 2012. Measuring the market newness of new ventures. *Jounral of Business Venturing*, 27: 185-196.

Davidsson, P., & Gordon, S. R. 2010. *Panel studies of new venture creation: a review and suggestions for future studies*. Paper presented at the Annual Meeting of the Academy of Management, Montréal, Canada.

De Clercq, D., Castañer, X., & Belausteguigoitia, I. 2011. Entrepreneurial Initiative Selling within Organizations: Towards a More Comprehensive Motivational Framework. *Journal of Management Studies*, 48(6): 1269-1290.

Delmar, F., & Shane, S. 2004. Legitimating first: organizing activities and the survival of new ventures. *Journal of Business Venturing*, 19(3): 385-410.

Dencker, J. C., Gruber, M., & Shah, S. K. 2009. Individual and Opportunity Factors Influencing Job Creation in New Firms. *Academy of Management Journal*, 52(6): 1125-1147.

Eckhardt, J. T., & Shane, S. A. 2013. Response to the Commentaries: The Individual-Opportunity (IO) Nexus Integrates Objective and Subjective Aspects of Entrepreneurship. *Academy of Management Review*, 38(1): 160-163.

Ekelund, J., Johansson, E., Järvelin, M.-R., & Lichtermann, D. 2005. Self-employment and risk aversion—evidence from psychological test data. *Labour Economics*, 12(5): 649-659.

Elfenbein, D. W., Hamilton, B. H., & Zenger, T. R. 2010. The small firm effect and the entrepreneurial spawning of scientists and engineers. *Management Science*, 56(4): 659-681.

Forbes, D. P. 2005. Are some entrepreneurs more overconfident than others? *Journal of Business Venturing*, 20(5): 623-640.

Galbraith, J.R. 1973. *Designing Complex Organizations*. Reading, MA: Addison-Wesley.

Gompers, P., Lerner, J., & Scharfstein, D. 2005. Entrepreneurial Spawning: Public Corporations and the Genesis of New Ventures, 1986 to 1999. *The Journal of Finance*, 60(2): 577-614.

Gregoire, D.A., & Shepherd, D. A. 2012. Technology-Market Combinations and the Identification of Entrepreneurial Opportunities: An Investigation of the Opportunity-Individual Nexus. *Academy of Management Journal*, 55(4): 753-785.

Haynie, J. M., Shepherd, D. A., & McMullen, J. S. 2009. An Opportunity for Me? The Role of Resources in Opportunity Evaluation Decisions. *Journal of Management Studies*, 46(3): 337-361.

Hayton, J. C. 2005. Promoting corporate entrepreneurship through human resource management practices: A review of empirical research. *Human Resource Management Review*, 15(1): 21-41.

Hmieleski, K.M., & Baron, R. A. 2009. Entrepreneurs' optimism and new venture performance: A social cognitive perspective. *Academy of Management Journal*, 52: 473-488.

Holcomb, T. R., Combs, J. G., Sirmon, D. G., & Sexton, J. 2010. Modeling Levels and Time in Entrepreneurship Research An Illustration With Growth Strategies and Post-IPO Performance. *Organizational Research Methods*, 13(2): 348-389.

Jacobides, M. G., Knudsen, T., & Augier, M. 2006. Benefiting from innovation: Value creation, value appropriation and the role of industry architectures. *Research Policy*, 35(8): 1200-1221.

Jones, G. R., & Butler, J. E. 1992. Managing Internal Corporate Entrepreneurship: An Agency Theory Perspective. *Journal of Management*, 18(4): 733-749.

Kacperczyk, A. J. 2012. Opportunity Structures in Established Firms: Entrepreneurship versus Intrapreneurship in Mutual Funds. *Administrative Science Quarterly*, 57(3): 484-521.

Kelley, D. J., O'Connor, G. C., Neck, H., & Peters, L. 2011. Building an organizational capability for radical innovation: The direct managerial role. *Journal of Engineering and Technology Management - JET-M*, 28(4): 249-267.

Ketchen, D. J., Thomas, J. B., & Snow, C. C. 1993. Organizational Configurations and Performance: A Comparison of Theoretical Approaches. *Academy of Management Journal*, 36(6): 1278-1313.

Klepper, S., & Sleeper, S. 2005. Entry by Spinoffs. *Management Science*, 51(8): 1291-1306.

Kor, Y.Y., Mahoney, J.T., & Michaels, S.C. 2007. Resources, Capabilities and Entrepreneurial Perceptions. *Journal of Manangement Studies*, 44(7): 1187-1212.

Kuratko, D. F., Hornsby, J. S., & Naffziger, D. W. 1997. An Examination of Owner's Goals in Sustaining Entrepreneurship. *Journal of Small Business Management*, 35(1): 24-33.

Kuratko, D. F., Ireland, R. D., & Hornsby, J. S. 2004. Corporate Entrepreneurship Behavior amongst Managers: A Review of Theory, Research, and Pratice. In Katz, J. A. & Shepherd, D. A. eds. *Corporate Entrepreneurship* Elsevier, Oxford, UK, 7-45.

Lazear, E. P. 2004. Balanced Skills and Entrepreneurship. *American Economic Review*, 94(2): 208-211.

Lazear, E. P. 2005. Entrepreneurship. *Journal of Labor Economics*, 23(4): 649-680.

Le Mens, G., Hannan, M. T., & Pólos, L. 2011. Founding Conditions, Learning, and Organizational Life Chances: Age Dependence Revisited. *Administrative Science Quarterly*, 56(1): 95-126.

Lerner, M., Azulay, I., & Tishler, A. 2009. The role of compensation methods in corporate entrepreneurship. *International Studies of Management and Organization*, 39(3): 53-81.

Li, S., Su, Y., & Sun, Y. 2010. The effect of pseudo-immediacy on intertemporal choices. *Journal of Risk Research*, 13(6): 781-787.

Mahoney, J.T., & Michael, S.C. 2005. A subjectivist theory of entrepreneurship. In Alvarez, S.A., Agrawal, R. & Sorenson, O. (Eds.) *Handbook of Entrepreneurship*. Boston, Kluwer, 33-53.

Maine, E. 2008. Radical innovation through internal corporate venturing: Degussa's commercialization of nanomaterials. *R & D Management*, 38(4): 359-371.

Martiarena, A. 2013. What's so entrepreneurial about intrapreneurs? *Small Business Economics*. 40(1): 27-39.

Meyer, A. D., Tsui, A. S., & Hinings, C. R. 1993. Configurational Approaches to Organizational Analysis. *Academy of Management Journal*, 36(6): 1175-1195.

Mitchell, J. R., & Shepherd, D. A. 2010. To thine own self be true: Images of self, images of opportunity, and entrepreneurial action. *Journal of Business Venturing*, 25(1): 138-154.

Monsen, E., Patzelt, H., & Saxton, T. 2010. Beyond Simple Utility: Incentive Design and Trade-Offs for Corporate Employee-Entrepreneurs. *Entrepreneurship Theory and Practice*, 34(1): 105-130.

Parker, S. C. 2009. Why do small firms produce the entrepreneurs? *Journal of Socio-Economics*, 38(3): 484-494.

Parker, S. C. 2011. Intrapreneurship or entrepreneurship? *Journal of Business Venturing*, 26(1): 19-34.

Penrose, E.T. 1959. *The Theory of the Growth of the Firm*. New York: John Wiley & Sons.

Pinchot, G. I. 1985. *Intrapreneuring*. New York: Harper & Row.

Plant, R., & Ren, J. E. N. 2010. A Comparative Study of Motivation and Entrepreneurial Intentionality: Chinese and American Perspectives. *Journal of Developmental Entrepreneurship*, 15(2): 187-204.

Reynolds, P., Carter, N., Gartner, W., & Greene, P. 2004. The Prevalence of Nascent Entrepreneurs in the United States: Evidence from the Panel Study of Entrepreneurial Dynamics. *Small Business Economics*, 23(4): 263-284.

Reynolds, P., & Miller, B. 1992. New firm gestation: Conception, birth, and implications for research. *Journal of Business Venturing*, 7(5): 405-417.

Reynolds, P. D. 1997. Who Starts New Firms? – Preliminary Explorations of Firms-in-Gestation. *Small Business Economics*, 9(5): 449-462.

Sarason, Y., Dean, T., & Dillard, J. F. 2006. Entrepreneurship as the nexus of individual and opportunity: A structuration view. *Journal of Business Venturing*, 21(3): 286-305.

Schmelter, R., Mauer, R., Börsch, C., & Brettel, M. 2010. Boosting corporate entrepreneurship through HRM practices: Evidence from German SMEs. *Human Resource Management*, 49(4): 715-741.

Shane, S. 2003. *A General Theory of Entrepreneurship: The Individual-Opportunity Nexus*. Cheltenham: Edward F. Elgar.

Shane, S., Locke, E. A., & Collins, C. J. 2003. Entrepreneurial motivation. *Human Resource Management Review*, 13(2): 257-279.

Shane, S., & Venkataraman, S. 2000. The Promise of Entrepreneurship as a Field of Research. *The Academy of Management Review*, 25(1): 217-226.

Shimizu, K. 2012. Risks of Corporate Entrepreneurship: Autonomy and Agency Issues. *Organization Science*, 23(1): 194-206.

Short, J. C., Ketchen, D. J., Shook, C. L., & Ireland, R. D. 2010. The Concept of "Opportunity" in Entrepreneurship Research: Past Accomplishments and Future Challenges. *Journal of Management*, 36(1): 40-65.

Simon, M., Houghton, S. M., & Aquino, K. 2000. Cognitive, biases, risk perception and venture formation: How individuals decide to start companies. *Journal of Business Venturing*, 15(2): 113-134.

Simsek, Z., & Heavey, C. 2011. The mediating role of knowledge-based capital for corporate entrepreneurship effects on performance: A study of small- to medium-sized firms. *Strategic Entrepreneurship Journal*, 5(1): 81-100.

Sørensen, J. B. 2007. Bureaucracy and Entrepreneurship: Workplace Effects on Entrepreneurial Entry. *Administrative Science Quarterly*, 52(3): 387-412.

Sørensen, J. B., & Fassiotto, M. A. 2011. Organizations as Fonts of Entrepreneurship. *Organization Science*, 22(5): 1322-1331.

Sørensen, J. B., & Stuart, T. E. 2000. Aging, obsolescence, and organizational innovation. *Administrative Science Quarterly*, 45(1): 81-112.

Stewart Jr, W. H., & Watson, W. E. 1999. A Proclivity for Entrepreneurship: A Comparison of Entrepreneurs, Small Business Owners, and corporate managers. *Journal of Business Venturing*, 14(2): 189.

Suchman, M. C. 1995. Managing Legitimacy: Strategic and Institutional Approaches. *The Academy of Management Review*, 20(3): 571-610.

Sykes, H. B. 1992. Incentive compensation for corporate venture personnel. *Journal of Business Venturing*, 7(4): 253-265.

Teece, D. 2003. Capturing value from knowledge assets: the new economy, markets for know-how and intangible assets. *Essays on Technology Management and Policy*: 47-75.

Teece, D. J. 1986. Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy. *Research Policy*, 15(6): 285-305.

Teece, D. J., Pisano, G., & Shuen, A. 1997. Dynamic capabilities and strategic management. *Strategic Management Journal*, 18(7): 509-533.

Tornikoski, E. T., & Newbert, S. L. 2007. Exploring the determinants of organizational emergence: A legitimacy perspective. *Journal of Business Venturing*, 22(2): 311-335.

Townsend, D. M., Busenitz, L. W., & Arthurs, J. D. 2010. To start or not to start: Outcome and ability expectations in the decision to start a new venture. *Journal of Business Venturing*, 25(2): 192-202.

Tumasjan, A., Welpe, I., & Spörrle, M. 2012. Easy Now, Desirable Later: The Moderating Role of Temporal Distance in Opportunity Evaluation and Exploitation. *Entrepreneurship Theory and Practice*: no-no.

Tyszka, T., Cieślik, J., Domurat, A., & Macko, A. 2011. Motivation, self-efficacy, and risk attitudes among entrepreneurs during transition to a market economy. *Journal of Socio-Economics*, 40(2): 124-131.

Urban, B. 2010. Cognitions and motivations for new venture creation decisions: linking expert scripts to self-efficacy, a South African study. *International Journal of Human Resource Management*, 21(9): 1512-1530.

van Praag, C., & Versloot, P. 2007. What is the value of entrepreneurship? A review of recent research. *Small Business Economics*, 29(4): 351-382.

Venkataraman, S., Sarasvathy, S. D., Dew, N., & Forster, W. R. 2013. Of Narratives and Artifacts. *Academy of Management Review*, 38(1): 163-166.

Wang, S., Guidice, R. M., Tansky, J. W., & Wang, Z. M. 2010. When R&D spending is not enough: The critical role of culture when you really want to innovate. *Human Resource Management*, 49(4): 767-792.

Wayne, S. J., Shore, L. M., & Liden, R. C. 1997. Perceived Organizational Support and Leader-Member Exchange: A Social Exchange Perspective. *The Academy of Management Journal*, 40(1): 82-111.

Wiklund, J., & Shepherd, D. 2005. Entrepreneurial orientation and small business performance: a configurational approach. *Journal of Business Venturing*, 20(1): 71-91.

Zahra, S., & Dess, G. G. 2001. Entrepreneurship as a Field of Research: Encouraging Dialogue and Debate. *The Academy of Management Review*, 26(1): 8-10.

Zahra, S. A., & Covin, J. G. 1995. Contextual influences on the corporate entrepreneurship-performance relationship: A longitudinal analysis. *Journal of Business Venturing*, 10(1): 43-58.

Zahra, S. A., Neubaum, D. O., & El-Hagrassey, G. M. 2002. Competitive Analysis and New Venture Performance: Understanding the Impact of Strategic Uncertainty and Venture Origin*. *Entrepreneurship Theory and Practice*, 27(1): 1-28.

Chapter 3 : Intrapreneurs' Motivation to Start New Ventures

Introduction

Scholars following the dispositional approach to entrepreneurship have long been interested in exploring the influences of individual motivations on new venture emergence. The Society of Associated Researchers for International Entrepreneurship [SARIE] has published several studies (Alänge & Scheinberg, 1988; Johnson, 1990; Scheinberg & MacMillan, 1988) reporting systematic differences between entrepreneurs' motivations and non-entrepreneurs' motivations. This finding has been challenged by subsequent studies (Carter, Gartner, & Shaver, 2004; Carter, Gartner, Shaver, & Gatewood, 2003) and reaffirmed by two meta-analyses (Collins, Hanges, & Locke, 2004; Stewart & Roth, 2007). Despite continued theorizing regarding the role of individual motivations in start-up behaviors (Dunkelberg, Moore, Scott, & Stull, 2013; Hansemark, 2003; Kim, Aldrich, & Keister, 2006) our present state of knowledge about their impact on new venture emergence remains inconclusive.

An important strand of the motivation literature in entrepreneurship relates to the initial start-up efforts of entrepreneurs. The literature specifically focuses on "nascent entrepreneurs", who are in the process of trying to set up a new venture (Gatewood, Shaver, & Gartner, 1995; Reynolds, 1997). The literature differentiates between various types of individual motivations. Their plurality, extending beyond pure monetary motivations, can be traced to Schumpeter mentioning the "joy of creation" and Knight elaborating on the "satisfaction of being one's own boss" (Knight, 1921; Schumpeter, 1934). More recent research on nascent entrepreneurs repeatedly mentions the following

motivations: (1) financial, (2) recognition, (3) independence, and (4) role models (Carter et al., 2004; Carter et al., 2003). This limited number of motivations reflects a widespread view that a few motivations "lie behind the much larger number of articulated reasons given by entrepreneurs" (Dunkelberg, 2013, pg. 226). Moreover, the set of the four most popular motivations (called "core motivations" hereafter) is comprehensive. It encompasses both intrinsic and extrinsic motivations (Ryan & Deci, 2000). The core motivations also include aspects of outside recognition, personal enjoyment and monetary compensation – thereby covering almost the entire theoretical spectrum of the Work Preference Inventory (Amabile, Hill, Hennessey, & Thige, 1994).

While scholars have systematically analyzed the impact of these motivations for entrepreneurs, the same is not the case for intrapreneurs, also commonly referred to as "corporate entrepreneurs". Intrapreneurs are defined as individuals who initiate a new venture for their employer (Antoncic & Hisrich, 2001; Burgelman, 1983; Marvel, Griffin, Hebda, & Vojak, 2007; Pinchot, 1985). Conservative estimates show that individual intrapreneurs account for approximately 22 percent of all new venture start-up efforts (Parker, 2011). Actual numbers might be even higher, due to the difficulty of observing intrapreneurs inside organizations (Kacperczyk, 2012). Researchers have long been interested in identifying the features of corporate environments, which are conducive to intrapreneurs (Dess et al., 2003; Zahra, Jennings, & Kuratko, 1999). Several recent studies claim that firms largely depend on the motivations of prospective intrapreneurs to lead corporate ventures (Monsen, Patzelt, & Saxton, 2010) and that intrapreneurs' individual intrinsic motivations are an essential ingredient of successful intrapreneurship (Marvel et al, 2007).

Despite the interest in discovering what organizations should do to encourage intrapreneurship, we know little about how the various aforementioned motivations influence intrapreneurship. This research gap is puzzling given both the extensive literature on motivations of entrepreneurs and the well-known importance of intrapreneurship for established companies (Antoncic & Hisrich, 2001; Sharma & Chrisman, 1999; Zahra & Covin, 1995). The following outlines two important reasons why a better understanding of intrapreneurs' motivations will be of direct interest to managers and scholars.

First, managers might be better able to identify suitable candidates for intrapreneurship among their workforce if they understand how core motivations influence intrapreneurs' choice to develop a new venture for their employer. Managers need to identify prospective candidates for intrapreneurship, a task we refer to as "organizational selection". At Shell, for example, managers follow strict selection criteria that combine aspects about the business opportunity with aspects about the individual applicant to identify the most able and motivated employees (Davis, 1999). To the extent that individual venturing motivations inform the organizational selection of intrapreneurs, our findings might assist corporate managers keen to retain prospective intrapreneurs. This would be in contrast to employees quitting to found their own start-ups (Anton & Yao, 1995; Klepper & Sleeper, 2005; Klepper & Thompson, 2010). Specific insights into which core motivations are important to intrapreneurs might also help in designing work environments that better match individual motivations with organizational goals. These changes may potentially lead to higher retention rates of intrapreneurs.

Second, the present essay can clarify our understanding of motivations in entrepreneurship research. At present there seems to be a disjunction between what intrapreneurs say motivates them and what Human Resource professionals believe motivates them (Marvel et al., 2007). Our research brings new evidence to bear on intrapreneurs' motivations while making a clear distinction between intrapreneurs and entrepreneurs. Although these are known to be two distinct groups, prior research has not always distinguished carefully between them (Parker, 2011). Furthermore, when scholars combine disparate groups in a data analysis, there is a risk of masking patterns in the data relating to the separate groups, leading to "aggregation bias" (Zellner, 1962) and inappropriate inferences. By separating nascent entrepreneurs from intrapreneurs, the essay attempts to measure the motivations of each group more accurately.

The study's main purpose is to advance our understanding of how individual core motivations affect the likelihood of intrapreneurs to start a new venture for their employer. To achieve this aim, we first develop a theoretical framework which integrates theories of occupational choice (Kolvereid, 1996a, b; Kolvereid & Isaksen, 2006; Parker, 2011) with theories of Human Resource Management (HRM) selection (Gerstein & Reisman, 1983; Hayton, 2005; Schmelter, Mauer, Börsch, & Brettel, 2010). Occupational choice theories have used motivation to explain empirically the individual choice to take up entrepreneurship or stay in paid employment (Kolvereid, 1996a; Taylor, 1996). For the purpose of this essay, we draw on these theories to explain an individual's choice to engage in any kind of start-up behavior, either as an entrepreneur or intrapreneur. This choice is called "individual selection" into venturing. The HRM literature in contrast emphasizes "organizational selection" based on the notion of person-job fit and person-

organization fit (Kristof-Brown, 2000; Wright & Boswell, 2002; Wright & Snell, 1998). The paper draws on this literature with respect to the research proposition that the fit between organizational goals and individual motivations serves as an important criterion in the organizational selection of prospective intrapreneurs.

The integration of these two literatures allows for the creation of a model to illustrate the influence of core motivations in terms of two simultaneous selection processes. Specifically, the essay proposes that core motivations influence both the individual choice to attempt any sort of start-up as well as the organizational selection of prospective intrapreneurs by corporate managers. The essay generates testable hypotheses about the effects of core motivations on (a) individuals' likelihood to start any type of venture, and conditional on that, (b) individuals' likelihood to venture together with an employer. This setup of two simultaneous equations is crucial to address selection biases that might have affected previous studies, as shown by Parker (2011). The setup of two simultaneous equations is particularly relevant because the choice to become an intrapreneur is conditional on the general choice to start any new venture. The essay then employs a nationally representative dataset inclusive of several sets of control variables to test these hypotheses. This methodology allows different motivations to be more or less influential in either of the two equations. This means the same individual motivation can be more influential for the individual selection to start any sort of new venture than for the decision to start a new venture as an intrapreneur or vice versa. This leads to our research proposition that the individual-level approach to intrapreneurship taken by this essay has the potential to enrich the extensive corporate entrepreneurship literature. While that literature acknowledges the importance of individual actors, it has to date

focused largely on decision-making by middle-level managers tasked with identifying new venture opportunities (Hornsby, Kuratko, & Zahra, 2002; Kanter, 1985; Kuratko, Montagno, & Hornsby, 1990). Our research contributes to the corporate venturing literature by augmenting analysis of corporate interests with consideration of individual interests known to affect the strategic renewal of incumbents (Floyd & Wooldridge, 1999).

Theoretical Development

Core Individual Motivations

An impressive number of empirical and theoretical studies discuss entrepreneurs' motivations which affect their likelihood of starting a new venture. This section provides a brief overview of the historical development of the motivation literature in entrepreneurship to explain our focus on the four core individual motivations we analyze.

Research on motivation in entrepreneurship dates back to several influential papers written by Scheinberg and the SARIE colleagues (Alänge & Scheinberg, 1988; Scheinberg & MacMillan, 1988). Scheinberg's research effort developed the first motivation scales for entrepreneurs in close accordance with Friberg's (1976) study on work incentives. The theoretical underpinning of these studies drew mostly on studies from sociology and psychology. Scheinberg and colleagues considered financial incentives that motivate workers (Friberg, 1976); a desire for independence (Hofstede, 1980); the need for social approval (Maslow, 1943; Vroom, 1976); and the need for avoidance of unpleasant situations (Hagen, 1962; Shapero, 1975). Scheinberg and

MacMillan's (1988) factor analysis was based on a sample of 1402 independent business owners across 11 countries. The factor analysis grouped 38 individual items into six motivation scales: (1) Need for Approval, (2) Perceived Instrumentality of Wealth, (3) Degree of Communitarianism, (4) Need for Personal Development, (5) Need for Independence, and (6) Need for escape.

Researchers continued to investigate the motivations of entrepreneurs (Birley & Westhead, 1994; Gatewood et al., 1995; Kolvereid, 1992; Kuratko, Hornsby, & Naffziger, 1997; Shane, Kolvereid, & Westhead, 1991). In an extension of the SARIE model including gender and nationality, Shane and colleagues (1991) reduced the original 38 SARIE items to 21 and added two items about tax considerations. They hoped to improve the response rate in their own study of entrepreneurs in Great Britain, New Zealand, and Norway. With a smaller sample and fewer respondents than SARIE, Shane and colleagues identified four dominant factors that accounted for the majority of entrepreneurs' motivations: (1) recognition, (2) independence, (3) learning, and (4) role models. Kolvereid (1992) developed new scales independent of the SARIE efforts to study how motivations relate to growth aspirations. Kolvereid surveyed 250 Norwegian entrepreneurs whose ventures were at least 4 years old. From their answers he deduced seven motivation scales: (1) independence, (2) welfare, (3) role models, (4) status, (5) tax optimization, (6) personal achievement, and (7) economic opportunity. Kolvereid (1992) concluded that only a few of these motivations (mainly achievement and welfare) were loosely associated with venture growth aspirations. Birley and Westhead (1994), to give another example, employed the set-up of the SARIE studies for their survey of 405 independent UK managing business owners. They investigated differences in motivations

and tested whether such differences could help to explain subsequent venture performance. They reduced 22 items into six components, out of which five matched the SARIE scales. Birley and Westhead's taxonomy of important motivations in the context of start-ups included (1) the need for approval, (2) independence, (3) personal development, (4) welfare considerations, and (5) perceived instrumentality of wealth (1994). The two scales that were not included in the SARIE studies before were (6) tax reductions and (7) following a role model.

After the first conceptual groundwork, motivation studies became more analytical. Gatewood and her colleagues (Gatewood et al., 1995) presented the first longitudinal study of motivations relevant for nascent entrepreneurs. Gatewood's study differed from previous ones because it asked prospective questions (instead of retrospective questions) to 147 participants in a US business development center who were in the process of starting their own venture. Following up with 47 women and 95 men after about 12 months, Gatewood and her team found that female prospective entrepreneurs with intrinsic motivations and male prospective entrepreneurs with extrinsic motivations were more likely to sell their product or service. Amabile and colleagues (1993) define intrinsic (or internal) motivation as stemming from the value the work itself has for the individual. Amabile and colleagues define extrinsic (or external) motivation as coming from the desire to obtain the consequences associated with a certain outcome that is not part of the work itself.

A "post hoc parsimonious synthesis of the SARIE studies" (pg. 19), conducted by Carter and colleagues (Carter et al., 2003) stressed the importance of five factors identified in prior empirical work: (1) Financial Reasons, (2) Independence, (3)

Recognition, (4) Role Models, and (5) Innovation. The authors found that those five motivations were congruent with the previous studies and could capture the majority of variance between subjects. Their work provides an overview of the historical conversion of important motivations until 2003. This convergence coincides with the availability of new data from the first Panel Study of Entrepreneurial Dynamics (PSED-I) that specifically included 18 items on individuals' motivations. This new data enabled researchers to examine the motivations of "nascent entrepreneurs" (Carter et al., 2004; Edelman, Brush, Manolova, & Greene, 2010). The studies based on the PSED data echoed the general findings of their earlier counterparts, namely that entrepreneurs go into business for a variety of reasons, which one can often summarize within a few categories. Presumably following that realization, scholars only asked 14 motivation items in PSED-II, the follow-up survey to PSED-I. The researchers dropped four items regarding personal development and innovation as motivations from the PSED-II questionnaire.

In summary, the literature shows that entrepreneurs start and operate their ventures for a variety of reasons. Motivations such as financial returns, independence, recognition, and role models have been developed over a long empirical timespan that has refined their measurement and attained increasing parsimony (Cassar, 2007). Thus, evolving empirical practice and the most recent sample surveys have brought forward four core motivation scales: (1) financial motivation, (2) independence, (3) social recognition, and (4) role models. These four individual motivations include social as well as individual aspects and intrinsic as well as extrinsic aspects (Amabile et al., 1994).

Within the motivation literature, the dominant research approach has sought to identify and examine which motivations are most important to entrepreneurs and which ones differentiate entrepreneurs from non-entrepreneurs. The literature review reveals that intrapreneurs' motivation has not been studied to the same extent. The motivation literature reviewed above has sometimes combined all business starters and failed to differentiate between entrepreneurs and intrapreneurs. One area of literature that specifically focusses on the decision between different work options is the theory of occupational choice. The following discussion examines this literature to review how various motivations have influenced theories of occupational choice for individuals.

Occupational Choice Theories

Occupational choice theories seek to explain how individuals choose between different potential occupations, most commonly entrepreneurship or paid-employment (Kolvereid, 1996a, b; Kolvereid & Isaksen, 2006; Parker, 1997, 2004, 2009). These theories identify the explanatory variables thought to affect the likelihood that an individual becomes an entrepreneur most directly.

Economists have focused on explanatory variables such as expected returns from entrepreneurship relative to paid employment, risk attitudes, and the monetary and psychic "costs" of entrepreneurship. Individuals are assumed to choose whichever occupation provides the larger net benefit across a variety of influential factors (see Parker, 2009, for an overview). In particular, financial incentives and higher anticipated incomes from entrepreneurship have been theorized and tested for their impact on the

occupational choice to become an entrepreneur (Naffziger, Hornsby, & Kuratko, 1994). Other salient explanatory variables include a desire for independence (Taylor, 1996); role models (Kolvereid, 1996b); and social status (Parker & Van Praag, 2010). Building on Blanchflower and Oswald (1990), Taylor (1996) for example found that the independence offered by entrepreneurship is very desirable to prospective entrants. Kolvereid (1996b) builds on a large history of empirical evidence that established the relationship between role models and the choice to become an entrepreneur (Matthews & Moser, 1995; Scherer, Adams, Carley, & Wiebe, 1989; Scott & Twomey, 1988). Kolvereid specifies that role models play a particular role in forming entrepreneurial intentions (Kolvereid, 1996b), which in turn are most indicative of the occupational choice to become an entrepreneur (Krueger & Carsrud, 1993). Parker and Van Praag (2010) argue that entrepreneurs create externalities for others by increasing or decreasing the desired social status associated with entrepreneurship.

Given the perceived higher income, increased independence, and greater social status that entrepreneurship promises, Douglas and Shepherd (2000) suggest that all employees have an incentive to be self-employed if they can assemble the same resources as their employer. Consequently, organizations should invest in uncovering their (prospective) employees' attitudes regarding self-employment (Douglas & Shepherd, 2000). For example, employers could investigate such influential motives as finances, independence, status, and role models. Knowledge about these motivations helps in designing compensation agreements that consider the various individual motivations at play in the occupational choice. In a follow up study, Levesque, Douglas, and Shepherd (2002) loosened the assumption of fixed motivations, and acknowledged the possibility

that some motivations, especially those relating to financial returns and independence, might change over time.

In summary, occupational choice theories propose a range of variables that influence the choice to become an entrepreneur. For the purpose of this essay, the literature reflects two important findings. First, selection into new venture creation is linked to the availability of role models and to how important financial motives, status, and independence are for the individual. Second, theories of occupational choice have largely focused on individual motivations without considering many aspects of organizational influences, including Human Resource Management (HRM) practices. Organizational influences via HRM are the topic of the next few paragraphs.

Human Resource Management Selection Theories

Researchers used Human Resource Management (HRM) theories to study the entrepreneurial activities of employees (Kuratko, Ireland, Covin, & Hornsby, 2005; Schmelter et al., 2010; Schuler, 1986). Through the implementation of appropriate HRM practices and policies, an organization can systematically influence the degree of internal entrepreneurial activity (Schmelter et al., 2010). One of the most important HRM practices in this regard is staff selection (Gatewood, Feild, & Barrick, 2008) because highly competent and motivated people are important resources for any corporate project, corporate venturing included (Brazeal, 1993; Hayton, 2005; Hayton & Kelley, 2006). In addition, the selection process most likely takes place at the very beginning of a corporate career and/or at the beginning of a new venture project when the entrepreneurial team is

constructed. Since selection of individuals chronologically precedes the actions that these selected individuals carry out as part of the organization, the influence of selection should carry forward through the individuals' activities. It is for these reasons that HRM selection practices have a long-lasting and systematic effect on organizations and new venture creation.

In the HRM literature, staff selection is based on the concepts of person-job fit and person-organization fit (Kristof-Brown, 2000; Wright & Boswell, 2002; Wright & Snell, 1998). To assess person-job fit, recruiters evaluate individuals' knowledge, skills, and abilities; whereas for person-organization fit, individuals' values, goals, and personality traits play a greater role (Kristof-Brown, 2000). It has also been shown that job applicants are more likely to join and remain in an organization and enjoy high job satisfaction if the congruence between their own and organizational goals and values is strong (Cable & Judge, 1996; Vancouver & Schmitt, 1991). In this context, the attraction-selection-attrition framework of Schneider, Goldstein, and Smith (1995) suggests that goal congruence is an indispensable part of person-organization fit. According to the attraction-selection-attrition framework, organizations attract individuals (or intrapreneurs in this essay), whose personal goals are in alignment with organizational goals.

The corporate entrepreneurship literature has highlighted the role of middle level managers in the organizational selection process of prospective intrapreneurs and their ideas (Burgelman, 1983; Kuratko et al., 2005). Middle level managers are the corporate agents that implement HRM practices as they recruit promising candidates into corporate ventures. They specifically integrate corporate guidelines with promising ideas surfacing

from lower levels of the organization (King, Fowler, & Zeithaml, 2001). According to 246 interviews of middle managers conducted by Kelley and colleagues (Kelley, O'Connor, Neck, & Peters, 2011), the organizational selection of intrapreneurs (or 'project leaders' as they refer to them) takes into account previous performance and skill sets. Middle level managers also try to balance the intrapreneurs' need for autonomy and recognition with their own accountability for the project (Kelley et al., 2011).

Values, goals, and motivations of individuals are therefore important organizational selection criteria. The majority of the HRM research has taken place in the context of large established organizations (Hayton, 2005). Research into smaller and younger organizations is an emerging focus (Schmelter et al., 2010). By integrating the findings of the HRM literature and the research on occupational choice decisions of prospective intrapreneurs, this essay attempts to draw upon the growing body of scholarly work in HRM in the context of new venture creation inside organizations. The paper's analysis attempts to answer several calls for additional investigation in this area (Hayton, 2005; Lumpkin & Dess, 1996; Messersmith & Guthrie, 2010).

Framework and Hypotheses

Drawing on earlier discussion of individual-level theories of occupational choice and human resource selection by organizations, this section analyzes two salient types of selection. The two types of selection are the decision to become a nascent venture and the decision to become an intrapreneur rather than an entrepreneur: *self-selection* and *organizational selection*. The essay proposes that many individuals have an occupational choice to self-select into nascent venturing (as opposed to continued employment or

unemployment). Those that chose to become involved with starting a new venture become nascent venturers (NVs). They immediately face a second choice: do they start their venture as independent entrepreneurs or together with an existing company as intrapreneurs?

In the case of s*elf-selection*, individuals face the occupational choice of deciding whether they would like to become NVs, i.e. start any sort of venture at all (Parker, 2009), salaried employees or unemployed. The motivation literature suggests that prominent factors influencing this choice include: 1) financial factors, 2) a desire for autonomy, 3) a need for social recognition, and 4) influences from role models. The economics-based human capital literature (Becker, 1964) suggests that individuals are willing to trade off lower income from an occupation in return for an attractive non-financial compensating differential, such as greater autonomy at work which appeals to independence-minded individuals (Lange, 2012). A compensation differential is a form of additional payment or utility for the individual to entice him or her to take an otherwise undesirable position. Even though actual returns in venturing might be low, if an individual is highly motivated by independence this might encourage him or her to self-select into nascent venturing since this type of occupational choice is associated with greater independence (Taylor, 1996).

The second type of selection is *organizational-selection*. This type of decision is no longer only an individual decision, but also reflects organizational choices (Kelley et al., 2011). According to prior literature (Davis, 1999; Kanter, 1985), managers are tasked with the selection of suitable candidates for intrapreneurship and identify motivations as part of their screening process. An example might clarify the difference between self-

selection and organizational selection. When Art Fry had the idea for the Post-it note® and decided to pursue this idea, he became a nascent venturer. At this point he self-selected into trying to start a new venture. His decision to to develop his idea with his employer, 3M, meant he chose the path of a NI. Fry's choice also made him subject to 3M's organizational selection. Managers at 3M screened his idea for a new venture and his suitability to execute it. They selected Fry and his Post-it note® for corporate support. Had Fry wanted to develop this idea independently, he would have become a nascent entrepreneur (NE). However, Fry chose to develop the Post-it note® together with 3M and became one of the best-known intrapreneurs.

This essay proposes that the same core individual motivations influence both individual selection into starting any sort of new venture (in line with occupational choice theories) and the organizational selection of suitable intrapreneurs by corporate managers (in line with HRM selection theories). For example, a desire for autonomy is as an important determinant of individuals' selection (Parker, 2009) as well as organizational selection within firms (De Clercq et al, 2011). The following analysis outlines links between the four types of motivation introduced above and how they a) relate to the general start-up decision and b) how they might play a different role in the organizational selection of NIs.

Financial Motivation focuses on the following aspects: the desire to attain financial security, earn high incomes, and accumulate high levels of wealth. Commencing with self-selection on financial motives into any sort of nascent venturing, evidence suggests that venturing mostly comes with a financial penalty in terms of income (Hamilton, 2000) and return on wealth (Moskowitz & Vissing-Jorgensen, 2002). One

might therefore expect that financially motivated rational decision makers would be more likely to select paid-employment than to start their own venture. Also, self-employment is known to generate riskier incomes than paid-employment (Parker, 1997). Hence, entrepreneurial individuals within organizations looking for an occupation offering financial security would presumably be more likely to remain in paid-employment than engage in any sort of start-up (Parker, Belghitar, & Barmby, 2005). Individuals who decide to become NVs of either sort are therefore likely to accept the potential financial penalty in return for the compensating differential of the fulfillment of some other motivation, such as greater independence. Understood like this, self-selection via financial motives could therefore favor paid-employment rather than any kind of nascent venturing:

Hypothesis 1a: The more importance an individual assigns to financial motives, the less likely he or she is to self-select into NV.

Although Hypothesis 1 implies that financially motivated people are less likely to become NVs, several individuals that consider financial motivation important still select to become NVs. This seemingly contradictory choice corresponds to the various reasons and motivations relevant to this decision. In the following paragraph we consider how financial motivations can further be of importance for those individuals that have self-selected into NV, despite high importance of financial motives. That is, we argue for the role of financial motivations on the venturing mode choice, conditional on self-selection into NV.

From the organizational selection perspective, one might expect a slightly different pattern to emerge regarding the importance of individual financial motivations as we have argued from the individual self-selection perspective. First, from an organizational selection perspective, corporate managers require employees who are highly financially motivated to run intrapreneurial ventures if the company itself is seeking financial goals. The person-organization fit on economic variables plays a major role in the HRM selection strategies (Kristof-Brown, 2000; Wright & Boswell, 2002). Accordingly, for-profit corporations incentivize individuals by offering performance-related compensation contracts (Jones & Butler, 1992). Companies design these contracts explicitly to appeal to financially motivated workers. Second, strong financial motivation helps intrapreneurial "initiative selling" to convince senior managers of profitability and that the promising candidate is indeed suitable to run an intrapreneurial venture (De Clercq, Castañer, & Belausteguigoitia, 2011). Third, a desire for financial security can be expected to attract workers who want to share in the profit from intrapreneurial success but who also value the corporate safety net if their venture fails (Shepherd, Covin, & Kuratko, 2009). It is furthermore possible that organizational involvement might reduce an individual's concern to miss out on a big opportunity that might otherwise not be attainable. This type of financial motivation by individuals, recognizing the potential to increase chances of superior rewards (instead of increasing potential returns, while paying less attention to the probabilities of their attainment) could also be an attractive selection mechanism for the organization. In particular if the individual has already realized the advantages of collaborating with the employer, it might make them less

likely to leave in the future. The same kind of organizational selection criterion is absent for nascent entrepreneurs:

Hypothesis 1b: The more importance a NV assigns to financial motives, the more likely he or she is to be selected into NI.

An *Independence Motivation* considers salient non-pecuniary factors, namely greater independence in life and flexibility of working arrangements. The body of research relating to this particular motivation shows that both employees and entrepreneurs value independence and autonomy (Plant & Ren, 2010). Freedom from subordination to authority seems to be a widely shared human trait crossing occupational boundaries. However, venturing is unusual in offering such high levels of autonomy in practice (Lange, 2012; Van Gelderen & Jansen, 2006). People motivated by independent decision-making find this freedom in the venturing activity. NVs decide when to work, where to work, with whom to work, and on what to work with considerable less influence from others. Another argument why independence is linked to venturing in general is the satisfaction stemming from realizing ones' own dreams. Towards such arguments, recent evidence by Reynolds and Curtin (2011) suggests that venturing provides many opportunities for individuals to start independent "hobby" businesses. Through these independent hobby businesses, the nascent venturers often do not pursue primarily financial motives. Instead, the freedom to follow a passion is the main incentive. These considerations lead to the hypothesis:

Hypothesis 2a: The more importance an individual assigns to independence motives, the more likely he or she is to self-select into NV.

The organizational-selection perspective suggests that independence motivation might also influence the organizational selection of NIs. From the perspective of the organizational selection environment, an individual with high independence motivation might be willing to accept a lower salary in return for greater autonomy. On the other hand, this individual is unlikely to be abiding by corporate hierarchy. This is because such individuals may pose a risk to the coherent organizational structure of the enterprise ("loose cannons") and stir up negative emotions by disrupting established lines of command with their ideas for change (Kotter, 1995). Managers may therefore encourage highly independent individual to leave the organization. Then they can pursue a new business outside of the confines of the organization.

Hypothesis 2b: The more importance a NV assigns to independence, the less likely he or she is to be selected into NI.

Recognition Motives describe another compensating differential related to one's work. This factor comprises the desires to achieve and to be recognized for one's achievements, to be respected by one's friends and colleagues, and to attain a higher position in society (i.e. social status). Jobs generally differ in the ease with which they enable workers to satisfy their internal "need for achievement" (McClelland, 1961; McClelland, 1965). NVs seem to care less about others' opinions regarding their occupational choice (Carter et al., 2003). This is because personal reasons matter more

for NVs than societal recognition. Davidsson's "rebel theory" of entrepreneurship (Davidsson, 2006) is consistent with this argument. Davidsson's theory states that NVs seek to be different and start new businesses for themselves rather than conforming to others' ideals.

Hypothesis 3a: The more an individual values recognition by others, the less likely he or she is to choose to become a NV.

Despite the arguments suggesting Hypothesis 3a, some individuals valuing recognition by others still chose to become NVs. Compared to non-NVs, some NVs, particular independent entrepreneurs, enjoy high external visibility and social status (Parker & Van Praag, 2010). Organizations might be able to capitalize on these known status effects. By identifying employees who are highly motivated by social recognition, managers might be able to exploit a strong incentive among NIs as a valuable compensating differential. For instance, a resource-constrained firm desiring to undertake an intrapreneurial project but unable to offer generous financial incentives may nevertheless attract an intrapreneur into this role. This may be possible if the intrapreneur is strongly motivated by social recognition. Prospective NIs are likely to enjoy the social recognition amongst their former peers that comes with the new position (Biniari, 2012). Some scholars have assumed that social recognition also motivates NEs (Parker & van Praag, 2010). However, other scholars suggested that social recognition could be relatively less important for NEs when weighed against personal reasons or the desire to be different (Davidsson, 2006). As discussed, social recognition for NIs might be more important relative to their other venturing motivations. Organizations can therefore

capitalize on this NI motivation because the corporate environment includes peers who would notice the NI. Thus, we hypothesize that:

Hypothesis 3b: The more importance a NV assigns to recognition by others, the more likely he or she is to be selected into NI.

Role Models predispose individuals to select into occupations associated with an inspiring figure or influential mentor (Scherer et al., 1989). Role models are known to be important in informing career choices (Miers, Rickaby, & Pollard, 2007), including in family businesses (Mungai and Velamuri, 2011). While comparative studies on such outcomes are rare, Carter et al. (2003) found evidence that, if anything, role models are more important for non-entrepreneurs than for NVs. They explained these differences in terms of non-entrepreneurs having greater needs for public validation of their behavior, and caring more about others' opinions, than NVs do (Carter et al., 2003). This paper adds to Carter et al.'s (2003) research that sentiments of neglect, especially of entrepreneurial parents investing more time into their business than their family, might give children a negative impression of the venturing activity. Following this logic, this essay suggests that:

Hypothesis 4a: The more importance an individual assigns to role models, the less likely he or she is to self-select into becoming a NV.

We analyze the influence of role models on the group of individuals that despite important role model motivations still decide to become NVs. From the organizational

perspective, favorable role models appear to predispose individuals to select into particular occupations in paid employment (Dryler, 1998). One advantage of role models inside the corporation is that aspiring NIs likely have access to them. Conversely, the manager selecting prospective NIs is likely to be familiar with the NI's role model as well. If a role model has been successful (possibly having been an intrapreneur himself in the past) he earned the respect of senior managers and prospective NIs alike. Managers may then have greater confidence in an individual becoming a NI if that individual is motivated to follow such a respected role model from within the corporation. In this situation the fact that role models inside organizations are accessible is more important than the role model's success. This is because lessons learned from unsuccessful ventures inform future ventures (Cannon & Edmondson, 2005). If managers know the role model, added security may come from the impression to have another ally in steering the prospective new intrapreneurial venture. It reduces uncertainty for the organization to know what role model a prospective NI aspires to. Hence, we expect organizational selection to consider role model motivation by prospective NIs favorably:

Hypothesis 4b: The more importance a NV assigns to role models, the more likely he or she is to be selected into NI.

Methods

Data and Sample

In order to test the aforementioned hypotheses, we need data on the motivations of NEs and NIs as well as of a non-venturing control group. The Panel Study of Entrepreneurial Dynamics (PSED) provides such data. The PSED consists of two similar

longitudinal datasets: PSED-I and PSED-II. Both datasets measure business creation on a large scale, initially screening a representative sample of the entire US American adult population. The PSED studies identify individuals actively involved in the venturing process (NVs). Trained interviewers asked the NVs annual follow-up questions. In the first collection of data, PSED-I, interviews occurred between 1998 and 2003. The second phase of data collection, PSED-II took place from October 2005 to December 2011. Total data collected from PSED-I resulted in 31,261 screener interviews with Americans over the age of 18 years old. PSED-II added another 31,845 screener interviews. The organizers of the PSED-I and PSED-II studies weighted both datasets by sex, race, age, and education, based on the latest available US Census data. The purpose of weighting the datasets was to make them nationally representative. The following analyses use these weights.

The PSED-I also included a control group of non-NV employees who answered the same questions as NVs, including motivation questions. The PSED-I comprised four waves of questioning with each wave identified as 'Wave 1', 'Wave 2' etc. The PSED-II consisted of six waves of questioning with the waves identified as 'Wave A', 'Wave B', etc. The last wave of questioning from the PSED-II concluded in December 2011. The screening interview and the four waves of PSED-I produced data on 1,261 individuals (830 nascent venturers and 431 members of a control group). The PSED-II efforts resulted in data on 1,214 nascent venturers. Over the course of these two projects, respondents provided data on approximately 6,000 variables in PSED-I and around 8,000 variables in PSED-II. One key difference between PSED-I and PSED-II is the inclusion

in PSED-I of a non-venturing control group. A complete description of the research design, the data, and methodology are available at www.psed.isr.umich.edu

The combined PSED-I and PSED-II databases constitute our sample for this study. We combined the PSED-I and PSED-II data in an effort to arrive at one consolidated dataset. This dataset spans venturing efforts over one decade. The detailed descriptions and amount of data enabled us to harmonize variable definitions. Following the definitions and operationalization explained below, we identify 2,044 individuals as nascent venturers (NVs) out of which 519 individuals are nascent intrapreneurs (NIs) and 1,511 are nascent entrepreneurs (NEs). One individual in PSED-I and 13 individuals in PSED-II reported to attempting to start a new venture, but failed to specify whether the attempt was as a NI or NE. Due to this lack of information, these 14 individuals were not included in the subsequent analyses. The control group of non-venturing individuals in the PSED-I contains 431 respondents.

Measures

The essay uses four motivation scales: (1) Financial, (2) Independence, (3) Social Recognition, and (4) Role Model. The essay then introduces the binary variables: Nascent Venturer (*NV*) and Nascent Intrapreneur (*NI*). We then describe several control variables included in the analyses.

As explained above, the *motivation scales* most widely used in comparative studies in entrepreneurship are (1) financial motivation, (2) recognition, (3) independence, and (4) role models (Carter et al., 2003; Dunkelberg et al., 2013; Shane et

al., 1991). The literature includes different combinations, extensions or additions to these four scales that researchers have applied and refined multiple times (Birley & Westhead, 1994; Shane et al., 1991). Kuratko, Hornsby, and Naffziger (1997) demonstrated that entrepreneurs are motivated to start and continue a venture by extrinsic rewards, intrinsic rewards, independence and family security. Carter and colleagues (2003) build upon the four scales and the concepts persist, although in different variations and sometimes under different names. In choosing this set of four motivation scales, we follow the established literature and build on the scale development of previous research that used the same theoretical grounding (Carter et al., 2003; Dunkelberg et al., 2013; Edelman et al., 2010). This allows for verification and higher reliability of the scales we use while making our findings more directly applicable to earlier studies. Carter et al (2003) use six motivation scales of the PSED-I. Although the PSED-II database is newer and larger than PSED-I, it consists of fewer questions regarding motivation. The PSED-II nevertheless allows us to reconstruct and cross validate the four main scales with the previous measures. Our analysis illustrates that the established scales can be replicated with the combined PSED-I and PSED-II data. The four scales together explain 73% of total variation in the motivation variables of this study. In our application, the four scales further show comparably high internal validity as well as sufficient convergent and discriminate validity. The following discussion briefly defines and outlines the four scales.

Financial Motivation consists of three Likert type questions (1=not at all, 5=very much) in close proximity to the Work Preference Inventory and direct complementarity to earlier studies using either PSED-I or PSED-II alone. The three questions asked: “To what extent is the following reason important to you in establishing this new business: (1)

to earn a larger personal income, (2) to build great wealth, (3) to have financial security. The measure follows the legacy of Scheinberg and MacMillan (1988) and Birley and Westhead (1994) both of whom have conceptualized financial success similarly and have shown it to be an important motivator in early venturing endeavors. We found factor loadings for this measure at the .76 level and higher and Cronbach's alpha was .79.

Independence Motivation combines two questions that relate to the extent to which respondents rated the importance of (1) greater flexibility in life and (2) the freedom to adapt the work approach. The independence scale explains how far a NI or NE values self-control and allocating his or her time. This factor is consistent with earlier conceptualizations used by Shane (2003). Factor loadings were at least .79 and Cronbach's alpha was .63.

Recognition Motivation combines the extent to which individuals are motivated by (1) achievement and recognition, (2) respect from friends and (3) a higher position in society. Recognition measures used before also include the external approval by friends and society (Birley & Westhead, 1994) as well as their recognition (Shane, Locke, & Collins, 2003). Loadings were at least .74 and Cronbach's alpha was .73.

Role Model Motivation is a single item scale that measures the importance of following the example of a person one admires. Earlier role model scales likewise capture an individual's desire to emulate the example of others (Carter et al., 2003). The factor loading for this measure was .93.

Following established PSED constructs, all NVs (which includes all NIs and NEs) are a) actively involved in the process of creating a new firm; b) have been engaged in

some start-up activity in the past 12 months; c) expect to own all or part of the new firm; and d) have not yet succeeded in starting the venture (Carter et al, 2003; Gartner et al, 2004; Davidsson, 2006). We constructed the variable *NV*, as a binary variable and assigned the value of "1" to an individual answering yes to all of the above questions. We assigned the value "0" to the 431 members of the control group. We refer to them as non-NVs.

*NI*s described themselves as involved in the process of setting up a new venture together with an employer. This differentiates them from NEs, who start a new venture independently of any organization. The PSED questionnaires capture this difference in the question: 'Are you, alone or with others, currently trying to start a new business or a new venture for your employer, an effort that is part of your normal work?' Our binary variable *NI* registers a total of 519 individuals who answered this question positively and accordingly were assigned the value *NI*=1. The other 1511 individuals who did not positively answer this question were classified as NEs and received the value *NI*=0. Table 1 provides an overview.

Table 1 Sample Overview – Essay 2

	NEs	NIs	Total NVs	Control group
PSED-I	701	128	830	431
PSED-II	810	391	1214	-
Total	1511	519	2044	431

Control Variables. We controlled for a range of demographic and socio-demographic characteristics that the literature has shown to affect occupational choices among nascent venturers. Our control variables include: gender (Carter, 1997; Fischer,

Reuber, & Dyke, 1993; Gatewood et al., 1995), age (Delmar & Davidsson, 2000; Reynolds, 1997) education (Bates, 1995; Rotefoss & Kolvereid, 2005); various kinds of work experience (Parker, 2011); income; and some demographic characteristics. Table 2 below lists the control variables after the four core start-up motivations. Four dummy variables record *Age*, assigning the value of "1" to the age group (e.g. 18-24 years) to which the individual belongs. The age category of 55 years or older served as the base category. Similarly, three dummy variables reflect an individual's *Education*, assigning "1" to the highest level of education obtained. Not receiving a high school diploma was the base category. Gender was recorded as a binary variable recording *Female* as "1" and male as "0". *Household Income* measures annual household income in US Dollars. We applied a logarithmic scale to deflate the range of values in our analysis. *Industry Specific Experience*, *General Work Experience*, and *Years as Supervisor* all record the number of years an individual has gathered such experience. *Household Head*, being *Married*, and *Working Fulltime* all record an individual's socio-demographic status in a binary fashion assigning the value of "1" if he or she answered affirmative to these questions or "0" otherwise. Finally, *Entrepreneurial Parents* records in a binary way if the individual's parents ever owned or operated their own business, "1" = yes and "0".

Table 2 Descriptive Statistics – Essay 2

	MEAN		**N**	**p**	**MEAN**		**N**	**p**
	NV	non-NV			NI	NE		
Financial Motivation	3.53	4.03	2103	0.00	3.61	3.51	1750	0.08
Independence Motivation	3.89	4.20	2105	0.00	3.83	3.91	1752	0.16
Recognition Motivation	2.28	3.44	2103	0.00	2.39	2.25	1749	0.02
Role Model Motivation	2.16	3.15	2104	0.00	2.33	2.10	1752	0.00
Age_18_24	0.08	0.13	2449	0.00	0.13	0.07	2006	0.00
Age_25_34	0.22	0.23	2449	0.53	0.21	0.22	2006	0.64
Age_35_44	0.27	0.28	2449	0.57	0.27	0.27	2006	0.80

Age_45_54	0.26	0.20	2449	0.04	0.26	0.27	2006	0.70
Postgraduate Studies	0.13	0.09	2446	0.02	0.11	0.13	2003	0.37
College Degree	0.26	0.20	2446	0.02	0.23	0.27	2003	0.07
High School	0.20	0.22	2446	0.36	0.25	0.18	2003	0.00
Female	0.42	0.55	2474	0.00	0.32	0.45	2030	0.00
Household Income (ln)	10.80	10.54	2219	0.00	10.78	10.81	1831	0.36
Industry Specific Experience	9.52	13.64	2044	0.00	10.08	9.31	1601	0.20
General Work Experience	19.53	16.39	2445	0.00	18.57	19.87	2004	0.04
Years as Supervisor	9.95	7.00	2425	0.00	9.54	10.09	1997	0.27
Household Head	0.91	0.86	2471	0.00	0.90	0.92	2027	0.11
Married	0.54	0.47	2453	0.01	0.47	0.56	2010	0.00
Working Fulltime	0.64	0.63	2460	0.71	0.67	0.63	2017	0.18
Entrepreneurial Parents	0.52	0.42	2439	0.00	0.50	0.53	2002	0.26

Table 2 provides an overview and descriptive statistics of all of the variables used in this study, in aggregate for NVs and non-NVs, as well as separately for NIs and NEs. The *p*-values indicate some significant univariate differences between these groupings, for motivations as well as the control variables. For example, it is notable that NVs differ significantly from the control group of non-venturing individuals on all four core motivations. Two sources of motivation in particular seem to differ between NIs and NEs: recognition and role model. Moreover, our findings echo previous research that showed age affects NIs and NEs differently (Parker, 2011). In this regard, we found that individuals 18- 25 years old are overrepresented in the NI group compared to the NE group. The data also revealed that NVs have greater general work experience but less industry-specific experience on average. Specifically, NEs tend to have an average of 16 months more general (as opposed to specific) work experience than NIs. This finding is consistent with research suggesting the breadths of experience that leads to entrepreneurs as “jacks of all trades” (Lazear, 2005). In what follows, we estimate the effects of

individual venturing motivation and our control variables on the two selections to becoming an NI conditional on being a NV.

Empirical Model

Our aim is to estimate the effects of individual venturing motivation on organizational selection into NI or NE, conditional on self-selection into nascent venturing in general. Because values of *NI* can only be observed if *NV*=1; that is if the individual has opted to become a nascent venture, the appropriate empirical model is a bivariate probit model with sample selection:

Equation 1 Bivariate Probit Model with Covariance Structure - Essay 2

$$\mathrm{NV}_i = \alpha_0 + (X_i\, Y_i)\begin{pmatrix}\alpha_1\\ \alpha_2\end{pmatrix} + \epsilon_{1i}$$

$$\mathrm{NI}_i = \beta_0 + (Y_i\, Z_i)\begin{pmatrix}\beta_1\\ \beta_2\end{pmatrix} + \epsilon_{2i}$$

where

$$cov(\epsilon_{1i}, \epsilon_{2i}) = \sum = \begin{pmatrix}1\rho\\ \rho 1\end{pmatrix}.$$

We assume that the error terms ϵ_1 and ϵ_2 are jointly normally distributed, with means equal to zero, unit variances, and correlation coefficient ρ (Greene, 2003; Parker, 2011). To correctly identify the model, we also need a group of identifying variables X_i

that influence selection into NV without impacting selection between NI and NE. We propose the following variables for X_i: (1) being a household head, (2) being married, (3) working fulltime, and (4) having entrepreneurial parents. All of these variables may affect the desirability of venturing relative to paid employment (e.g. by securing greater access to resources needed for venturing) without any of them necessarily being more relevant for the type of venturing, i.e. NI or NE. We chose one of the four variables to just-identify the model and then included the remaining three in the NV equation, but not in the NI equation. We then tested the three over-identifying restrictions with a likelihood ratio test that would not reject the Null-Hypothesis of acceptable exclusion restrictions. Doing this for all four variables, replacing the just-identifier, rendered $\chi^2(4)$ ratio statistics ranging from 4.22 to 5.40, none of which are close to standard significance levels. Yet, testing the same variables in the NV equation produced significant results ($\chi^2(4)>12.07$). This finding suggests that we are justified in using these variables for identification.

We estimated the model using the method of Full Information Maximum Likelihood (FIML). FIML exploits the full data structure conditional on specification of the errors ($\varepsilon_{1i},\varepsilon_{2i}$) as bivariate normal with correlation coefficient ρ, so it is most efficient. Estimation was performed using STATA 11.0.

Table 3 reveals only modest pairwise correlations between the variables, suggesting that collinearity is not a problem in this study.

Table 3 Pearson Correlations - Essay 2

Pearson Correlations (2-tailed)

		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1) Nascent Intrapreneur (NI)	Corr	1										
	N	2030										
(2) Nascent Venturer (NV)	Corr	a	1									
	N	2030	2474									
(3) Finanical Motivation	Corr	.042	-.192**	1								
	N	1750	2103	2103								
(4) Independence Motivation	Corr	-.033	-.115**	.468**	1							
	N	1752	2105	2094	2105							
(5) Recognition Motivation	Corr	.056*	-.379**	.478**	.300**	1						
	N	1749	2103	2095	2095	2103						
(6) Role Model Motivation	Corr	.071**	-.258**	.291**	.219**	.491**	1					
	N	1752	2104	2095	2095	2095	2104					
(7) Age_18_24	Corr	.085**	-.064**	.102**	.054*	.177**	.109**	1				
	N	2006	2449	2084	2086	2084	2085	2449				
(8) Age_25_34	Corr	-.011	-.013	.156**	.112**	.074**	.033	-.171**	1			
	N	2006	2449	2084	2086	2084	2085	2449	2449			
(9) Age_35_44	Corr	-.006	-.011	.086**	.077**	.019	.040	-.195**	-.328**	1		
	N	2006	2449	2084	2086	2084	2085	2449	2449	2449		
(10) Age_45_54	Corr	-.009	.055**	-.119**	-.056*	-.139**	-.057**	-.186**	-.313**	-.357**	1	
	N	2006	2449	2084	2086	2084	2085	2449	2449	2449	2449	
(11) Postgraduate Studies	Corr	-.020	.044*	-.158**	-.102**	-.145**	-.086**	-.104**	-.105**	-.006	.065**	1
	N	2003	2446	2091	2093	2091	2093	2423	2423	2423	2423	2446
(12) College Degree	Corr	-.040	.047*	-.046*	.000	-.054*	-.030	-.106**	.032	.033	.016	-.212**
	N	2003	2446	2091	2093	2091	2093	2423	2423	2423	2423	2446
(13) High School	Corr	.076**	-.019	.048*	.002	.060**	.029	.078**	.022	-.033	-.010	-.185**
	N	2003	2446	2091	2093	2091	2093	2423	2423	2423	2423	2446
(14) Female	Corr	-.115**	-.104**	-.030	.089**	.012	-.002	-.053**	-.013	.057**	.001	-.031
	N	2030	2474	2103	2105	2103	2104	2449	2449	2449	2449	2446
(15) Household Income (ln)	Corr	-.021	.118**	-.082**	-.098**	-.158**	-.087**	-.132**	-.058**	.029	.076**	.236**
	N	1831	2219	1915	1916	1916	1915	2206	2206	2206	2206	2206
(16) Industry Specific Experience	Corr	.032	-.159**	-.038	-.039	.063**	.037	-.221**	-.232**	-.027	.174**	.093**
	N	1601	2044	1836	1836	1837	1836	2026	2026	2026	2026	2024
(17) General Work Experience	Corr	-.046*	.100**	-.186**	-.174**	-.178**	-.139**	-.412**	-.408**	-.066**	.287**	.136**
	N	2004	2445	2089	2091	2089	2090	2421	2421	2421	2421	2431
(18) Years as Supervisor	Corr	-.025	.118**	-.181**	-.165**	-.182**	-.141**	-.260**	-.297**	-.089**	.161**	.180**
	N	1997	2425	2076	2080	2076	2077	2401	2401	2401	2401	2411
(19) Household Head	Corr	-.036	.074**	-.062**	-.025	-.124**	-.102**	-.377**	-.043*	.098**	.122**	.077**
	N	2027	2471	2100	2102	2100	2101	2446	2446	2446	2446	2445
(20) Married	Corr	-.070**	.051*	-.071**	.004	-.153**	-.077**	-.225**	-.014	.052*	.072**	.063**
	N	2010	2453	2098	2101	2098	2099	2428	2428	2428	2428	2441
(21) Working Fulltime	Corr	.030	.007	.102**	.035	.001	.011	-.093**	.123**	.059**	.024	.056**
	N	2017	2460	2089	2091	2089	2090	2435	2435	2435	2435	2433
(22) Entrepreneurial Parents	Corr	-.025	.075**	-.034	.007	-.043*	.009	-.008	-.007	.032	-.016	-.004
	N	2002	2439	2089	2090	2089	2089	2414	2414	2414	2414	2425

a. Cannot be computed because at least one of the variables is constant.
*. Pearson Correlation is significant at the 0.05 level (2-tailed).
**. Pearson Correlation is significant at the 0.01 level (2-tailed).

Table 3 continues on next page

Pearson Correlations (2-tailed)

		(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
(12) College Degree	Corr	1										
	N	2446										
(13) High School	Corr	-.290**	1									
	N	2446	2446									
(14) Female	Corr	.046*	-.057**	1								
	N	2446	2446	2474								
(15) Household Income (ln)	Corr	.113**	-.122**	-.087**	1							
	N	2206	2206	2219	2219							
(16) Industry Specific Experience	Corr	.005	-.033	-.087**	.005	1						
	N	2024	2024	2044	1832	2045						
(17) General Work Experience	Corr	.007	-.051*	-.116**	.162**	.413**	1					
	N	2431	2431	2445	2207	2024	2446					
(18) Years as Supervisor	Corr	.071**	-.117**	-.107**	.232**	.317**	.637**	1				
	N	2411	2411	2425	2195	2011	2411	2426				
(19) Household Head	Corr	.050*	-.050*	.045*	.046*	.140**	.244**	.156**	1			
	N	2445	2445	2471	2216	2041	2442	2422	2471			
(20) Married	Corr	.022	-.033	.013	.308**	.019	.139**	.143**	.228**	1		
	N	2441	2441	2453	2215	2029	2438	2418	2452	2453		
(21) Working Fulltime	Corr	.085**	-.079**	-.211**	.217**	.054*	-.004	-.001	.093**	.032	1	
	N	2433	2433	2460	2206	2030	2431	2411	2458	2440	2460	
(22) Entrepreneurial Parents	Corr	.087**	-.053**	.026	.064**	.003	-.014	.072**	.025	.027	.002	1
	N	2425	2425	2439	2204	2019	2425	2406	2436	2434	2425	2440

*. Pearson Correlation is significant at the 0.05 level (2-tailed).
**. Pearson Correlation is significant at the 0.01 level (2-tailed).

Results

Results for the influence of individual motivations on NV self-selection appear in the first four lines of the left half of Table 4. Hypothesis 1a) stated that the more importance an individual assigns to financial motives, the less likely he or she is to self-select into NV. We obtained no support for this hypothesis. Hypothesis 2a) posited a positive impact of independence motivation on the likelihood of starting any kind of business. Here the results are marginally significant (at the 10 percent significance level) and support our hypothesis. The next two rows reveal highly significant negative effects of recognition motivation and role model motivations on the likelihood of self-selecting into becoming a NV. This provides strong support for Hypotheses 3a) and 4a). Thus, in summary, our results indicate that individuals who are highly motivated by independence are somewhat more likely to become nascent venturers, while those motivated more by

social recognition and role models are significantly less likely to become nascent venturers.

Next, we tested the hypotheses regarding the impact of individual motivations on selection into NI. The results appear in the right half of Table 4. Hypothesis 1b) stated that more importance assigned to financial motivation by the NV would make the NV more likely to be selected into NI. This hypothesis was strongly supported by the data. Hypothesis 2b) suggested a negative influence of high independence motivation on organizational selection into NI. While the coefficient displays the hypothesized sign, it is not statistically significant. Hypothesis 3b) proposed that motivation for external recognition predisposes NVs to be chosen for NI. Our data marginally supported this hypothesis. In contrast, although the coefficient for role models displays the hypothesized sign, the coefficient is statistically insignificant and therefore fails to support Hypothesis 4b). In summary, our results indicate that individuals who have strong financial and social recognition motivations are significantly more likely to become nascent intrapreneurs relative to entrepreneurs.

Table 4 Results of Bivariate Probit Model with Sample Selection - Essay 2

	NV			NI		
	Coef.	Std. Err.	p	Coef.	Std. Err.	p
Financial Motivation	0.03	0.08	0.75	0.10	0.05	0.02
Independence Motivation	0.14	0.08	0.10	-0.06	0.04	0.16
Recognition Motivation	-0.43	0.08	0.00	0.08	0.05	0.09
Role Model Motivation	-0.12	0.05	0.01	0.02	0.03	0.49
Age_18_24	0.40	0.42	0.34	0.41	0.23	0.07
Age_25_34	0.58	0.32	0.07	0.09	0.18	0.60
Age_35_44	0.61	0.27	0.03	0.15	0.15	0.31
Age_45_54	0.32	0.24	0.19	0.15	0.13	0.23
Postgraduate Studies	0.12	0.21	0.56	-0.03	0.13	0.84
College Degree	-0.05	0.15	0.74	0.06	0.10	0.57
High School	-0.23	0.17	0.18	0.14	0.10	0.17
Female	0.02	0.13	0.90	-0.22	0.08	0.01
Household Income (ln)	0.01	0.10	0.94	-0.04	0.05	0.48
Industry Specific Experience	-0.03	0.01	0.00	0.01	0.00	0.01
General Work Experience	0.01	0.01	0.19	-0.01	0.01	0.23
Years as Supervisor	0.02	0.01	0.06	0.00	0.01	0.62
Household Head	0.29	0.22	0.18			
Married	-0.40	0.13	0.00			
Working Fulltime	-0.10	0.14	0.49			
Entrepreneurial Parents	0.35	0.12	0.00			
Survey Control	-7.33	0.16	0.00	-1.18	0.22	0.00
Constant	7.53	1.16	0.00	-0.54	0.57	0.35
ρ	0.35	0.38	0.92			
N=1586	censored obs=284			uncensored obs=1302		
Wald Test of ind. equations	(ρ=0):	χ^2 (1)=	0.84	Prob > χ^2 = 0.3597		
Wald $\chi^2(17)$ = 97.73	**Prob > χ^2= 0.0000**			**Log pseudolikelihood = -985.7862**		

The multivariate analysis also reveals several interesting findings regarding the control variables. For example, the effects of education on NI status are weaker than the univariate comparisons in Table 2 suggested, while the effects of age on NI status are more pronounced compared to the univariate tests. Also contrary to the univariate statistics, specific industry experience seems to influence the decision to become a NI,

while general work experience is an insignificant influence on NI status. Moreover, married individuals are about 40 percent less likely to start any sort of new venture (p-value below 0.01), and entrepreneurially active parents increase the venturing probability by approximately 35 percent (p-value below 0.01). This finding is consistent with literature on the family background of entrepreneurs (e.g. Arum & Mueller, 2004). Fairlie and Robb (2007) suggest for example that prior to starting a business over half of all business owners had family members with self-employment experience. The control variables exclude several possible competing explanations for the decisions to become an NV and an NI, increasing our confidence in the influence of the four core motivations on these decisions.

The data supported five of our eight hypotheses regarding our estimation of the dual role of individual motivations for (a) the general decision to become a NV and (b) the decision to become a NI. In addition, almost all effects (apart from H1a) generally follow the hypothesized direction. Interestingly, the results show that the same individual motivations that influence selection into nascent venturing have a noticeably different influence on the organizational selection of prospective candidates for nascent intrapreneurship. Thus, motivation affects the decision to become a venturer differently from the mode of venturing itself. This distinction is a new observation and contribution to the literature. In addition, we have identified significant differences how motivation influence NIs and NEs differently.

These findings lead to the general question of why start-up motivations differ between NVs and non-NVs and also between NIs and NEs. Apart from the reasons we provided in the theory section, one overarching explanation might be that the four core

motivations affect NIs and the non-venturing control group in a similar way. That could be a possibility because NIs and non-venturers both share the influence of an organizational (i.e. employer) context: employers might look for similar motivation patterns in standard hiring procedures for employees and in the organizational selection of prospective NIs. Our univariate results in Table 2 support such an argument since non-NVs present stronger motivations than NVs on all four core motivation scales (p-values all below 0.01). NIs also present significantly higher scores than NEs in three of the four motivation scales with the only exception being the independence scale (p-values for the three significantly different motivations range from 0.08 to below 0.01). If NIs were indeed similarly motivated as non-NVs, as Martiarena's (2013) findings of resemblance between NIs and non-NVs regarding risk-aversion and income expectations suggest, a simple probit analysis should find the four motivations to be individually and jointly insignificant predictors of NIs versus non-NVs.

We conducted a follow-up probit analysis along these lines, where the dependent variable equaled one for NIs and zero for regularly employed non-NVs. We used the same control variables as in the NV equation of the bivariate probit with sample selection, except for the survey control variable of participation in PSED-I or PSED-II because the group of regularly employed non-NVs stems entirely from PSED-I. Table 5 reports the results of this robustness check

Table 5 Robustness Check - Probit Model - NIs and non-NVs – Essay 2

NI or regular employee (non-NV)			
	Coef.	Std. Err.	p
Financial Motivation	-0.03	0.07	0.69
Independence Motivation	-0.05	0.08	0.52
Recognition Motivation	-0.42	0.07	0.00
Role Model Motivation	-0.10	0.05	0.04
Age_18_24	0.90	0.36	0.01
Age_25_34	0.47	0.30	0.12
Age_35_44	0.47	0.25	0.06
Age_45_54	0.37	0.21	0.07
Postgraduate Studies	-0.27	0.20	0.18
College Degree	-0.11	0.16	0.48
High School	0.38	0.15	0.01
Female	-0.70	0.12	0.00
Household Income (ln)	0.26	0.09	0.00
Industry Specific Experience	-0.05	0.01	0.00
General Work Experience	0.02	0.01	0.09
Years as Supervisor	0.03	0.01	0.00
Household Head	0.50	0.21	0.02
Married	-0.39	0.13	0.00
Working Fulltime	-0.41	0.14	0.00
Entrepreneurial Parents	0.04	0.12	0.71
Constant	-0.98	1.02	0.34
N=627 Wald $\chi^2(20) = 190.99$ Prob > $\chi^2 = 0.0000$ Log pseudolikelihood = -308.815			

In Table 5 we found, however, that while NIs might indeed be similar to non-NVs in terms of financial and independence motivations, the two groups still differ significantly with respect to recognition and role model motivations (p-values of 0.00 and 0.04 respectively). Together with our earlier results, this finding leads us to conclude that the three groups (non-venturing employees, NEs, and NIs) are distinct from each other in terms of their motivations. Researchers need to analyze them separately, as we have claimed from the outset.

Discussion

This article analyzed how individual motivations affect the likelihood of intrapreneurs to start a new venture for their employer as well as the decision to venture at all. We found that the motivations important for the general start-up decision seem to echo the finding of previous studies (Carter et al., 2003). Nascent venturers are significantly less motivated by recognition and role models than regular employees. In contrast, we found that financial motivation influences selection into intrapreneurship more than selection into entrepreneurship. Likewise, external recognition motivation seems to matter more for selection into intrapreneurship than into entrepreneurship. In general, our analysis reveals that the motivations affecting the selection of prospective intrapreneurs are more similar to those of the non-entrepreneurial control group than they are to those of entrepreneurs. These findings echo the results of Martiarena (2013), who suggested that NIs and employees resemble each other in their risk preferences and outcome expectations. Yet the three groups of non-venturers, NEs, and NIs, are still motivated differently. We discussed and tested whether this constellation of motivation profiles reflects the fact that intrapreneurs may be closer in spirit and motivation to regular employees. The empirical findings reported in Table 5 partially failed to support this speculation: NIs and non-NVs differ significantly in their recognition and role model motivation.

Given these findings, our paper makes three principal contributions to the corporate entrepreneurship literature, the entrepreneurship motivation literature, and the HRM literature. First, our theorizing about individual and organizational selection offers a broader framework to conceptualize the dual importance of individual motivations as

they affect the complex start-up decisions of intrapreneurs and entrepreneurs. In this respect the essay adds to the CE literature, which traditionally focuses on organizational characteristics, by extending the analysis to encompass individual characteristics, namely individual motivations. We believe our insights contribute to the state of knowledge about the tools middle level managers can use to strategically select intrapreneurs (Kuratko et al., 2005).

Second, our findings suggest a possible reason why earlier studies have produced conflicting findings with respect to the effects of motivations on the likelihood of venturing (c.f. Carter et al, 2003; 2004 and Stewart & Roth, 2007). That reason is "aggregation bias" caused by combining inappropriately two different types of venturers: entrepreneurs and intrapreneurs. Our findings show that different motivations affect the venturing decision differently from the mode of venturing, i.e. entrepreneurship and intrapreneurship. We therefore suggest that future scholarship should distinguish carefully between these two groups and avoid combining them when analyzing the effects of motivations on start-up choices.

Third, our discussion of the combination of organizational with individual selection is in line with a growing research stream, which explores the influence of HRM practices on corporate entrepreneurship. Recent studies from the HRM domain show how issues such as employee retention, corporate innovation culture, and staff selection affect corporations in ways that bear directly on corporate entrepreneurship. For example, Kemelgor and Meek (2008) analyzed how providing employees with more freedom and opportunities, clarity in compensation and benefits, regular assistance, and communication is associated with lower turnover rates amongst fast-growing

entrepreneurial firms. Wang and colleagues side with Kemelgor and Meek by demonstrating the importance of a strong corporate innovation culture as part of a successful corporate innovation strategy (Wang, Guidice, Tansky, & Wang, 2010). Our study complements these findings. We highlighted the importance of individual motivation for the individual self-selection into venturing and for the organizational selection into NI. We believe that future research can build on this work by exploring the ways that HRM practices can screen employees in work environments where CE is an important part of the organizational landscape.

For practitioners, our findings might help tell nascent entrepreneurs and intrapreneurs apart at an early stage based on their individual motivations. This could be especially helpful for managers interested in identifying suitable candidates for intrapreneurship among their workforce. A better understanding of intrapreneurs' motivations might also proof useful to corporate decision makers seeking to increase the retention of their intrapreneurial talent. In the case where employees leave their companies to start their own independent ventures (Anton & Yao, 1995; Klepper & Sleeper, 2005; Klepper & Thompson, 2010), our insights might help to design attractive intrapreneurial environments and compensation frameworks that would enable organizations to achieve higher retention rates (Kemelgor & Meek, 2008). Following our analyses, compensation frameworks should pay special attention to the financial and social recognition motivation of prospective NIs. Organizations could for example reward NIs publicly with financial grants for their ventures. This would address the financial motivation and the social recognition dimension that NIs seek. In turn, independence and role models seem to be less important for NIs. Companies might

further want to evaluate the benefits of close involvements with the NI venture, if independence does not promise to motivate NIs. Indeed, it seems to be rather the organizational attention that NIs desire as compensation for their efforts. Next to costly financial incentives, recognition seems a more economical way for organizations to foster intrapreneurship.

Our study also cautions managers who might have sought to strengthen corporate venturing activity by seeking to integrate individuals with entrepreneurial motivation profiles into the corporate context. Based on our findings, differences between NIs' and NEs' motivations appear to be pronounced. Future studies would have to investigate how the integration of individuals with entrepreneurial motivation profiles might influence prospective NIs, regular employees, and overall organizational performance variables.

Obviously, our work is subject to several limitations. First, intrapreneurs and entrepreneurs may interpret differently some of the motivation questions posed in the questionnaires. This is a particular concern with measures like financial motivation that have the potential to measure two different concepts (financial security and great wealth aspirations) simultaneously. In our study the main focus of the individuals' interpretation was on financial security, thus partially dispelling such concerns. However, we hope that future scale developments include more robust and differentiated measures of financial motivations. Further developing the limitation of different interpretations, if intrapreneurs and entrepreneurs differ with regard to their self-confidence, for example, they might declare themselves to be motivated differentially. Future studies could empirically test that caveat to our findings. Second, while our findings are representative of the entire population of entrepreneurs and intrapreneurs in the United States, they might not apply

in other countries where personal and organizational cultures are very different (Scheinberg and MacMillan, 1988). This might limit the generalizability of our findings. Third, it is possible that NEs' and NIs' motivations are not fixed but develop and change in the course of undergoing their nascent venturing experience; this idea calls for a dedicated analysis of "dynamic motivations". More specifically, future research could determine the extent to which organizational selection and ongoing support to the intrapreneur affects the evolution of their motivations. Fourth, the scope of this study was limited to early "entry" stages of venture formation, rather than examining implications of individual motivations for survival, growth and other measures of venture performance. We leave the task of tracing through the long-term implications of early-stage motivations for venture performance.

Additional limitations refer to the lack of detailed organizational data in the PSED studies. We cannot rule out the possibility that unobserved organizational selection criteria have an even stronger association with the venture mode choice than individual motivations do. Similarly, we have to assume that organization do not commission certain individuals to become NIs for reasons that allow them to disregard NIs individual start-up motivations. Further, a lack of data on non-compete and non-disclosure agreements makes a differentiating analysis amongst individuals subject to these corporate bounds and those less restricted, impossible. Although PSED investigators captured the motivation data before the actual start of the venture, such corporate restrictions could still predate and thus influence the collected data. Knowing their legal boundaries, individuals might have responded considering their realistically possible achievements and their motivations regarding those and not necessarily their

hypothetically possible motivations. In light of such limitations, our results might reflect at least partially, organizational circumstances affecting individual motivations.

To address such issues in future research, matched individual-organizational datasets are helpful. Controlling for the above-mentioned organizational influences on individual start-up motivation is one possible use of such data. These data would also bring new questions into the purview of entrepreneurship researchers. In particular, individual determinants of venturing could be analyzed conditional on organizational criteria, such as the explicit support of venturing through internal champions or institutionalized incubators. Likewise, organizational determinants on the general start-up decision or the venturing mode choice could be analyzed conditional on engagement of entrepreneurially inclined individuals. Thus, scholars could gain further clarity on the conditional effects that individuals have on organizations and organizations have on individuals in the context of nascent venturing. Moreover, such matched data would be amenable to cross-level theorizing and analysis. It might be interesting to some scholars to find out how changes on corporate level (for example in compensation agreements) affect potential intrapreneurs in their individual venturing motivation and strategies. Conversely, it might be of interest how quickly the products of individual level NI venturing has a notable effect on such corporate variables as finances, innovation culture, or the attractiveness for new hires. In any case, mutual influences of individual and organization promise many new insights into entrepreneurship research. Our study has developed one such example where individual motivations affect individual and organizational selection mechanisms. Similar studies could continue to bring

organizational level and individual level research, as well as intrapreneurship and entrepreneurship research closer together.

References

Alänge, S., & Scheinberg, S. 1988. Swedish entrepreneurship in a cross-cultural perspective. In B. A. Kirchoff, W. A. Long, W. E. McMullan, K. H. Vesper, & W. E. Wetzel (Eds.), ***Frontiers of Entrepreneurship Research***: 1-15. Wellesley, MA: Babson College.

Amabile, T. M. 1993. Motivational synergy: Toward new conceptualizations of intrinsic and extrinsic motivation in the workplace. ***Human Resource Management Review***, 3(3): 185-201.

Amabile, T. M., Hill, K. G., Hennessey, B. A., & Thige, E. M. 1994. The Work Preference Inventory: Assessing Intrinsic and Extrinsic Motivational Orientations. ***Journal of Personality and Social Psychology***, 66(4): 950-967.

Anton, J. J., & Yao, D. A. 1995. Start-ups, spin-offs, and internal projects. ***Journal of Law, Economics, and Organization***, 11: 362-378.

Antoncic, B., & Hisrich, R. D. 2001. Intrapreneurship: Construct refinement and cross-cultural validation. ***Journal of Business Venturing***, 16(5): 495-527.

Arum, R. & Mueller, W. 2004. ***The Reemergence of Self-employment: A Comparitive Study of Self-employment Dynamics and Social Inequality***. Princeton University Press: Princeton, NJ.

Bates, T. 1995. Self-employment entry across industry groups. ***Journal of Business Venturing***, 10(2): 143-156.

Biniari, M. G. 2012. The emotional embeddedness of corporate entrepreneurship: The case of envy. ***Entrepreneurship: Theory and Practice***, 36(1): 141-170.

Birley, S., & Westhead, P. 1994. A taxonomy of business start-up reasons and their impact on firm growth and size. ***Journal of Business Venturing***, 9(1): 7-31.

Blanchflower, D. G., & Oswald, A. J. 1998. What Makes an Entrepreneur? ***Journal of Labor Economics***, 16(1): 26-60.

Brazeal, D. V. 1993. Organizing for internally developed corporate ventures. ***Journal of Business Venturing***, 8(1): 75-90.

Burgelman, R. A. 1983. Corporate Entrepreneurship and Strategic Management: Insights from a Process Study. ***Management Science***, 29(12): 1349-1364.

Cable, D. M., & Judge, T. A. 1996. Person–Organization Fit, Job Choice Decisions, and Organizational Entry. ***Organizational Behavior and Human Decision Processes***, 67(3): 294-311.

Cannon, M. D., & Edmondson, A. C. 2005. Failing to Learn and Learning to Fail (Intelligently): How Great Organizations Put Failure to Work to Innovate and Improve. ***Long Range Planning***, 38(3): 299-319.

Carter, N. M. 1997. Entrepreneurial processes and outcomes: the influence of gender. In P. D. Reynolds, & S. N. White (Eds.), ***The Entrepreneurial Process***: 163-178. Westport, CT: Quorum Books.

Carter, N. M., Gartner, W. B., & Shaver, K. G. 2004. Career Reasons. In W. B. Gartner, K. G. Shaver, N. M. Carter, & P. Reynolds (Eds.), ***Handbook of Entrepreneurial Dynamics: The Process of Business Creation***: 142-152. Thousand Oaks, CA: Sage.

Carter, N. M., Gartner, W. B., Shaver, K. G., & Gatewood, E. J. 2003. The career reasons of nascent entrepreneurs. ***Journal of Business Venturing***, 18(1): 13-39.

Cassar, G. 2007. Money, money, money? A longitudinal investigation of entrepreneur career reasons, growth preferences and achieved growth. ***Entrepreneurship & Regional Development: An International Journal***, 19(1): 89-107.

Collins, C. J., Hanges, P. J., & Locke, E. A. 2004. The Relationship of Achievement Motivation to Entrepreneurial Behavior: A Meta-Analysis. ***Human Performance***, 17(1): 95-117.

Davidsson, P. 2006. ***Nascent Entrepreneurship: Empirical Studies and Developments***. Hannover, MA: now Publishers.

Davis, K. S. 1999. Decision criteria in the evaluation of potential intrapreneurs. ***Journal of Engineering and Technology Management***, 16(3–4): 295-327.

De Clercq, D., Castañer, X., & Belausteguigoitia, I. 2011. Entrepreneurial Initiative Selling within Organizations: Towards a More Comprehensive Motivational Framework. ***Journal of Management Studies***, 48(6): 1269-1290.

Delmar, F., & Davidsson, P. 2000. Where do they come from? Prevalence and characteristics of nascent entrepreneurs. ***Entrepreneurship & Regional Development***, 12(1): 1-23.

Dess, G. G., Ireland, R. D., Zahra, S. A., Floyd, S. W., Janney, J. J., & Lane, P. J. 2003. Emerging Issues in Corporate Entrepreneurship. ***Journal of Management***, 29(3): 351-378.

Douglas, E. J., & Shepherd, D. A. 2000. Entrepreneurship as a utility maximizing response. ***Journal of Business Venturing***, 15(3): 231-251.

Dryler, H. 1998. Parental Role Models, Gender and Educational Choice. ***The British Journal of Sociology***, 49(3): 375-398.

Dunkelberg, W., Moore, C., Scott, J., & Stull, W. 2013. Do entrepreneurial goals matter? Resource allocation in new owner-managed firms. ***Journal of Business Venturing***, 28(2): 225-240.

Edelman, L. F., Brush, C. G., Manolova, T. S., & Greene, P. G. 2010. Start-up Motivations and Growth Intentions of Minority Nascent Entrepreneurs. ***Journal of Small Business Management***, 48(2): 174-196.

Fairlie, R.W. & Robb, A.M. 2007. Families, human capital, and small business: evidence from the Characteristics of Buiness Owners Survey. ***Industrial and Labor Relations Review***, 60(2): 225-245.

Fischer, E. M., Reuber, A. R., & Dyke, L. S. 1993. A theoretical overview and extension of research on sex, gender, and entrepreneurship. ***Journal of Business Venturing***, 8(2): 151-168.

Floyd, S. W., & Wooldridge, B. 1999. Knowledge Creation and Social Networks in Corporate Entrepreneurship: The Renewal of Organizational Capability. ***Entrepreneurship: Theory & Practice***, 23(3): 123-143.

Friberg, M. 1976. Is the Salary the only incentive to work? Wages as Spurs to Labor. ***Sociologisk Forskning***, 13(1): 24-42.

Gatewood, E. J., Shaver, K. G., & Gartner, W. B. 1995. A longitudinal study of cognitive factors influencing start-up behaviors and success at venture creation. ***Journal of Business Venturing***, 10(5): 371-391.

Gatewood, R. D., Feild, H. S., & Barrick, M. R. 2008. ***Human Resource Selection (Sixth Edition)*** (sixth ed.). Mason, OH: Thomson Hihgher Education.

Gerstein, H., & Reisman, H. 1983. Strategic Selection: Matching Executives to Business Conditions. ***Sloan Management Review***, 24(2): 33-49.

Greene, W.H. 2003 ***Econometric Analysis*** (Fifth Edition). New Jersey: Prentice-Hall.

Hagen, E. E. 1962. ***On the Theory of Social Change: how Economic Growth Begins***. Homewood, IL: Dorsey Press.

Hamilton, Barton H. 2000. Does Entrepreneurship Pay? An Empirical Analysis of the Returns to Self-Employment. ***Journal of Political Economy***, 108(3): 604-631.

Hansemark, O. C. 2003. Need for achievement, locus of control and the prediction of business start-ups: A longitudinal study. ***Journal of Economic Psychology***, 24(3): 301-319.

Hayton, J. C. 2005. Promoting corporate entrepreneurship through human resource management practices: A review of empirical research. ***Human Resource Management Review***, 15(1): 21-41.

Hayton, J. C., & Kelley, D. J. 2006. A competency-based framework for promoting corporate entrepreneurship. ***Human Resource Management***, 45(3): 407-427.

Hofstede, G. 1980. ***Culture's Consequences: International Differences in Work Related Values***. Beverly Hills, CA: Sage Publications.

Hornsby, J. S., Kuratko, D. F., & Zahra, S. A. 2002. Middle managers' perception of the internal environment for corporate entrepreneurship: assessing a measurement scale. ***Journal of Business Venturing***, 17(3): 253-273.

Johnson, B. R. 1990. Towards a multidimensional Model of Entrepreneurship: The case of achievement motivation and the entrepreneur. ***Entrepreneurship Theory and Practice***, 14(3): 39-54.

Jones, G. R., & Butler, J. E. 1992. Managing Internal Corporate Entrepreneurship: An Agency Theory Perspective. ***Journal of Management***, 18(4): 733-749.

Kacperczyk, A. J. 2012. Opportunity Structures in Established Firms: Entrepreneurship versus Intrapreneurship in Mutual Funds. ***Administrative Science Quarterly***, 57(3): 484-521.

Kanter, R. 1985. Supporting innovation and venture development in established companies. ***Journal of Business Venturing***, 1(1): 47-60.

Kelley, D. J., O'Connor, G. C., Neck, H., & Peters, L. 2011. Building an organizational capability for radical innovation: The direct managerial role. ***Journal of Engineering and Technology Management - JET-M***, 28(4): 249-267.

Kemelgor, B. H., & Meek, W. R. 2008. Employee retention in growth-oriented entrepreneurial firms: An exploratory study. ***Journal of Small Business Strategy***, 19(1): 74-86.

Kim, P., Aldrich, H., & Keister, L. 2006. Access (Not) Denied: The Impact of Financial, Human, and Cultural Capital on Entrepreneurial Entryin the United States. ***Small Business Economics***, 27(1): 5-22.

King, A. W., Fowler, S. W., & Zeithaml, C. P. 2001. Managing organizational competencies for competitive advantage: The middle-management edge. ***The Academy of Management Executive***, 15(2): 95-106.

Klepper, S., & Sleeper, S. 2005. Entry by Spinoffs. ***Management Science***, 51(8): 1291-1306.

Klepper, S., & Thompson, P. 2010. Disagreements and intra-industry spinoffs. ***International Journal of Industrial Organization***, 28(5): 526-538.

Knight, F. 1921. ***Risk, uncertainty and profit***. New York: Augustus Kelley.

Kolvereid, L. 1992. Growth aspirations among Norwegian entrepreneurs. ***Journal of Business Venturing***, 7(3): 209-222.

Kolvereid, L. 1996a. Organizational Employment Versus Self-Employment: Reasons for Career Choice Intentions. ***Entrepreneurship: Theory & Practice***, 20(3): 23-31.

Kolvereid, L. 1996b. Prediction of employment status choice intentions. ***Entrepreneurship: Theory & Practice***, 21(1): 47-57.

Kolvereid, L., & Isaksen, E. 2006. New business start-up and subsequent entry into self-employment. ***Journal of Business Venturing***, 21(6): 866-885.

Kotter, J. P. 1995. Leading Change: Why Transformation Efforts Fail. (cover story). ***Harvard Business Review***, 73(2): 59-67.

Kristof-Brown, A. L. 2000. Perceived Applicant Fit: Distinguishing between Recruiters' Perceptions of Person-Job and Person-Organization Fit. ***Personnel Psychology***, 53(3): 643-671.

Krueger, N. F., & Carsrud, A. L. 1993. Entrepreneurial intentions: Applying the theory of planned behaviour. ***Entrepreneurship & Regional Development***, 5(4): 315-330.

Kuratko, D. F., Hornsby, J. S., & Naffziger, D. W. 1997. An Examination of Owner's Goals in Sustaining Entrepreneurship. ***Journal of Small Business Management***, 35(1): 24-33.

Kuratko, D. F., Ireland, R. D., Covin, J. G., & Hornsby, J. S. 2005. A Model of Middle-Level Managers' Entrepreneurial Behavior. ***Entrepreneurship Theory and Practice***, 29(6): 699-716.

Kuratko, D. F., Montagno, R. V., & Hornsby, J. S. 1990. Developing an Intrapreneurial Assessment Instrument for an Effective Corporate Entrepreneurial Environment. ***Strategic Management Journal***, 11(4): 49-58.

Lange, T. 2012. Job satisfaction and self-employment: autonomy or personality? ***Small Business Economics***, 38(2): 165-177.

Lazear, E. P. 2005. Entrepreneurship. ***Journal of Labor Economics***, 23(4): 649-680.

Lévesque, M., Shepherd, D. A., & Douglas, E. J. 2002. Employment or self-employment: A dynamic utility-maximizing model. ***Journal of Business Venturing***, 17(3): 189-210.

Lumpkin, G. T., & Dess, G. G. 1996. Clarifying the Entrepreneurial Orientation Construct and linking it to Performance. ***Academy of Management Review***, 21(1): 135-172.

Martiarena, A. 2013. What's so entrepreneurial about intrapreneurs? ***Small Business Economics***, 40(1): 27-39.

Marvel, M. R., Griffin, A., Hebda, J., & Vojak, B. 2007. Examining the Technical Corporate Entrepreneurs' Motivation: Voices from the Field. ***Entrepreneurship Theory and Practice***, 31(5): 753-768.

Maslow, A. H. 1943. A theory of human motivation. ***Psychology Review***: 370-396 (July).

Matthews, C. H., & Moser, S. B. 1995. Family background and gender: implications for interest in small firm ownership. ***Entrepreneurship & Regional Development***, 7(4): 365-378.

McClelland, D. C. 1961. ***The Achieving Society***. Princeton: Van Nostrand Reinhold.

McClelland, D. C. 1965. Achievement and entrepreneurship: A longitudinal study. ***Journal of Personality and Social Psychology***, 1(4): 389-392.

Messersmith, J. G., & Guthrie, J. P. 2010. High performance work systems in emergent organizations: Implications for firm performance. ***Human Resource Management***, 49(2): 241-264.

Miers, M. E., Rickaby, C. E., & Pollard, K. C. 2007. Career choices in health care: Is nursing a special case? A content analysis of survey data. ***International Journal of Nursing Studies***, 44(7): 1196-1209.

Monsen, E., Patzelt, H., & Saxton, T. 2010. Beyond Simple Utility: Incentive Design and Trade-Offs for Corporate Employee-Entrepreneurs. ***Entrepreneurship Theory and Practice***, 34(1): 105-130.

Moskowitz, T., J., & Vissing-Jorgensen, A. 2002. The returns to entrepreneurial investment: A private equity premium puzzle. ***American Economic Review***, 92(4): 745-778.

Naffziger, D. W., Hornsby, J. S., & Kuratko, D. F. 1994. A Proposed Research Model of Entrepreneurial Motivation. ***Entrepreneurship: Theory & Practice***, 18(3): 29-42.

Parker, S. C. 1997. The Effects of Risk on Self-Employment. ***Small Business Economics***, 9(6): 515-522.

Parker, S. C. 2004. ***The Economics of Self-Employment and Entrepreneurship***. Cambridge: Cambridge Universtity Press.

Parker, S. C. 2009. ***The Economics of Entrepreneurship***. Cambridge: Cambridge University Press.

Parker, S. C. 2011. Intrapreneurship or entrepreneurship? ***Journal of Business Venturing***, 26(1): 19-34.

Parker, S. C., Belghitar, Y., & Barmby, T. 2005. Wage Uncertainty and the Labour Supply of Self-Employed Workers. ***The Economic Journal***, 115(502): C190-C207.

Parker, S. C., & Van Praag, M. 2010. Group Status and Entrepreneurship. ***Journal of Economics & Management Strategy***, 19(4): 919-945.

Pinchot, G. I. 1985. ***Intrapreneuring***. New York: Harper & Row.

Plant, R., & Ren, J. E. N. 2010. A Comparative Study of Motivation and Entrepreneurial Intentionality: Chinese and American Perspectives. ***Journal of Developmental Entrepreneurship***, 15(2): 187-204.

Reynolds, P. D. 1997. Who Starts New Firms? – Preliminary Explorations of Firms-in-Gestation. ***Small Business Economics***, 9(5): 449-462.

Reynolds, P. D., & Curtin, R. T. 2011. Introduction. In P. D. Reynolds, & R. T. Curtin (Eds.), ***New Business Creation***, Vol. 27: 1-25: Springer New York.

Rotefoss, B., & Kolvereid, L. 2005. Aspiring, nascent and fledgling entrepreneurs: an investigation of the business start-up process. ***Entrepreneurship & Regional Development***, 17(2): 109-127.

Ryan, R. M., & Deci, E. L. 2000. Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions. ***Contemporary Educational Psychology***, 25(1): 54-67.

Scheinberg, S., & MacMillan, I. C. 1988. An 11-country study of motivations to start a business. In B. A. Kirchoff, W. A. Long, W. E. McMullan, K. H. Vesper, & W. E. Wetzel (Eds.), ***Frontiers of Entrepreneurship Research***: 669-687. Wellesley, MA: Babson College.

Scherer, R. F., Adams, J. S., Carley, S. S., & Wiebe, F. A. 1989. Role Model Performance Effects on Development of Entrepreneurial Career Preference. ***Entrepreneurship: Theory & Practice***, 13(3): 53-71.

Schmelter, R., Mauer, R., Börsch, C., & Brettel, M. 2010. Boosting corporate entrepreneurship through HRM practices: Evidence from German SMEs. ***Human Resource Management***, 49(4): 715-741.

Schneider, B., Goldstein, H. W., & Smith, D. B. 1995. The ASA Framework: An Update. ***Personnel Psychology***, 48(4): 747-773.

Schuler, R. S. 1986. Fostering and facilitating entrepreneurship in organizations: implications for organizational structure and human resource management practices. ***Human Resource Management Journal***, 25: 607-629.

Schumpeter, J. A. 1934. ***The theory of economic development***.

Scott, M. G., & Twomey, D. F. 1988. The long term supply of entrepreneurs: Students' career aspirations in relation to entrepreneurship. ***Journal of Small Business Management***, 26(4): 5-13.

Shane, S. 2003. ***A General Theory of Entrepreneurship: The Individual-Opportunity Nexus***. Cheltenham: Edward F. Elgar.

Shane, S., Kolvereid, L., & Westhead, P. 1991. An exploratory examination of the reasons leading to new firm formation across country and gender. ***Journal of Business Venturing***, 6(6): 431-446.

Shane, S., Locke, E. A., & Collins, C. J. 2003. Entrepreneurial motivation. ***Human Resource Management Review***, 13(2): 257-279.

Shapero, A. 1975. The displaced, uncomfortable entrepreneur. ***Psychology Today***, 9(6): 83-88.

Sharma, P., & Chrisman, J. J. 1999. Toward a Reconciliation of the Definitional Issues in the Field of Corporate Entrepreneurship. ***Entrepreneurship: Theory & Practice***, 23(3): 11-27.

Shepherd, D. A., Covin, J. G., & Kuratko, D. F. 2009. Project failure from corporate entrepreneurship: Managing the grief process. ***Journal of Business Venturing***, 24(6): 588-600.

Stewart, W. H., & Roth, P. L. 2007. A Meta-Analysis of Achievement Motivation Differences between Entrepreneurs and Managers. ***Journal of Small Business Management***, 45(4): 401-421.

Taylor, M. P. 1996. Earnings, Independence or Unemployment: Why become Self-Employed? ***Oxford Bulletin of Economics and Statistics***, 58(2): 253-266.

Van Gelderen, M., & Jansen, P. 2006. Autonomy as a start-up motive. ***Journal of Small Business and Enterprise Development***, 13(1): 23-32.

Vancouver, J. B., & Schmitt, N. W. 1991. An exploratory examination of person-organization fit: Organizational Goal Congruence. ***Personnel Psychology***, 44(2): 333-352.

Vroom, V. H. 1976. ***Work and Motivation***. New York: Wiley.

Wang, S., Guidice, R. M., Tansky, J. W., & Wang, Z. M. 2010. When R&D spending is not enough: The critical role of culture when you really want to innovate. ***Human Resource Management***, 49(4): 767-792.

Wright, P. M., & Boswell, W. R. 2002. Desegregating HRM: A Review and Synthesis of Micro and Macro Human Resource Management Research. ***Journal of Management***, 28(3): 247-276.

Wright, P. M., & Snell, S. A. 1998. Toward a Unifying Framework for Exploring Fit and Flexibility in Strategic Human Resource Management. ***The Academy of Management Review***, 23(4): 756-772.

Zahra, S. A., & Covin, J. G. 1995. Contextual influences on the corporate entrepreneurship-performance relationship: A longitudinal analysis. ***Journal of Business Venturing***, 10(1): 43-58.

Zahra, S. A., Jennings, D. F., & Kuratko, D. F. 1999. The Antecedents and Consequences of Firm-Level Entrepreneurship: The State of the Field. ***Entrepreneurship: Theory & Practice***, 24(2): 47-67.

Zellner, A. 1962. An Efficient Method of Estimating Seemingly Unrelated Regressions and Tests for Aggregation Bias. ***Journal of the American Statistical Association***, 57(298): 348-368.

Chapter 4 : Make it or Break it: Start-Up and Abandonment Rates of Nascent Intrapreneurs compared to Nascent Entrepreneurs over time

Introduction

A growing body of literature compares the venturing results of intrapreneurs (sometimes called corporate entrepreneurs) and independent entrepreneurs. Work in this domain has focused predominantly on comparisons of established ventures which are up to eight years old (Biggadike, 1979; Zahra, 1996). Some of these studies found that entrepreneurs grow faster and are more financially successful than intrapreneurs (Weiss, 1981; Zahra, 1993; Zahra, 1996). Others could not discern differences between the two groups (McDougall, Robinson Jr, & DeNisi, 1992; Shrader & Simon, 1997; Van de Ven, Hudson, & Schroeder, 1984).

This essay follows the lead of Holland and Shepherd (2013) in focusing on the persistence of venturers. Although the decision to persevere with a venturing effort is a repeated and important part of the efforts to bring a nascent venture to market, only a few scholars have investigated this phenomenon (e.g. Holland & Shepherd, 2013; Gatewood, Shaver, Powers, & Gartner, 2002).

Previous research concerning entrepreneurial start-up and persistence discussed persistence as dependent on the perceived control a venturer has over potential challenges facing the venture (Markman, Baron, & Balkin, 2005). Other scholars conceptualized persistence as a personal trait (Baum & Locke, 2004). They would argue that persistence is a trait increasing an individual's motivation to pursue his or her goals (Baum & Locke,

2004). Gimeno and colleagues examined persistency as a function of individual human capital in combination with the organizational context of the venture (Gimeno, Folta, Cooper, & Woo, 1997). They showed that individual and contextual differences impact the performance thresholds relevant for the persistence decision. DeTienne, Shepherd, and Castro (2008) extended this research by demonstrating the effects of personal investment, an individual's alternatives and extrinsic motivation, and organizational efficacy on persistence with the venture.

However, the question of which venturing mode tends to be more persistent or faster to market remains unresolved. Out of the approximately two million Americans who are at any point in time trying to start up their new venture (Reynolds & White, 1997), at least 20% start as intrapreneurs (Parker, 2011). The literature refers to these individuals as *nascent* intrapreneurs (NIs) and *nascent* entrepreneurs (NEs) (Reynolds & White, 1997; Reynolds & Curtin, 2008; Townsend, Busenitz, & Arthurs, 2010; van Gelderen, Thurik, & Patel, 2011), because they are just starting to develop their ventures to bring them to market. Nascent intrapreneurs are defined as individuals who begin a new venture with their employer (Pinchot, 1985). NIs usually own part, or expect to own part of the new venture, which differentiates them from regular employees. Nascent entrepreneurs (NEs) try to start a new firm independently.

The aim of this paper is therefore to report some new findings on the questions of persistency and start-up outcome comparing the two venturing modes NI and NE. The essay answers the following questions: (1) whether NIs are more likely to persist in their efforts, and (2) if NIs bring their early venturing efforts to market quicker than NEs. NIs and NEs both have considerable impact on national economies once they have brought

their ventures from the nascent stage to a fully-fledged start-up (Reynolds & Curtin, 2011a). Both groups contribute to innovation, employment growth and wealth creation (Antoncic & Hisrich, 2001; van Praag & Versloot, 2007). It nevertheless remains unknown which group is more likely to persist or to reach the start-up stage in a timely manner.

In this essay I build on the work of DeTienne, Sheherd, and Castro (2008) in understanding persistence (as well as start-up) to be complex and contingent on individual as well as environmental aspects. In line with the earlier essays of this thesis, I aim to extend the literature towards including individual, opportunity, and organizational aspects of the venturing process and outcome. Thus, in this essay, I contribute to the ongoing conversation about entrepreneurial start-up and abandonment rates with a comparative analysis of two venturing modes: entrepreneurs and intrapreneurs. By doing so, I hope to contribute to answering a call by Shane, Locke, and Collins (2003) to analyze the venturing process that "separates those who continue to pursue opportunities from those who abandon the effort" (pg. 271).

Additional insights into the start-up and abandonment rates of NIs and NEs over time advance our theoretical discussion in four aspects. First, the majority of research efforts have dealt with persistence decision in underperforming firms (DeTienneet al., 2008; Gimeno et al., 1997). To the best of my understanding, less attention has been paid to persistence in the nascent venturing stage amongst individual NIs and NEs. Yet, if individuals do not persevere through the early nascent venturing process, their efforts would never enter the studies compiled at later points. My contribution therefore is partially in understanding the extent to which previous studies on persistence and start-up

outcomes might have been biased by analyzing only the ventures that have persisted through the nascent start-up phase.

Second, my focus on the venturing mode has the potential to contribute to the existing literature as an additional explanatory factor regarding the persistence of individuals. The venturing mode is a particular interesting factor to analyze in this context, because it represents the outcome of individual and organizational selection processes (as per essay 2) that need to be understood together in their impact on the venturing process. In this essay I do include individual level differences to understand their contribution to variance in the start-up and abandonment rates, but the focus is on the influence that venturing together with an established organization can have on the venturing outcome.

Third, we hope to expand upon the existing literature regarding the outcomes of early-stage intrapreneurship about which little research has yet been conducted at the individual level (Monsen, Patzelt, & Saxton, 2010) and extend the empirical literature on nascent entrepreneurship which has previously only examined what happens to NEs (Carter, Gartner, & Reynolds, 1996; Diochon, Menzies, & Gasse, 2005; Parker & Belghitar, 2006; van Gelderen et al., 2011).

Finally, this essay contributes in a theoretical capacity by explaining how initial resource endowments, imprinting effects, embeddedness, and differences in switching costs might help explain difference in NIs' and NEs' nascent venturing outcome. The essay further suggests that avoidance of bureaucracy and higher incentives to gain early legitimacy for NEs could affect the relative start-up outcomes of nascent venturers. Our

theorizing culminates in two hypotheses about the relative likelihood of persistency and the speed with which NIs and NEs bring their new ventures to market.

Practitioners responsible for staying abreast of increasingly faster product development timelines may be interested in comparing start-up and persistency rates between NIs and NEs. This information would help managers decide whether to support an individual's idea in house or encourage independent development outside of the company.

To explore this issue, we utilize individual level panel data from the first and second Panel Study of Entrepreneurial Dynamics (PSED-I and PSED-II). These databases allow us to compare American NIs and NEs in terms of persistency, or alternatively the time it takes to bring their nascent venture to market. Tracking more than 1,500 venturing efforts, we use a series of multinomial logit models to estimate the likelihood of start-up and abandonment for NIs and NEs over the first 45 months of their venturing efforts. In addition we develop a competing risk model inclusive of opportunity characteristics, to verify the difference between NIs and NEs persistence.

The next section of the paper briefly reviews the existing literature that has addressed the topic of what happens to NEs in the nascent venturing phase. We then develop testable hypotheses about the start-up and abandonment rates of NIs and NEs. After analyzing our results, we conclude by discussing implications of our research for scholars and practitioners.

What happens to nascent entrepreneurs over time?

Existing literature on the topic of NE's venturing outcomes has differentiated amongst NEs who (1) see their nascent venture to market, (2) who are still trying to start their venture, and (3) NEs who quit their efforts. (Alsos & Ljunggren, 1998; Carter et al., 1996; Diochon et al., 2005; Parker & Belghitar, 2006; van Gelderen et al., 2011). Table 6 displays the finding of these papers. The data in Table 6 below is listed in accordance with number of months from the venture's conception until researchers recorded the venturing outcome status.

Table 6 Overview of Studies on Self-reported outcome achievement – Essay 3

Months passed since conception	Venturing Outcome Status			Study Authors, year, country and year of sample
	Start-up	Still trying	Abandonment	
6	35% (129)	54% (202)	11% (42)	Van Gelderen et al., 2011, The Netherlands, 1998
6-18	30% (21)	48% (34)	22% (16)	Carter et al., 1996, USA, 1993
12	25% (37)	46% (68)	29% (43)	Alsos & Ljunggreen, 1998, Sweden, 1998
12	39% (51)	34% (45)	27% (36)	Diochon et al., 2003, Canada, 2000
12	43% (162)	36% (135)	21% (79)	Van Gelderen et al., 2011, The Netherlands, 1998
12	47% (159)	33% (112)	20% (69)	Parker & Belghitar, 2006, USA, 1999
18	44% (176)	34% (136)	22% (89)	Van Gelderen et al., 2011, The Netherlands, 1998
36	46% (191)	26% (108)	28% (115)	Van Gelderen et al., 2011, The Netherlands, 1998
36-48	22% (33)	78% (118)		Menzies et al., 2006, Canada, 2000

Outcome achievements of NEs reported as (1) start-up, (2) still trying, and (3) abandonment , order by timeframe. Table adapted from Parker (2009) and Van Gelderen et al. (2011).

It is interesting to note in Table 6, that the majority of studies compute the start-up, still trying, and abandonment rates at one point in time. The only research we could identify that recorded changes in the same ventures' status' periodically was conducted by Van Gelderen and colleagues (Van Gelderen, Bosma, & Thurik, 2001; Van Gelderen, Thurik, & Bosma, 2005; van Gelderen et al., 2011). They recorded the outcome achievements of Dutch NEs after six, 12, 18, and 36 months. Table 6 demonstrates that the time of most interest to scholars is approximately 12 months after conception of the venture. The availability of data 12 months after obtaining initial data coincides with the timing of the first follow-up interviews for data sets like the US, Swedish, Canadian, and Dutch Panel Study of Entrepreneurial Dynamics (PSED). The US PSED-I furthermore suffered from data limitations in subsequent waves. It is otherwise unclear why the timeframe of 12 months is a common choice amongst scholars. The majority of datasets also provide data after 24 or 36 months, which suggests that use of data at 12 months is a choice. Reynolds' and Miller's (1992) research shows that 90% of venturing efforts become either new firms or abandoned within a timeframe of one to three years. Analyzing new ventures once, at the 12 month mark only, is therefore insufficient to adequately assess a nascent venture's potential start-up or abandonment.

Table 6 above provides an overview of the development of start-up and abandonment rates over time. Samples from different countries vary notably in this comparison, but generally after 12 months, about one third of nascent venturing efforts remain in the still trying stage while 25% to 47% report a new fledgling firm. From the longitudinal data of Van Gelderen and colleagues (2001; 2005; 2011), we also note that the start-up dynamic declines over time (35%, 43%, 44%, 46% at times 6, 12, 18, 36). It

seems that after a burst of activity in a nascent ventures' first year, the rate of new fledgling firms could suffer from diminishing rates of new firms over time. The comparison of the two US based studies by Carter et al. (1996) and Parker & Belghitar (2006) brings forward another interesting finding of the changes over time in NE's start-up outcomes. US data from 1993 compared with US data from 1999 shows that in the relatively newer PSED data, more NEs report "start-up status" within the first 12 months (47%), than six years prior (30%). Our analysis of these findings suggests that not only do start-up rates within the same country change notably over time, but even within the same study, the dynamics of starting a new venture do not seem to follow a linear pattern. Both observations call for more recent, detailed, longitudinal analysis of the venturing outcome status.

Although this literature review is not exhaustive, it suggests two focal points for our study. First, the literature thus far has focused exclusively on what happens to NEs. Scholars did not investigate NIs in this early phase. This is despite the many studies that compare the outcome of successfully established intrapreneurial and entrepreneurial ventures. Second, we detected a focus on comparisons after the venture was 12 months into the start-up process. While it is very possible that the majority of nascent ventures do experience a change in outcome status within the first 12 months, we believe there is additional value to a longitudinal analysis that tracks changes in outcome status over time. This view is supported by Reynolds' and Miller's (1992) in their finding that that 90% of venturing efforts become either new firms or abandoned within a timeframe of one to three years. Examining these two areas assists in understanding how dynamics in nascent venturing outcome status develop over time and if they differ between NIs and

NEs. The next section develops hypotheses that allow us to differentiate the start-up and abandonment rates of NIs and NEs.

Hypothesis Development

Scholars have argued from many different perspectives why intrapreneurs or entrepreneurs could enjoy relative advantages regarding start-up or persistence in the nascent venturing process. There are several credible arguments why NIs would outperform NEs and just as many that suggest the opposite. We examine these existing arguments to develop hypotheses about who persists longer or gets to market quicker: NIs or NEs.

We start our theorizing by focusing on organizational influences. Most nascent venturing opportunities are conceived by people "on the job" while actively involved in their role as an employee (Burton, Soerensen, & Beckman, 2002). As many as nine out of ten ventures are conceived this way (Gompers, Lerner, & Scharfstein, 2005). We develop four distinct, but related arguments to support our first hypothesis: These arguments are (1) initial resource endowments, (2) imprinting effects, (3) embeddedness, and (4) different switching costs. Then we develop arguments that help explain who reaches the market faster.

Initial Resource Endowments

Our first argument concerns initial endowments with organizational resources and capabilities that play a strong role in the very early stages of the nascent start-up phase

(Shane & Stuart, 2002; Garrett & Neubaum, 2013). Initial endowments are defined as the stock of resources that a nascent venturer can draw on in the very beginning of the venturing task (Shane & Stuart, 2002). Access to resources is often a challenge that individuals in the nascent start-up phase report as one of their main concerns (Reynolds & White, 1997). Scholars studying these challenges from an organizational perspective have suggested that intrapreneurs may benefit from access to internal financial resources via their sponsors (Shrader & Simon, 1997) and initial strategic asset endowment (Garrett & Neubaum, 2013).

Literature has linked organizational outcomes to the endowment of the nascent venture with technology (Stuart et al 1999) and human capital (Bruderl et al, 1992). Shane and Stuart (2002) focused on the endowment of the new venture with social capital. All these authors converge on the idea that initial endowments of resources and capabilities are important resources in the start-up process. One can extend this line of thinking by arguing that a NI within an organization has an increased potential to benefit from a larger variety and amount of initial endowments because he is not limited to what he can personally contribute to the venture. Since a NI is in a partnership with an employer, two parties can contribute resources. By contrast, NEs are often heavily dependent on their own personal contribution at least initially. NEs might get funds from friends, family, banks, etc. but such resources seldom match the NEs personal input into the venture. These differences in initial endowments suggest a superior supply of resources and capabilities at the disposal of the NI. An additional advantage for NIs lies in the potential to leverage the initial start-up advantage of superior resource endowment

over time. While the NE is still trying to secure access to needed resources, the NI can start using them earlier.

Imprinting Effects

Our second argument regarding imprinting effects might amplify such advantage. The imprinting literature argues that initial founding conditions of nascent ventures have an impact on the subsequent venturing outcome (Boeker, 1989; Stinchcombe, 1965). Stinchcombe (1965) further explained that initial endowments have a lasting influence. Hannan (1998) suggested that initial resources and capabilities could embark a nascent venture on a path-dependent trajectory towards the establishment of a long-lasting favorable position. Although a multitude of factors influence a nascent venture in its earliest stage (Bamford, Dean, & McDougall, 2000), researchers have shown particular interest in studying the imprinting effects of initial venturing partners (Gulati & Gargiulo, 1999; Milanov & Fernhaber, 2009). For example, the network size and centrality of a new venture's initial partner influences the subsequent growth of the nascent venture's network (Milanov & Fernhaber, 2009). Furthermore, information from the initial venturing partner is indispensable when deciding on future partners (Gulati & Gargiulo, 1999). Such imprinting effects from the venturing partner may assist a NI by helping to develop a set of blueprints regarding how to structure a nascent venture and how to approach building networks. NIs are imprinted with the way business is done inside the organization. As members of an established organization, NIs also learn the organization's HR values (Leung, Foo, & Chaturvedi, 2013). Those reflect on the way

the organization communicates issues and addresses problems. NIs thus can understand their venturing partner early on and in detail. NIs benefit from shared meaning and decision history which frames their interaction with their corporate venturing partner. NIs are less likely to struggle trying to understand their employer. NIs use the successful routines of their parent firms. Such imprinting sets NIs apart from NEs. While NEs might also take away similar information from their former employer, they are unlikely to only deal with their former employer. NEs have to learn about their new venturing partners (Rothaermel & Thursby, 2005). The organizational imprinting by the former employer is less helpful. NEs need develop new routines to manage those new relationships. Yet, NEs' new routines are unproven and less likely to be as efficient as those developed and proven over years inside organizations. Since NIs can make use of the successful routines in the familiar environment of their parent firms, they might be less likely to quit their nascent venturing efforts compared to NEs.

The concept of time compression diseconomies (Dierickx & Cool, 1989) describes the fact that a resource or capability developed and honed over several years cannot be easily replicated within a short timeframe. The amount of time spent developing such resources and capabilities allows for learning and familiarization that suffer during shorter development cycles. Time compression diseconomies may also reduce the likelihood of NIs abandoning their nascent ventures. NIs have an advantage because as members of the organization, it is more likely that they have already spent some time developing part of the ventures' resources and capabilities. Therefore, the initial organizational resources for the NI venturing efforts could suffer less from time compression diseconomies. If a NE tried to build resources and capabilities up from

scratch in a short period, time compression diseconomies would become an issue. NEs forfeit the possibility to learn from the failed attempts and to learn over time as the resource develops. Conversely, a reduced risk of time compression diseconomies for the NIs nascent venturing efforts makes the initial resource endowments more relevant and applicable for NIs. Thus, NIs should have another reason to exhibit lower likelihoods of withdrawal from their nascent venturing activity.

Embeddedness

Our third argument addresses the embeddedness (Granovetter, 1985; Uzzi, 1997) of the NI within the organization before she embarks on the nascent venturing effort. Embeddedness is defined as the web of ongoing social relations that enables and constrains the behavior of individuals within their context (Granovetter, 1985). Embeddedness affects the start-up and abandonment rates of NIs and NEs in several different ways. First, embeddedness of an actor within his organizational environment influences the quality and flow of information. In the context of nascent venturing, important information is often subtle, hard to validate, and nuanced depending on the context. Therefore, nascent venturers place a premium on the sources they know and with which they are familiar (Granovetter, 2005). Such familiarity, we argue, is likely to be higher between NIs and their employer, than it is between NEs and their venturing partners. During their time as employees NIs have built intra-organizational relationships, including personal liaisons based on friendship and trust. Such relationships benefit the NI as she can reveal any available information on the project. Confidentiality

requirements further assure that information exchange remains safe between the NI and her peers. This is in contrast to a NE who may have concerns revealing sensitive project information. The fact that an NI is developing a nascent venture together with her employer is a testament to that relationship. While there are no a priori reasons to believe that NEs would not have had the same experience while employed, it is less likely that all NEs can and want to capitalize in the same form on their familiarity with their ex-employer as NIs do.

Second, Nanda and Soerensen (2010) showed that peers can positively influence the likelihood that an individual perceives a nascent venturing opportunity and develops the inclination to exploit it. If peers can influence opportunity recognition, it is also possible that they influence intrapreneurs' nascent venturing with their feedback. Research supports this proposition as peers' encouragement increases the speed to market by 54% in the context of academic spin-offs (Müller, 2010). The familiarity involved in embedded relationships intensifies feedback processes. Feedback is important to improve existing routines, but also in developing new initiatives. It can help prevent oversight and focus attention on neglected, yet important areas of venture development. In particular, timely feedback might prevent the nascent venture from committing potentially harmful mistakes or passing by lucrative opportunities. Feedback from people whose opinion one values, ranks higher than feedback from loose acquaintances (Granovetter, 2005). Therefore, the feedback coming from trusted colleagues and peers (Müller, 2010) might be particularly meaningful and helpful to NIs. NEs on the other hand receive feedback from other sources. NEs are unlikely to have peers whose opinions they can easily seek.

NEs' feedback sources are likely less embedded and the NEs therefore need to invest more resources and energy to gain the same level of confidence in the feedback provided.

Third, NIs enjoy greater social and professional networks than NEs who are not embedded within the network of a parent organization. In this way, NIs benefit from the breadth and the depths of their parent organization's network. This might result in more and higher quality sales leads and a broader variety and intensity of supplier relationships, for example. Not facing NEs' investments of time, energy, and money to develop their own independent networks, NIs might be less likely to withdraw from their venturing efforts.

Fourth, Marx and Lechner (2005) proposed that the organization context of formal and informal relationships affects the survival rates of start-ups. They argued that corporate ventures, headed by NIs, depend on the interaction with their organization's members to gain legitimacy and access to resources (Marx & Lechner, 2005). Both the interaction within the corporation and access to resources positively influence the venture`s survival (Delmar & Shane, 2004). Marx and Lechner (2005) explain the underlying mechanisms of easier access to intellectual property, internal financing, and corporate support from champions. Such support is available to embedded NIs who are already part of the organization. In the case of access to intellectual property, the embedded NI benefits from the fact that he is a known member of the organization, most likely bound by non-compete and non-disclosure agreements and can thus be trusted easier with intellectual property of the organization. The embedded NI does not have to apply, externally or formally, to use the intellectual property. Embeddedness opens the proverbial doors and removes obstacles to the venture's start-up plans. Through these

mechanisms, embeddedness contributes to the prospects of the NI venture. The study of embeddedness also includes virtual aspects. Morse, Fowler, and Lawrence (2007) make an argument that virtual embeddedness, defined as "the establishment of inter-organizational connections through the use of electronic technologies" (pg 139), affects survival rates of new ventures. They argue that virtual embeddedness, much like in person embeddedness, influences new venture survival through a reduction of the liability of newness (Freeman, Carroll, & Hannan, 1983; Hannan, 1998). In that sense, a company internal email exchange might appear to be less prone to concerns about trust and liability of newness. A reduced liability of newness in turn, relates to a lower likelihood of quitting their nascent ventures early on (Delmar & Shane, 2004).

Fifth, the literature on innovation and intellectual property acknowledges the protective effect of developing a new idea inside an established organization (Pisano, 2006; Teece, 1986). NIs benefit from the fact that they can disclose details of their ideas within the walls of the parent company (Murray & O'Mahony, 2007). Sharing information increases the chances to receive feedback or seed funding (Feldman & Kelley, 2006). Moreover legal departments in established companies help to legalize patent and licensing agreements, thus protecting the nascent venture. Literature on university incubators explains the mechanisms behind stronger protection of intellectual property for embedded nascent ventures (Rothaermel & Thursby, 2005). Finally, an organization's financial strength can help the speedy development of the NI's idea. However, in the new age of open source innovation, the benefit for NIs might not exclusively be one of protective "tightness" or more financing, but rather one stemming from fast dissemination of intellectual property. Pisano (2006) explained how the

disemmination of intellectual property, even before its full development is concluded, can increase its acceptance and adaptation. This aspect of collaborating with an established organization might help NIs whose idea benefits from an early and wide distribution. One example could be software codes or beta versions of apps and computer games that benefit from publicity and early input by potential buyers. Via these three mechanisms of exclusive protection, financial backing, or wide distribution, embedded NIs can benefit from the existence of an intellectual property strategy. If it is more likely that an existing firm has such a strategy in place, then NIs could benefit from it by improving their chances of survival compared to NEs.

Finally, organizational inertia, although mostly perceived as a detriment to NIs, might actually benefit the deeply embedded NIs who began to develop their new start-up within the company. Once the organization has decided to support an individual in his intrapreneurial venturing attempts, the organization is less likely to withdraw its support of an integrated member. In that sense, embeddedness could have another protective function for the NI. Established organizations are reluctant to let go of one of their own and potentially support the NI venture, partly because the organization honors the established ties with the embedded NI. Conversely, it is less likely that NEs benefit from the same protective advantage of embeddedness with their partners, who in comparison are likely to withdraw their support earlier at signs of adversary.

Switching Costs

Our fourth argument concerns differences in switching costs between NIs and NEs. Switching costs are all financial and non-financial costs associated with the change away from the current nascent venturing attempt to the next best alternative (Gimeno et al, 1997). Switching costs may include, but are not limited to the effort, time, and opportunity costs in searching for and evaluating an alternative venturing opportunity or even a regular job. Many venturers are particular about their investments in time and effort already invested into their nascent venturing opportunity. Individuals consider investments of financial, social, and psychological nature as part of their venturing attempt. When they turn away from their venturing efforts, they might perceive these investments as lost (Sharma and Irving, 2005).

While there is little reason to believe that NIs or NEs differ regarding their personal investment in terms of time and efforts, my argument here focuses on the social capital at stake. Often NIs step out of the traditional chain of commands. They become special corporate agents designated to execute their venturing tasks. They depend on sponsorship from higher-ranking corporate decision makers. If successful, being an intrapreneur can be a career maker. However, being unsuccessful might tarnish the social capital built up by the NI within the company. If abandoning the nascent venturing effort would disappoint important corporate decision makers, NIs might be more likely to persist with their venturing efforts to avoid such disappointment. Conversely, NEs, venturing independently, are less likely to consider disappointing their venturing partners as switching costs. NEs can either start their next venture or seek a corporate position.

The three main arguments (initial resource endowments, embeddedness, and switching costs) with their explanation and underlying mechanisms all lead to the first Hypothesis:

Hypothesis 1: NIs are less likely to abandon their nascent venturing efforts than NEs.

Regarding speed to market (Hypothesis 2), it is possible that the same reasons of initial endowments and embeddedness that make NIs less likely to abandon their venture than NEs, will also make NIs more likely to reach the start-up stage before NEs. However, we develop two argumetns that rather suggest that NEs bring their nascent venture to market faster: (1) legitimacy concerns and (2) less stifling bureaucracy.

Legitimacy Concerns

With argue that legitimacy concerns (Suchman, 1995) affect the speed to market of NIs and NEs more strongly than initial endowments, imprinting effects, embeddedness, or switching costs. Legitimacy arguments have helped to explain early nascent venturing efforts from two different theoretical perspectives rooted in the evolutionary school of thought (Delmar & Shane, 2004). First, an institutional perspective of evolutionary theory proposes the argument that activities that make a nascent venture appear accountable, real, and reliable increase its chances of being perceived as a legitimate organizing effort (Hannan & Freeman, 1984; Meyer & Rowan,

1977). A second social relationship perspective suggests that the prospects of a new venture improve as the venturing efforts branch out to include more, external stakeholders. The increased breadth of relationships reduces the liability of underdeveloped networking connections and supports integration into the business framework of the community (Stinchcombe, 1965; Stuart, Hoang, & Hybels, 1999). Both perspectives of legitimacy apply to the study of nascent ventures because their theorizing includes organizing efforts that have not yet yielded a new company. The social perspective is most important to our argument. NIs and NEs need to gain legitimacy in the eyes of others in the very beginning of their nascent start-up efforts. Particularly NEs need to establish working ties to suppliers, clients, and other external stakeholders. If they were not perceived as legitimate, NEs would struggle to sign contracts, secure suppliers, or make any sales. NIs also need to gain legitimacy within their company to ask for the necessary resources and support needed for their nascent venture.

The social perspective received support recently from Kuratko and Brown (2010). They argued that gaining credibility with external stakeholders is indispensable for the smooth exchange of resources in the nascent venturing phase (Kuratko & Brown, 2010). Such a smooth exchange increases the chances to reach the market in a timely manner. With external partners serving as gatekeepers for potentially critical resources, or for desired target markets, nascent venturers have incentives to establish their legitimacy, or else, access to resources, clients, etc. remains elusive. For any new venture without legitimacy, it is tiresome and costly to negotiate with third parties who are unsure of the viability of the new business. A lack of social integration or social legitimacy can go as

far as preventing initial contracts to be signed because of a lack of history (Shane & Stuart, 2002) and business credibility.

The degree of urgency to establish a nascent venture as legitimate with external stakeholders differs between NIs and NEs. NIs start within an established and thereby legitimate organization. NEs start independently, i.e. alone (as an individual or with one or more NE partners) unless and until external stakeholders can be convinced to engage with the nascent NE venture. Our focus on the first nascent venturing activity is paramount in that regard. NIs and NEs both seek to establish working relationships with third parties but initially the NE starts out alone. Even in a team of NEs, the inclusion of external stakeholders is an additional step. NIs, on the other hand, begin their start-up efforts with a corporate partner. Due to these unbalanced starting positions, the liabilities of newness (Shepherd, Douglas, & Shanley, 2000) and smallness are particularly pronounced for independent NEs.

Challenged with concerns about liability of new newness and smallness, NEs must quickly make their business real to others. The additional time spent on planning and waiting is costly to them, particularly if they do not earn income from another source. NEs need to introduce their name and their idea to potential customers without the support of a corporate partner. One way in which to overcome the initial liability of newness and smallness is by showing momentum in the nascent venturing phase. Momentum, meaning the breadth and range of start-up activity, is associated with better sales performance in the second year of new venture start-ups (LeBrasseur, Zanibbi, & Zinger, 2003). It could also send a signal to potential external stakeholders that

apparently others have already been able to engage successfully with the newly developing NE venture.

NIs on the other hand can benefit from the existing legitimacy conveyed onto them by their parent company and corporate venturing partner (Stuart et al., 1999). Because of initial insecurity about the viability of any nascent venture, third parties use the link to (or ideally endorsement of) prominent venturing partners as a quality indicator of the nascent venture (Stuart et al., 1999). Usually NIs operate from the same location as the corporate partner and use the parents' company infrastructure, email addresses, phone lines, etc. Letterhead or email addresses that suppliers and clients are familiar with could help to connect the NI venture to the parent company. In these ways NIs can capitalize on their parent organization's reputation and relationships. While separate branding strategies often exist for consumers in order to avoid cannibalization of existing premium brands, partners in the initial nascent venturing stage are often aware of the joint management of separate brands within the same company. For example, a supplier of plastic shampoo bottles is likely interested more in the fact that the newest request for a quote comes from a NI inside Proctor and Gamble as opposed to the brand printed on the bottle.

As NIs and NEs start their nascent venturing efforts within different organizational environments that affect their need for early legitimacy, the urgency with which NIs and NEs seek to establish their legitimacy differs. NIs have fewer incentives to establish legitimacy early on in the market place as they have access to the parent corporations' resources from the beginning, benefit from their partners' signaling effects and from reduced liability of newness and reduced liability of smallness,. NEs on the

other hand have to overcome the initial liability of newness and smallness alone. They therefore have a stronger incentive to strive for initial legitimacy by making their business real and tangible to others (Carter et al., 1996). Doing so results in NEs trying to bring their nascent venture to market as early as possible.

Less stifling bureaucracy

Regarding less stifling bureaucracy, prior research suggests that corporations can stifle the creation of new ventures due to bureaucracy (Dobrev & Barnett, 2005). Dobrev and Barnett (2005) argue that "the pursuit of creative ideas is facilitated by an informal, fluid, and less constraining environment, where the rigidity of an established bureaucracy has not yet taken hold" (pg. 434). Their argument implies that an established bureaucracy, characterized as a formal, less fluid, and more constraining environment, could have a negative effect on the facilitation of the pursuit of creative ideas. If it were true that NIs try starting their venture in a more formal environment, they would likely have to comply with specialized and monitored procedures. However, the abidance by rules and procedures is costly in time and energy and thereby adversely influences NIs' time to market. This in turn could favor NEs by comparison.

Other scholars have also found that individuals inside organizations with creative ideas for change, such as those involved in the nascent venturing context, struggle when confronted with organizational inertia (Hannan & Freeman, 1984; Romanelli & Tushman, 1986). Organizational inertia exists via bureaucratic controls (Zahra, 1996) and the inability of the organization to respond to technological change (Henderson, 1993).

Since the nascent venturing task within an organization invariably provokes some changes, it is likely that the NI needs to explain and defend them. Since such activities consume time that cannot be spent on the development of the NI venture, it is conceivable that NIs take longer than NEs to bring their nascent ventures to market.

Hypothesis 2: NEs achieve the start-up stage faster than NIs.

Data and Measures

Given our goal to compare the start-up and abandonment rates of NIs and NEs, we ideally would like to have longitudinal data on nascent venture start-up and abandonment with the possibility to differentiate clearly between NIs and NEs. Fortunately, such a dataset is publicly available with the most recent wave from December 2011. The Panel Study of Entrepreneurial Dynamics (PSED) I and II is the best data available for our study because it fulfills all of the above criteria and provides important control variables. Both longitudinal PSED data sets deal with business creation on a large scale representing the entire nascent venturer population of the United States. The datasets began by screening a representative sample of the entire adult population of the US in an effort to identify the individuals actively involved in the business creation process. In the first screener telephone interview conducted between 1998 & 1999 PSED-I interviewed 31,264 Americans over 18 years old. Between October 2005 and January 2006 PSED-II interviewed 31,845 US adults.

A more detailed data collection followed. Except for the first follow up interview in PSED-I (which was by mail) later PSED-I waves and all PSED-II waves, employed trained telephone surveyors who followed up with the nascent venturers. In PSED-I the first complete round is known as 'Wave 1' and is representative of the entire American adult founder population. There are three more waves in the PSED-I. The PSED-II data collection began with 'Wave A' and concluded with the sixth and last 'Wave F' in December of 2011.

We framed this large sample to include only individuals that were currently in the process of starting up a new business at the screener stage of PSED-I or II. These individuals are (1) actively involved in the nascent venturing process, (2) have engaged in some start-up activity during the last 12 months, (3) expect to own part or the entire new firm, and (4) would not have seen their venturing efforts result in a new fledgling company just yet (Carter, Gartner, Shaver, & Gatewood, 2003; Davidsson, 2006; Gartner, Shaver, Carter, & Reynolds, 2004). All interviewees also (5) needed to provide updates on their start-up efforts at least once during the follow up interviews, registering the months of any change in their venturing status (still trying, new firm, or quit). Every nascent venturer in our study allowed insights into their nascent venturing status at least twice. Sixty percent provided data six times. Following these criteria we included only NIs and NEs who shared data that allowed us to reconstruct the history of their nascent start-up efforts until either start-up or abandonment. We did not restrict our sample further. Such framing resulted in data for 1,590 nascent venturers based on the combined PSED-I and PSED-II. A complete description of the survey design and methodologies underlying the PSED datasets is available at www.psed.isr.umich.edu.

Dependent Variable: Start-up, Abandonment, or Still Trying

We used time stamped activity data from PSED-I and II to compile a history of nascent venturing activity for each individual NI and NE. In each follow up interview, interviewers asked respondents if they completed certain activities in the time since the last interview. If that was the case, the respondents were asked to reveal when certain milestones were reached. Since we also have the date (year and month or at least season) of the conception of the business, we can compile a timeline of events for each nascent venture in the PSED.

All active nascent venturers answered the same question in each follow up interview (spaced approximately 12 months apart): Do you consider your venturing efforts to have already led to start-up, are you still trying to start your nascent venture, or have you given up on it? They also reported on the date of any change in status. The status of 'still trying' and 'quit' are comparable amongst the NI and NE ventures because they should be theoretically unambiguous. Yet, to record disengagement, respondents in the PSED-I database claimed to have stopped working on their nascent venture, whereas in PSED-II they reported abandonment based on little recent work on the start-up and no expected or intended future efforts (Reynolds & Curtin, 2011b). Since the PSED-I measure of disengagement is included in the more robust PSED-II measure, we can safely assume that all NIs and NEs who reported 'abandonment' have stopped working on their nascent venture.

To assure the same comparability for the outcome 'start-up', i.e. the creation of a new enterprise, the phrase is associated with positive cash-flow in both datasets. Any individual reporting positive cash-flow in the initial screener interview was not part of the

investigation. In the follow up interviews of PSED-I, respondents had to report at least three months of positive cash flow, i.e. revenues exceeding all expenses, inclusive of owner manager salaries. For PSED-II the outcome 'start-up' was recorded when respondents claimed positive cash flow values for six out of the last 12 months, likewise including owner managers' salaries. Because of these small differences we have reason to assume that PSED-II new firms are better established and slightly more viable by the time they claim to be new start-ups. However, since again the PSED-II measure is more robust and includes the earlier PSED-I measure, we are confident that any nascent venturing efforts within PSED-I or II has at least reported 3 months of positive cash flow. These cash flow indicators have also long been one of the standards to measure outcome of nascent venturing activity (Alsos & Ljunggren, 1998; Carter et al., 1996; Diochon et al., 2005; Parker & Belghitar, 2006). Our trichotomous outcome variable builds on these previous conceptualizations of the 'start-up' outcome and makes our research comparable to the studies reviewed above on NE outcomes. Consequently, our trichotomous dependent variable differentiates the outcome of nascent venturing activities as 1=start-up, 2=still trying, and 3=abandonment.

Since nascent venturers reported on the dates when they successfully started or alternatively abandoned their nascent venturing effort we were able to compile timelines for each individual venture registering the success, continuation, or abandonment of start-up activities. This approach builds on Parker and Belghitar (2006) who used a similar measure. They computed their trichotomous variable out of PSED-I data alone. They use only two data-points, one at the initial interview and the other at the first follow up survey approximately a year later. The measure employed in our article is more

extensive. We computed the dependent variable 15 times in order to cover a time-period of up to 45 months in intervals of three months (or quarterly intervals) for each venture. Although start-up efforts can take as long as ten years, “over 90% of start-ups report a gestation window of 36 months or less” (Reynolds & Miller, 1992)(pg.405). For almost all ventures, we considered constructing a weekly or even daily outcome history, but we found the additional value to be limited. Initially all ventures began with a value of 2 (=still trying) at time zero, when they are conceived, i.e. first thought about. At each quarterly checkpoint thereafter the venture has a chance to change into group 1 (=successful start-up) or group 3 (=abandonment). If no change is reported, the venture is carried forward in group 2 (=still trying).

Independent Variables

To mitigate concerns about endogeneity between independent and dependent variables, we restricted use of independent variables to those we observed independently of the trichotomous outcome variable. All independent variables stem from the first screener and detailed interview. All independent variables are therefore temporally separated from the outcome variable on start-up, still trying, and abandonment, which is collected in the follow up interviews. This separation of independent and outcome variables improved confidence in our empirical model. It also reflects a typical decision making situation: when managers and stakeholders have to make forward-looking decisions based on currently available information.

Our explanatory variable is nascent intrapreneurs, or *Intrapreneur*. Following established PSED constructs, and in accordance with our sample frame, a nascent *Intrapreneur* meets criteria (1)-(5) outlined above. Taking these criteria as our base, we constructed the variable *Intrapreneur* as a dichotomous variable with the value "1" if an individual reports to be starting a new venture together with his or her employer. We assigned the value "0" to nascent entrepreneurs (NEs) who fulfilled criteria (1)-(5) as well, but started their venture independently.

Control Variables

We considered other explanatory variables that previous literature has shown to affect the start-up process. Shane and Delmar (2004) analyzed the effect of business planning. They found that business planning has an influence on the continuation of organizing efforts. Therefore, *Business plan* records in a dichotomous manner whether a formal business plan was written for the nascent venture (yes=1, or no=0). Other scholars have investigated the size of the organization in order to understand its influence on generating entrepreneurs or intrapreneurs (Elfenbein, Hamilton, & Zenger, 2010; Kacperczyk, 2012). Consequently,*Organizational size* is a measure of fulltime-equivalent employees at the individual's current or former (if NE) employer. Researchers also analyzed individual expectations as indicative of their venturing efforts and outcomes (Douglas & Shepherd, 2002; Gatewood et al., 2002). The control variable *Expectation* takes the expected income after the first full year of operation as a successful start-up into account. We converted this variable into the natural logarithm of the expected US Dollar value.

Specific and general work experiences played important roles in explaining venture start-up success (Acquaah, 2012; Krabel & Mueller, 2009; Rotefoss & Kolvereid, 2005). *Industry specific experience* reports the full years an individual has gathered work experience in the industry of the nascent venture (Marino & De Noble, 1997). Cassar (2013) found that industry specific experience strongly impacts whether or not entrepreneurs meet their own expectations. *General work experience* captures the full years of work experience an individual reports. Managerial experience has also been linked to start-up performance (McGee, Dowling, & Megginson, 1995). We accounted for this possibility by capturing S*upervisory years* as the number of full years an individual has supervised others as part of his or her regular work. Similarly, *People supervised* measures the maximum number of individuals under the supervision of the respondent.

Businesses helped start indicates the total number of businesses an individual helped to start. Literature shows how prior start-up experience positively and directly impacts the start-up outcome (Zhao, Song, & Storm, 2012). It also highlights the mediation effect of prior start-up experience through its influence on the scalability and protectability of the new business idea (Zhao et al., 2012). Whether or not the nascent venturer's parents have owned and operated their own business has been argued to transfer informal human capital and affect the venturers through the learning they might have experienced from family role models (Cooper & Dunkelberg, 1986; Parker & van Praag, 2012). We therefore included *Parents Business*, which reports if the parents of the respondent owned or operated their own business (1=yes, 0=no).

We further controlled for sets of educational, age and socio-economic variables. These variables are known to affect the venturing decision (Kacperczyk, 2012; Parker, 2011). The majority of covariates are binary variables taking the value of "1" if the respondent affirms its membership in a group and "0" otherwise. The set of education control variables includes three binary variables: *High school, Some College,* and *College Degree*. We assigned the value "1" to the highest category obtained. Not having completed high school education serves as the unreported base category. The set of age controls includes four binary variables capturing individuals between *18 and 24 years* old, between *25 and 34 years,* between *35 and 44 years,* as well as between *45 and 54 years* of age. Individuals below the age of 18 were ineligible to participate in the survey. Individuals older than 55 years of age serve as the unreported base category.

The set of socio-economic controls includes six covariates associated with business start-up. *Female* reports the gender of the respondent as "1" if female and "0" if male. *Married* reports the marital status as married (=1) or otherwise (=0). Ethnicity is captured in the variable *non-white,* taking the value of "1" if the respondent is of African (-American) or Asian descent, "0" if otherwise. *Household Income* reports the natural log of last year's household income in US dollars. *Owner-occupier* captures whether a NI or NE owns the dwelling he or she resides in (1=yes, 0=no).

Methodology

To understand differences in the start-up and abandonment rates of the nascent venturing process between NEs and NIs, we use multiple record data for 1,590 nascent venturers (363 NIs and 1,227 NEs) to investigate the venturing outcome every three months after the respective venture started. We first analyze whether there is any difference between NIs and NEs in terms of outcome at the end of each of these 14 three-months-time-intervals.

To learn in which outcome category NIs and NEs differ, we further estimate a multinomial logit model with STATA 11. In comparison to the traditional logit model, the multinomial logit model allows for estimation of multiple categories of the dependent variable with one serving as the base category of reference. In our case, the dependent variable *nascent venture start-up outcome* takes one of three values: 1=start-up, 2=still trying, 3=abandonment. 2=still trying is the reference category. The underlying maximum likelihood estimation analyzes the influence of our independent variables on the three possible venture outcomes at the 14 time-points for each venture. This allows us to estimate the relative effects of being a nascent *Intrapreneur* concurrently with several additional covariates on the probability of starting or alternatively abandoning the new venture (compared to still trying) by a certain time. In other words, we compute the relative risk rations for our covariates on the probability of a nascent venture ending up in either the starting, or quitting group, as compared to the still trying group.

Our analysis references relative risk ratios (RRR) instead of coefficients for ease of interpretation. Relative risk ratios are the conceptual equivalents of odds ratios for dependent variables with more than two outcome categories. Finally, the use of weighted

data assures the representability of our comparison for the entire American founder population. This allows meaningful discussion of differences between NI and NE start-up and abandonment rates.

While other analytical methods are possible given our data, the multinomial logit model is the most appropriate because it allows for the tracking of the venturing outcome over time. Alternative survival techniques such as Cox-Regression, for example, allow estimation of independent variables on the likelihood of reaching one of two outcomes. Although Cox Regression allows estimation of the time NIs and NEs typically need to develop a new start-up or to decide on its abandonment, it does not allow the tracking of the venturing efforts over time. With traditional survival techniques, we forfeit the chance to learn about how being a NI versus a NE influences the nascent venturing activity at different times of the process.

Results

The following section presents descriptive statistics of the dependent, trichotomous *nascent venture start-up outcome* variable for NIs and NEs in Table 7 below. Differences in NI and NE *nascent venture start-up outcome* generally appear after nine months of working on the start-up. Overall descriptive statistics suggest that NIs are more likely to reach the first outcome category of new start-up at any point in time. They appear also less likely than NEs to fall into the third outcome category: abandonment. Whether these are significant differences between the two groups is the subject of the next table.

Table 7 Descriptive Statistics of Outcome Differences for NIs and NEs - Essay 3

	NI			NE		
	Successful Startup	still trying	quit	Successful Startup	still trying	quit
0 month	0%	100%	0%	0%	100%	0%
3 month	1%	99%	0%	0%	99%	0%
6 months	4%	95%	1%	3%	95%	2%
9 month	7%	92%	2%	4%	91%	4%
12 month	9%	87%	4%	6%	87%	7%
15 month	10%	84%	6%	7%	84%	9%
18 month	14%	78%	8%	9%	79%	12%
21 month	15%	76%	9%	11%	73%	15%
24 month	19%	68%	13%	13%	69%	18%
27 month	20%	64%	16%	15%	65%	20%
30 month	22%	59%	19%	16%	60%	24%
33 month	23%	56%	21%	18%	56%	26%
36 month	24%	52%	24%	19%	53%	28%
39 month	25%	48%	27%	21%	49%	30%
42 month	26%	45%	29%	21%	47%	32%
45 month	27%	42%	32%	22%	44%	33%

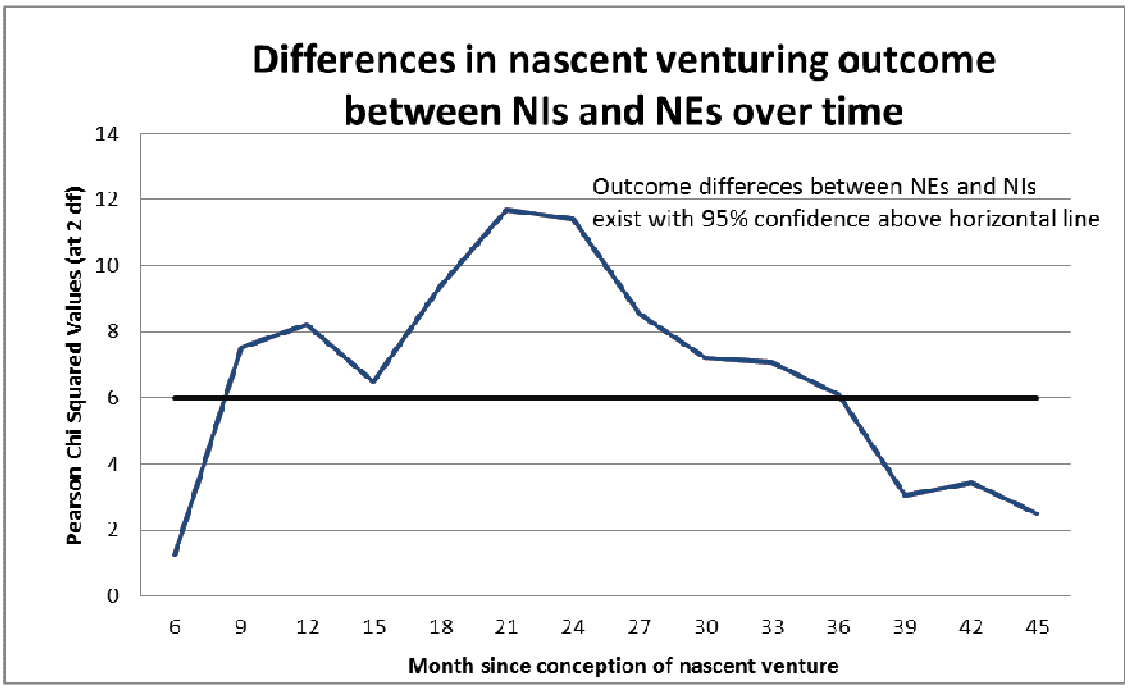
Table 8 presents results of Chi-Square contingency tables in a three (outcomes) by two (groups) format to test which of the observed outcome differences are statistically significant. The data show first significant differences in *nascent venture start-up outcome* between NIs and NEs starting nine months after the initiation of the respective venturing effort. This finding echoes the descriptive statistics above. Comparisons at the zero and three month mark were not possible due to a lack of ventures for all categories. After the Chi-Square tests, however, we only know that the likelihood of falling into one of the two outcome categories (1= new start=up, 3= abandonment) is not the same as falling into the reference category (2=still trying). The differences continue until three years after venture conception (months 36) and then fade. Figure 3 depicts the relationship of outcome differences over time. The horizontal line at value 5.99

represents the critical value of the Chi-square distribution for a 95% probability with two degrees of freedom.

Table 8 Results of Chi Square test of Outcome Difference over time – Essay 3

Timeline	Number of Valid Cases	Pearson Chi Squared	Degrees of Freedom	Significance (2 -tailed)
6 months	1588	1.244	2	.537
9 months	1585	7.529*	2	.023
12 months	1586	8.208*	2	.017
15 months	1584	6.467*	2	.039
18 months	1578	9.368**	2	.009
21 months	1572	11.702**	2	.003
24 months	1563	11.421**	2	.003
27 months	1557	8.516*	2	.014
30 months	1543	7.199*	2	.027
33 months	1533	7.085*	2	.029
36 months	1522	6.108*	2	.047
39 months	1510	3.059	2	.217
42 months	1499	3.424	2	.181
45 months	1495	2.475	2	.290

Figure 3 Results of Chi Square tests of Outcome Differences over time - Essay 3



Next we analyze in which outcome category NIs and NEs appear to be different. The descriptive data in Table 7 suggests that both groups have similarly high percentages values of individuals in group 2 (= still trying) in the early months after venture conception. This is only logical since at the outset every nascent venture is in the 2=still trying group and only subsequently enters into the other two categories. This structure of the data makes the algorithm of the multinomial logit model likely to choose category 2=still trying as the reference category.

Table 9 shows our estimations using the mlogit model inclusive of all control variables at time intervals from 6 until 45 months after conception of the nascent venture.

This paper's focus is the early venturing efforts and their performance outcomes. The comparison of the first 45 months therefore promises substantial insights.

Table 9 Results of the Multinomial Logit Model - Essay 3

	RRR at quarterly intervals	6	9	12	15	18	21	24	27	30	33	36	39	42	45
1 = start-up	Intrapreneur (H2)	1.24	2.01	1.62	1.57	1.72	1.14	1.22	1.19	1.18	1.20	1.17	1.15	1.17	1.13
	Business Plan	0.95	0.95	0.94	0.95	0.92	0.94	0.95	0.97	0.98	0.97	0.99	0.99	1.02	1.02
	Organizational Size	0.36*	0.42*	0.45*	0.41**	0.55*	0.63	0.68	0.68	0.60*	0.72	0.67	0.67	0.63*	0.63*
	Expectation	1.30*	1.23*	1.24**	1.16*	1.17*	1.15*	1.16*	1.18**	1.19**	1.21***	1.23***	1.16*	1.12*	1.10
	Specific Industry Experience	1.06**	1.04*	1.03*	1.03*	1.03*	1.02*	1.02	1.01	1.01	1.00	0.99	1.00	1.00	1.00
	General Work Experience	1.00	1.02	1.03	1.01	1.00*	1.01	1.01	1.01	1.01	1.01	1.00	1.00	1.00	1.00
	Supervisor Experience	0.99	0.99	0.99	1.00	1.02	1.01	1.02	1.03	1.03	1.02	1.02	1.01	1.01	1.01
	Number of People supervised	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Businesses started	1.26*	1.20*	1.10	1.06	1.06	1.07	1.07	1.04	1.06	1.04	1.03	1.07	1.09	1.07
	Parents own Business	1.17	1.20	1.34	1.41	0.91	0.94	0.80	0.87	1.05	1.10	1.16	1.23	1.34	1.48
	education controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
	age controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
	socio-economic controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
2 = still_trying (base category)															
3 = quit	Intrapreneur (H1)	0.27	0.18**	0.29**	0.45*	0.52*	0.39**	0.50*	0.57*	0.62	0.67	0.67	0.78	0.84	0.92
	Business Plan	1.04	0.98	1.05	1.02	0.99	0.99	1.02	1.05	1.07*	1.09**	1.12***	1.11***	1.13***	1.13***
	Organizational Size	0.62	0.64	0.59	0.61	0.65	0.59*	0.63*	0.60*	0.48***	0.59*	0.56**	0.56**	0.55**	0.58**
	Expectation	1.16	1.22	1.09	1.06	1.07	1.10	1.05	1.05	1.04	1.05	1.07	1.02	1.01	0.97
	Specific Industry Experience	1.02	0.97	0.98	0.98	0.96*	0.97*	0.97*	0.97**	0.96***	0.95***	0.95***	0.96***	0.97**	0.97***
	General Work Experience	0.96	0.97	0.98	1.00	1.02	1.02	1.01	1.00	1.01**	1.02***	1.01**	1.02***	1.02	1.02
	Supervisor Experience	0.99	1.02	1.03	1.00	0.99	0.99	0.98	0.99	0.98	0.98	0.99	0.98	0.98	0.98
	Number of People supervised	0.99	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Businesses started	0.90	0.84	0.74	0.82	0.86	0.90	0.92	0.90	0.92	0.93	0.93	0.96	1.01	0.99
	Parents own Business	1.29	1.11	1.75	1.30	1.19	1.11	1.08	1.22	1.48	1.42	1.37	1.21	1.19	1.26
	education controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
	age controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
	socio-economic controls	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
	Number of obs	891	890	890	889	884	884	882	879	871	865	861	857	852	849
	Wald chi2(50)	1730.5	2702.52	114.74	95.88	95.83	99.76	86.12	94.8	108.64	106.15	111.35	104.22	90.69	84.87
	Prob > chi2	0.000	0.000	0.000	0.000	0.000	0.000	0.0002	0.000	0.000	0.000	0.000	0.000	0.000	0.0002
	Pseudo R2	0.1715	0.1437	0.1278	0.093	0.0828	0.0812	0.0725	0.0775	0.0904	0.0866	0.0886	0.0817	0.0714	0.0664
	Log pseudolikelihood	-162.24	-257.61	-367.04	-444.29	-544.31	-629.95	-699.13	-732.96	-758.32	-789.35	-795.69	-814.2	-829.29	-836.59
				p-values:	*	=5%	**	=1%	***	=0.1%						

In this model all variables are expressed using relative risk ratios (RRRs). A RRR= 1 suggests that a one unit change in the independent variable makes falling into the 1=new startup category as likely as remaining within the 2=still trying category. In other words, a RRR = 1 suggests no effect of this variable on the outcome status. Conversely, a RRR<1 indicates that the event (for example a new start-up) is less likely in comparison to remaining in the base category. Finally, a RRR>1 makes the change into the 1=new start-up category, or the 3=abandonment category more likely than remaining in the 2=still trying category. An example from Table 9 clarifies this point: at the nine months mark, NIs are 0.18 times as likely as NEs to quit their nascent venture compared

to remaining in the still trying group. This means that fewer NIs give up within the first nine months of trying.

The following discussion provides a more detailed analysis of the results regarding our main variable of interest – *Intrapreneur*. In the lower half of Table 9, the highly significant variable *Intrapreneur* between months 9 and 27 presents strong evidence that NIs are less likely to abandon their venturing efforts than NEs, relative to still trying. This finding lends support to Hypothesis 1, which suggested that NIs are less likely than NEs to abandon their venturing efforts. Being a NI appears be a significant predictor of persistence in start-up efforts. More precisely, the relative risk ratio at the nine months mark suggest that NIs are only .18 times as likely as NEs to quit (rather than to still be trying to start) their nascent venture. Furthermore, the increasing RRRs over the 9-27 month timeframe after the conception of a nascent venture suggests that the effect of starting a business together with an employer on the likelihood of persistence is particularly strong in the very beginning of working on the nascent venture. This focus on the very first months of nascent venturing lends additional credibility to the arguments of initial resource endowments and intrapreneurial embeddedness that motivated Hypothesis 1. There the argument was that specifically in the early months of the nascent venturing efforts, the very first endowment with resources, as well as the original embeddedness of the NI, would make NIs less likely to quit their venturing efforts. The fact that the data reports the strongest effects early on in our observation supports this timing emphasis.

Hypothesis 2 tested the effect of *Intrapreneur* on starting an actual new company (start-up=1). We hypothesized that NEs would be more likely to bring their nascent venturing efforts to market early on because they have greater incentive to overcome

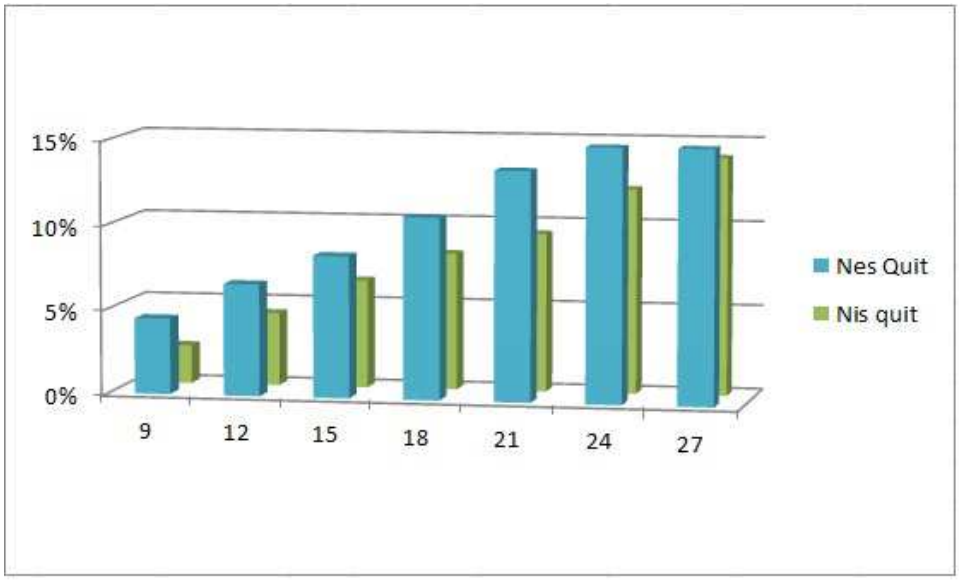
initial liability of newness and smallness. Equivalently, we would expect NIs to be less likely than NEs to start-up their business (compared to still trying) early on. Our data does not support Hypothesis 2. If anything, the likelihood of changing into the 1= new start-up category is influenced more strongly by other factors.

After 30 months of nascent venturing efforts, the main effect of business planning becomes more influential in increasing the likelihood of quitting the nascent venturing efforts (compared to still trying). Similarly, organizational size becomes a more significant predictor of venture abandonment towards the end of the investigation period than the *Intrapreneur* effect. After 21 months of trying to start their nascent venture, a one percent change in the size of the (former) employer organization reduces the odds of quitting (relative to still trying) by more than 35%.

Together the effects of *Business Plan* and *Organizational Size* are significant influencers on the likelihood of nascent venturers abandoning their venture after 30 months of trying. Overall, our data suggests that NEs and NIs differ during a certain critical period after the initial conception of their nascent venturing idea. We estimated this period to be between 9 and 27 months after the conception of their nascent ventures. It seems that in those first one -and-a-half years after the conception of the nascent venture, the influence of the intrapreneurial selection environment is particularly pronounced. This might give rise to some speculations about the intensity of organizational and opportunity influence in nascent corporate ventures at certain points in time and also over time.

The data presented above shows that NIs and NEs differ in their outcome performance between months 9 and 27 after venture conception. To illustrate the data we depict the comparisons of NIs and NEs regarding their abandonment rates between 9 and 27 months in Figure 4.

Figure 4 Comparison of NIs' and NEs' Start-Up Rates 9 - 27 months - Essay 3



Given this constellation of findings, we think it is possible that other factors that influence the NI venturing activity as per the IOON model in essay one, contribute to the markedly reduced likelihood of abandonment for NIs. With the variables included in our estimations above, we feel reasonable secure to have included several organizational characteristics. This is not necessarily the case for opportunity characteristics. Although, one might argue that NVs' expectations regarding their opportunities might capture some variance amongst venture opportunities already. Existing research on opportunity identification and exploitation in the venturing activity has concentrated predominantly on individual and organizational factors that help explain such decisions (Gruber,

MacMillan, & Thompson, 2013; Short, Ketchen, Shook, & Ireland, 2010). However, despite growing interest in the nature of venturing opportunities (Alvarez & Barney, 2013; McMullen, Plummer, & Acs, 2007) the literature has barely discussed their influence on nascent venturing. To use Dahlqvist's and Wiklund's analogy: "One part of the nexus is missing" (2012, pg 186). Therefore, in order to further investigate the possibility that characteristics of the opportunity influence our results, we conducted additional analysis on parts of our sample. The PSED II data provides some measures about the opportunity the NVs pursue. We included five new variables into this part of our analysis: (1) *"New to all" Opportunity* records in a dichotomous manner whether the new product or service is new to all potential clients (yes=1) or whether it is just new to some, or even no one (no=0). In a similar manner, the variable (2) *"Few offer same" Opportunity* records whether other businesses already offer the same or a highly similar product or service. If it is no one or only a few who do, we coded the variable as 1, if more than a few already were offering the same, we recorded the variable as 0. The variable (3) T*echnology max 1 year old* records in a dichotomous manner if the technology became only recently available to the general public (yes =1, no=0). (4) *High-tech* discerns if the NV understands this new opportunity to be in the high-tech sector (yes=1) or not (no=0). Finally, (5) *B2B sales percentage* records the percentage value of how many sales are expected to be purely amongst businesses.

With the additional variables we conducted a competing risk analysis. Competing risk analysis is an extension of standard survival analysis, which allows the inclusion of competing events (new start-up in our case) that might occur and thus in turn make our event of interest (abandonment in our case) impossible to occur. The two events

(abandonment and start-up) compete, because only one of them can occur first in the venturing process.

When accounting for such competing events, we could treat one as censored observations to enable a standard survival analysis with the other. In our paper, treating the creation of a new fledgling firm as censored and using standard survival techniques would be suitable to examine the cause specific hazard underlying abandonment decisions. However, we are interested in the likelihood of abandonment within the nascent start-up phase, i.e. we look to estimate the cumulative incidence function of abandonment. For our research question, the true probability of abandonment is not exclusively a function of the hazard of abandonment, but also a function of the hazard of successfully creating a new fledgling firm. That is because the creation of a new fledgling firm effectively makes abandonment as the first event impossible. Therefore, if we were to treat cases of new firm creation as censored, we would not be able to estimate the cumulative incidence function for abandonment of the nascent start-up efforts directly.

Following Fine and Gray (1999) and using Stata 12.1, we modeled the cumulative incidence of abandonment (outcome variable =2=quit) in the presence of the competing event of a new start-up firm (outcome variable =1=new fledgling firm) with Intrapreneur as the main covariate and the above mentioned control variables. Table 10 displays the results.

Table 10 Results of Competing Risk Regression on Nascent Venture Abandonment - Essay 3

Variable	Subhazard Ratio	Robust S.E.	z-value
Intrapreneur	.627**	.111	-2.63
Business Plan	.791	.138	-1.34
Organizational Size	1.048+	.027	1.80
Expectations	.980	.051	-.38
Industry specific experience	.975**	.009	-2.78
General work experience	1.024+	.015	1.68
Years as Supervisor	.995	.014	-.32
People supervised	.997	.002	-1.10
Businesses helped start	1.013	.051	.25
Parents Business	1.028	.171	.17
"New to all" Opportunity	1.152	.280	.58
"Few offer same" Opportunity	.865	.140	-.90
Technology max 1 year old	1.358	.451	.92
High-tech	1.288	.243	1.34
B2B sales percentage	.999	.003	-.30
Age controls		Yes	
Education controls		Yes	
Socioeconomic controls		Yes	
Observations (NVs)		269	
NVs how failed		172	
NVs who started		97	
Log Pseudolikelihood		-874.062	
Wald Chi2 (28)		46.63**	

Out of the 269 NIs and NEs that provided data for all individual and opportunity control variables 172 quit (=failure event) their venturing efforts during our observation

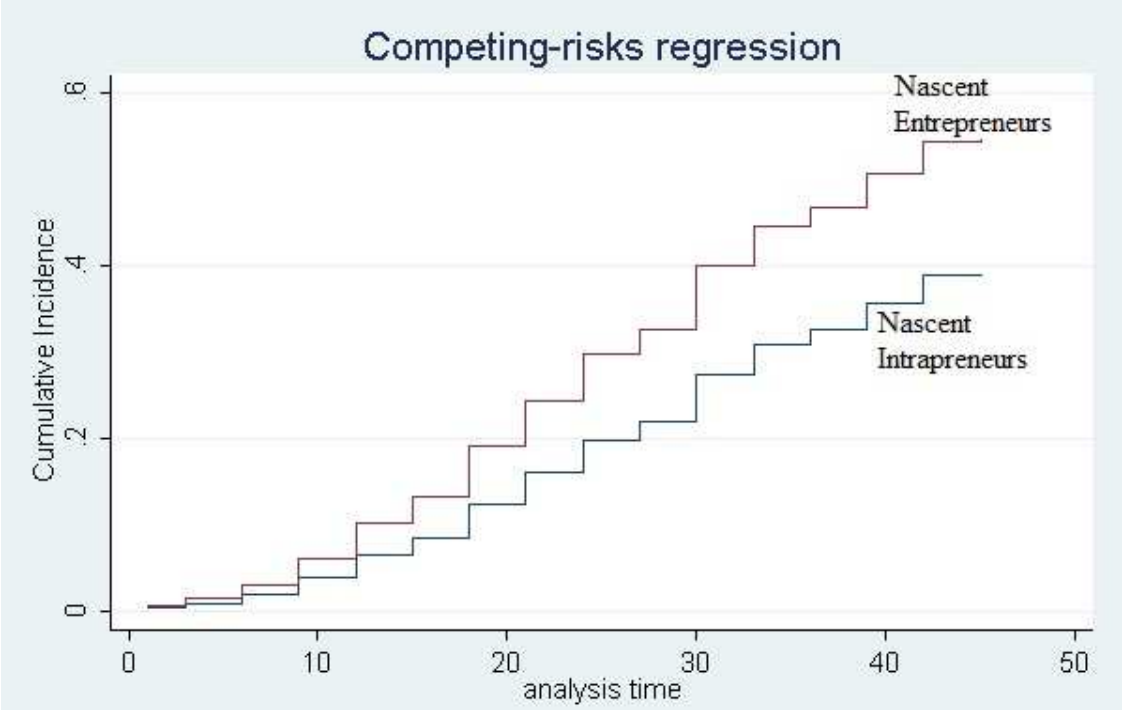
period. 97 individual started their new ventures (=competing event). The overall quality of the model is good. Wald's Chi Square statistic at 28 degrees of freedom is a significant 46.63.

With respect to the previously supported Hypothesis 1, it is interesting to note that again, the variable *Intrapreneur* presents the strongest effect on the cumulative incident of abandonment. The parameter estimates under the SHR column in Table 10 are subhazard ratios and measure the effects of covariates on the cumulative incidence of abandonment. A subhazard ration below 1 indicates lower likelihood of occurrence of the event of interest (abandonment). Consequently a subhazard ratio above one suggests higher likelihood of quitting. Specifically, the subhazard for NIs (Intrapreneur=1) is 63% of the subhazard for NEs (Intrapreneur=0). In other words, NIs have a reduced likelihood of quitting their nascent venturing efforts within the first 45 months since conception of the venture. Since this part of our analysis can control for opportunity characteristics, we find additional confirmation of Hypothesis 1, which held that NIs would be more likely to persist in the venturing efforts.

Unlike the opportunity controls, the effect of industry specific experience is also highly significant, but only moderate in size. An addition year of industry specific work experience lowers the likelihood of abandonment by roughly 2.5%. Conversely, we observe that an additional year of general work experience has the opposite effect. It increases the chances of abandonment by 2.4%, although we can only estimate this with marginal significance at the 10% level.

Figure 5 visualizes the difference between NIs and NEs with respect to the cumulative incidence functions of the competing-risk regression on the likelihood of abandonment over the 27 month of observation, holding all control variables stable at their mean values. The smaller values for NIs show a reduced likelihood to quit their nascent venturing efforts compared to NEs over the displayed analysis time of the first 45 months of nascent venturing activity.

Figure 5 Competing-risks regression on the likelihood of abandonment



In summary, we found that venture mode most strongly influences the likelihood of abandonment (3=quit) within the first 27 months of trying to bring a new venture to market. The effect of *Intrapreneur* on the likelihood of abandonment (compared to still

trying) was stronger than any other tested effect during that timeframe and was robust to the inclusion of additional opportunity control variables.

Implications and Conclusions

This research investigated differences in the start-up and abandonment rates between Nascent Entrepreneurs (NEs) and Nascent Intrapreneurs (NIs). We found partial evidence of differences in the persistence of NIs and NEs. This finding sheds some new empirical light on the question of venturing outcomes differences between intrapreneurs and entrepreneurs. Presumably, initial resources endowments, imprinting effects, NIs' embeddedness or higher switching costs inside the organization would support this empirical finding. On the other hand, bureaucracy and organizational resistance to change might challenge NIs' venturing activity. Previous research predominantly portrayed the influence of large and established organizations on nascent start-up activity as negative (Sørensen, 2007). Recently, Kacperczyk's (2012) differentiation between entrepreneurs and intrapreneurs highlighted that the opportunity structure in established organizations supports the creation of intrapreneurial ventures. Extending her differentiation, we offer another important distinction: the time it takes NIs and NEs to lead their nascent venturing effort to market, or to abandon it. Our work answers Parker's (2011) call for such research. This distinction resulted in our observation that NIs are less likely than NEs to abandon their ventures (ceteris paribus) in the first 45 months of trying to start it. Alternatively one could say, NIs are more persistent in their start-up efforts. As our results show, this difference grows between the first 9 and 21 months of trying to start a

new venture. However, NIs were not more or less likely than NEs to start their nascent ventures during the investigation period.

The results of this research carry important implications for scholarship and practice. First, our findings clarify and extend Kacperczyk's (2012) contribution. Our results do not support her finding "that larger and more mature organizations increase an individual's propensity to start an internal venture" (Kacperczyk, 2012, pg 514). Instead, our data suggests that venturing together with an organization decreases the likelihood that an NI will abandon the nascent venturing effort. Organizational involvement in the nascent venturing phase positively influences intrapreneurial persistence. This is an important distinction because it guides future research efforts into investigating the underlying mechanism why NIs are more likely to persist in their venturing efforts. This route promises more insights into nascent venturing, particularly because we find that NIs and NEs share similar likelihoods to bring their nascent venturing efforts to market. Although we suggest some mechanisms underlying the reduced likelihood of abandonment for NIs in our theorizing efforts, limitations of our data on the organizational characteristics prohibited further specific testing of the underlying mechanism. We therefore await the arrival of matched employee-employer longitudinal datasets.

Second, the results of our study raise interesting questions regarding the future of theory development in the area of NIs' and NEs' start-up efforts. Our findings support organizational behavior aimed at preventing nascent venturing efforts from (premature) failure. The underlying mechanisms of this property of organizations appear useful to investigate in light of findings by Brush, Manolova, and Edelman (2008). Brush and

colleagues build on Aldrich (1999) and suggest that taking more time in the start-up process provides the opportunity to reflect and gain additional knowledge. Yet, such logic contradicts researchers whose empirical work shows that longer gestation windows hamper growths and that high growth organizations work on many issues simultaneously (Fischer, Reuber, & Dyke, 1993). Nevertheless, the prolonged gestation periods for NIs combine well with arguments of time compression diseconomies, suggesting that the development of important assets cannot be rushed (Dierickx & Cool, 1989). Further investigation into the precise mechanisms underlying (premature) failure prevention might shed some light on the merits of different perspectives scholars have taken.

Third, because of higher persistence NIs might over time come to play an increasingly important part in the joint pool of "still trying" nascent venturers. Here we reference our point in the introduction about potential survivor bias in existing studies that investigate persistence at later stages. Given our findings we can shed some light on the phenomenon. Most fundamentally, if no careful differentiation amongst NEs and NIs precedes the analysis, the more persistent group of NIs might influence the results towards reporting overly persistent venturers, when in reality it is the NIs that drive these results. One contribution therefore is to present the empirical evidence needed to argue for separate analysis of NIs and NEs in studies on persistency. Its implication is that investigations that do not distinguish between NIs and NEs allow for increasingly smaller insights into the complicated dynamics of independent and corporate venturing activity. Yet, more focus on the persistent NIs could produce some interesting insights. Since at the end of our observation period, i.e. after 45 months, 42% of NI ventures are still trying to start their venture, the question arises as to the quality of these efforts. One possibility

is that a few of them are dabblers. Another interesting possibility is that some NIs that are still trying, are doing so because their ventures are big efforts that require more time to reach the market. Finally, organizations could value the option of having NIs start with the development of an opportunity and then keep the venture at that stage for some time while they decide on whether or not to put more resources behind the idea.

For practitioners our research has four implications. First, managers tasked with deciding whether to pursue a venturing project in-house or not, might value our research for the advice it provides about similar start-up rates and different abandonment rates between the two venturing modes. Our study does not support the colloquial wisdom that NE ventures can be set up faster than intrapreneurial ventures. Second, our findings about similar speed to market between NIs and NEs might then help individuals to focus on different decision criteria when choosing their preferred venturing mode. Even if they are pressed for time, since the organizational influence makes little difference in time to market compared to the independent start-up effort, individuals should prioritize other decision criteria, such as their start-up motivation in the venture mode choice. According to our research, it would not be advisable to base a venture mode decision on hopes of higher relative speed by NEs. Third, our research helps set expectations within the corporate venturing context. Managers trying to keep up with increasingly faster product development timelines would be wise to avoid expecting their intrapreneurs to develop their new ventures faster. This could help prevent future disagreements and disappointments if the nascent venturing phase takes some time. Lastly, if NIs are less likely to abandon their ventures, corporate decision makers might want to consider the NI

venturing mode especially for the development of long and arduous projects where persistence is at a premium.

Our study is subject to important limitations. Some characteristics of data and design limit our study. First, although useful for our purposes, the crude differentiation of NIs and NEs limits our study to compare one general type of NE with one general type of NI. Detailed information about ownership stakes is only available in a few cases. Yet details on percentage of ownership rights in NIs' venturing contracts would allow for further theoretical variation amongst NIs. It might make a difference whether the NI holds only 10% of the nascent venture, or over 50%. Martiarena (2013) has already advanced the argument that the difference between any and no financial participation is notable in NIs' decision-making. Ownership data would also allow a clearer differentiation from regular employees. We might further expect that higher ownership stakes lead to faster time to market because of greater incentives for the NI. Garrett (2010) suggested stock ownership for employees intensified the linkages between research intensity and innovation output. In light of these findings, scholars might even consider trying to find the optimum percentage value of ownership for NIs that still encourages timely development before diminishing returns in terms of faster time to market set in.

Second, we cannot rule out the possibility that a more selective intrapreneurial venturing environment contributed to our observed results. We did not investigate such organizational characteristics in detail, but they could be one reason why significantly less NIs quit their nascent venturing efforts. An employer organization, having selected a NI, might support a nascent intrapreneurial venture over a longer period and thus make

early withdrawal from the venture less likely. Further, the PSED data does not allow for comparison of risk preferences between individuals and the organization. If these differed, organizations could provide a better or worse fit with the individual NI venture, which could also make a prolonged start-up period more or less likely.

Third, Menzel and colleagues' research suggest that an organizational culture that curbs internal resistance to change and instead values creative contributions might positively influence NIs (Menzel, Aaltio, & Ulijn, 2007). Because of limitations in the data we used, we could not include organizational controls for this aspect. Similarly, other macro effects on the venturing outcome do not form part of our analysis either. It is possible that timing effects, or general economic trends impacted the venturing outcomes. However, it might be more difficult to argue how macro-level effects would differentially affect NIs and NEs.

Finally, although we were able to test some opportunity characteristics with our data, we ideally would like to fully understand other objectively verifiable characteristics of the NI and NE venturing opportunity as well. For example, it certainly makes a difference if the target market for a new opportunity is extremely broad and easily accessible, or highly specialized and protected. Although our opportunity variables in the additional analysis did not suggest significant influence on start-up or persistence rates between NIs and NEs, we would like to subject our analysis to even more stringent tests with additional data on the pursued opportunities.

To address such limitations, we hope to study matched individual and organizational data in the future. Ideally, we would match the PSED data on individuals

with further insights about the companies they work(ed) for and the opportunities they pursue. Such a matched dataset would allow ruling out several of the above limitations and concerns. It would also enable researchers to better understand the venturing opportunities of employees stemming from organizational characteristics, such as generous participation clauses and honoring of individual intellectual property. We further lack information on non-compete clauses that would limit an individual's option to becoming a NI because becoming a NE is no longer a possibility. In addition to addressing these limitations, in future research, we hope to investigate the relative performance differences between the start-up and the quitting group. Insights into what types of nascent venturing efforts are abandoned, or which types succeed to become new start-ups will provide further insights to entrepreneurship researchers. If NIs do not quit ventures that should be abandoned, our findings might cast a very different light on intrapreneurial venturing. Similarly, we would want to know if profitable ventures reach the market quicker or if unprofitable ones take longer. Once we have answers to these questions, the time to start-up and abandonment becomes an even more interesting venturing indicator. As alluded above, another set of future research questions could explore the organizational characteristics that influence start-up and abandonment rates of NIs. We still lack estimates of how for example corporate control influences NIs. Which forms and what amount of corporate control help to focus on the nascent ventures that should be started and sort out the ventures that should better not be attempted?

In conclusion, this study builds on the existing discussion regarding outcome differences between intrapreneurs and entrepreneurs and adds to the existing literature on entrepreneurial persistence. Our principal contribution in this paper was to understand

empirically how corporate involvement influences start-up and abandonment rates over time. We offered richer insights into the outcome differences between NIs and NEs. Our findings suggest that neither NIs, nor NEs were faster in bringing their nascent ventures to market. Rather, we find that NIs and NEs differ in their persistence. We demonstrated a slight superiority of NIs in terms of higher persistence t rates of their venturing tasks. These results suggest stronger corporate influence through reduced intrapreneurial failure rates than through higher start-up rates. Advancing the discussion towards multivariate comparisons over time is a necessary step towards a better understanding of organizational influences on new venture creation.

References

Acquaah, M. 2012. Social networking relationships, firm-specific managerial experience and firm performance in a transition economy: A comparative analysis of family owned and nonfamily firms. ***Strategic Management Journal***, 33(10): 1215-1228.

Aldrich, H. E. 1999. ***Organizations evolving***. Thousand Oaks, CA: Sage.

Almeida, P., Dokko, G., & Rosenkopf, L. 2003. Startup size and the mechanisms of external learning: increasing opportunity and decreasing ability? ***Research Policy***, 32(2): 301-315.

Alsos, G. A., & Ljunggren, E. 1998. Does the Business Start-Up Process differ by Gender? - A Longitudinal Study of Nascent Entrepreneurs. ***Journal of Enterprising Culture***, 6(4): 347-367.

Alvarez, S. A., & Barney, J. B. 2013. Epistemology, Opportunities, and Entrepreneurship: Comments on Venkataraman et al. (2012) and Shane (2012). *Academy of Management Review*, 38(1): 154-157.

Antoncic, B., & Hisrich, R. D. 2001. Intrapreneurship: Construct refinement and cross-cultural validation. ***Journal of Business Venturing***, 16(5): 495-527.

Bamford, C. E., Dean, T. J., & McDougall, P. P. 2000. An examination of the impact of initial founding conditions and decisions upon the performance of new bank start-ups. ***Journal of Business Venturing***, 15(3): 253-277.

Bandura, A. 1977. Self-efficacy: Toward a unifying theory of behavioral change. ***Psychological Review***, 84(2): 191-215.

Baron, J.N., Davis-Blake, A., & Bielby, W.T. 1986. The structure of opportunity: How promotion ladders vary within and among organizations. ***Administrative Science Quarterly***, 248-273.

Baum, J. R., & Locke, E. A. 2004. The Relationship of Entrepreneurial Traits, Skill, and Motivation to Subsequent Venture Growth. *Journal of Applied Psychology*, 89(4): 587-598.

Biggadike, R. 1979. The risky business of diversification. ***Harvard Business Review***, 57(3): 103-111.

Boeker, W. 1989. Strategic Change: The Effects Of Founding And History. ***Academy of Management Journal***, 32(3): 489-515.

Brush, C. G., Manolova, T. S., & Edelman, L. F. 2008. Properties of emerging organizations: An empirical test. ***Journal of Business Venturing***, 23(5): 547-566.

Burns, T.S., & Stalker, G.M. 1961. ***The management of innovation***. London: Tavistock.

Burton, M. D., Soerensen, J. B., & Beckman, C. 2002. Coming from good stock: Career histories and new venture formation. ***Research in the Sociology of Organizations***, 19.

Busenitz, L. W., & Barney, J. B. 1997. Differences between entrepreneurs and managers in large organizations: Biases and heuristics in strategic decision-making. ***Journal of Business Venturing***, 12(1): 9-30.

Camerer, C., & Lovallo, D. 1999. Overconfidence and Excess Entry: An Experimental Approach. ***The American Economic Review***, 89(1): 306-318.

Carter, N. M., Gartner, W. B., & Reynolds, P. D. 1996. Exploring start-up event sequences. ***Journal of Business Venturing***, 11(3): 151-166.

Carter, N. M., Gartner, W. B., Shaver, K. G., & Gatewood, E. J. 2003. The career reasons of nascent entrepreneurs. ***Journal of Business Venturing***, 18(1): 13-39.

Cassar, G. 2013. Industry and startup experience on entrepreneur forecast performance in new firms. ***Journal of Business Venturing***, (in press)(0).

Cohen, W. M., & Levinthal, D. A. 1990. Absorptive Capacity: A New Perspective on Learning and Innovation. ***Administrative Science Quarterly***, 35(1): 128-152.

Cooper, A. C., & Dunkelberg, W. C. 1986. Entrepreneurship and paths to business ownership. ***Strategic Management Journal***, 7(1): 53-68.

Cyert, R., & March, J. 1963. ***The Behavioral Theory of the Firm***. Englewood Cliffs, NJ: Prentice-Hall.

Dahlqvist, J., & Wiklund, J. 2012. Measuring the market newness of new ventures. *Jounral of Business Venturing*, 27: 185-196.

Damanpour, F. 1992. Organizational Size and Innovation. ***Organization Studies***, 13(3): 375-402.

Davidsson, P. 2006. ***Nascent Entrepreneurship: Empirical Studies and Developments***. Hannover, MA: now Publishers.

Delmar, F., & Shane, S. 2003. Does business planning facilitate the development of new ventures? ***Strategic Management Journal***, 24(12): 1165-1185.

Delmar, F., & Shane, S. 2004. Legitimating first: organizing activities and the survival of new ventures. ***Journal of Business Venturing***, 19(3): 385-410.

DeTienne, D.R., Shepherd, D.A., & De Castro, J.O. 2008. The fallacy of “only the strong survive”: The effects of extrinsic motivation on the persistence decisions for under-performing firms. ***Journal of Business Venturing***, 23(5): 528–546.

Dierickx, I., & Cool, K. 1989. Asset Stock Accumulation and Sustainability of Competitive Advantage. ***Management Science***, 35(12): 1504-1511.

Diochon, M., Menzies, T. V., & Gasse, Y. 2005. Exploring the relationship between start-up activities and new venture emergence: a longitudinal study of Canadian nascent entrepreneurs. ***International Journal of Management and Enterprise Development***, 2(3): 408-426.

Dobrev, S. D., & Barnett, W. P. 2005. Organizational Roles and Transition to Entrepreneurship. ***The Academy of Management Journal***, 48(3): 433-449.

Douglas, E. J., & Shepherd, D. A. 2000. Entrepreneurship as a utility maximizing response. ***Journal of Business Venturing***, 15(3): 231-251.

Elfenbein, D. W., Hamilton, B. H., & Zenger, T. R. 2010. The small firm effect and the entrepreneurial spawning of scientists and engineers. ***Management Science***, 56(4): 659-681.

Fast, N. D. 1981. Pitfalls of Corporate Venturing. ***Research Management***, 24(2): 21-24.

Fine, J. P., & Gray, R. J. 1999. A Proportional Hazards Model for the Subdistribution of a Competing Risk. ***Journal of the American Statistical Association***, 94(446): 496-509.

Feldman, M. P., & Kelley, M. R. 2006. The ex ante assessment of knowledge spillovers: Government R&D policy, economic incentives and private firm behavior. ***Research Policy***, 35(10): 1509-1521.

Fischer, E. M., Reuber, A. R., & Dyke, L. S. 1993. A theoretical overview and extension of research on sex, gender, and entrepreneurship. ***Journal of Business Venturing***, 8(2): 151-168.

Forbes, D. P. 2005. Are some entrepreneurs more overconfident than others? ***Journal of Business Venturing***, 20(5): 623-640.

Freeman, J., Carroll, G. R., & Hannan, M. T. 1983. The Liability of Newness: Age Dependence in Organizational Death Rates. ***American Sociological Review***, 48(5): 692-710.

Garrett, R. 2010. Does Employee Ownership Increase Innovation?, ***New England Journal of Entrepreneurship***, 13(2): 37-46.

Garrett, R. & Neubaum, D. 2013 (forthcoming). Top Management Support and Initial Strategic Assets: A Dependency Model of Internal Corporate Venture Performance. ***Journal of Product Innovation Management***.

Gartner, W. B., Shaver, K. G., Carter, N. M., & Reynolds, P. D. 2004. ***The handbook of entrepreneurial dynamics: The process of organization creation***. Thousand Oaks, CA: Sage.

Gatewood, E.J., Shaver, K.G., Powers, J.B., & Gartner, W.B. 2002. Entrepreneurial expectancy, task effort, and performance. ***Entrepreneurship Theory and Practice***, 27(2): 187–206.

Gimeno, J., Folta, T.B., Cooper, A.C., & Woo, C.Y. 1997. Survival of the fittest? Entrepreneurial human capital and the persistence of underperforming firms. ***Administrative Science Quarterly***, 42(4): 750–783.

Granovetter, M. 1985. Economic Action and Social Structure: The Problem of Embeddedness. ***American Journal of Sociology***, 91(3): 481-510.

Granovetter, M. 2005. The Impact of Social Structure on Economic Outcomes. ***The Journal of Economic Perspectives***, 19(1): 33-50.

Gruber, M., MacMillan, I.C., & Thompson, J.D. 2013. Escaping the prior knowledge corridor: What shapes the number and variety of market opportunities identified before market entry of technology start-ups? ***Organization Science***, 24(1) 280-300.

Gulati, R., & Gargiulo, M. 1999. Where do interorganizational networks come from? ***American Journal of Sociology***, 104(5): 1439-1493.

Hannan, M. T. 1998. Rethinking Age Dependence in Organizational Mortality: Logical Formalizations. ***American Journal of Sociology***, 104(1): 126-164.

Hannan, M. T., & Freeman, J. 1984. Structural Inertia and Organizational Change. ***American Sociological Review***, 49(2): 149-164.

Harris, L. C., & Ogbonna, E. 2006. Initiating strategic planning. ***Journal of Business Research***, 59(1): 100-111.

Henderson, R. 1993. Underinvestment and Incompetence as Responses to Radical Innovation: Evidence from the Photolithographic Alignment Equipment Industry. ***The RAND Journal of Economics***, 24(2): 248-270.

Hitt, M. A., Hoskisson, R. E., & Ireland, R. D. 1990. Mergers and acquisitions and managerial commitment to innovation in M-form firms. ***Strategic Management Journal***, 11(4): 29-48.

Holland, D.V., & Garrett, R. 2013. Entrepreneurs' start-up versus persistence decisions: A critical evaluation of expectancy and value. ***International Small Business Journal***, published online 16 April 2013: 1-22.

Holland, D.V., & Shepherd, D.A. 2013. Deciding to Persist: Adversity, Values, and Entrepreneurs' Decision Policies. ***Entrepreneurship Theory and Practice***, 37(2): 331-358.

Honig, B., & Samuelsson, M. 2012. Planning and the Entrepreneur: A Longitudinal Examination of Nascent Entrepreneurs in Sweden. ***Journal of Small Business Management***, 50(3): 365-388.

Kacperczyk, A. J. 2012. Opportunity Structures in Established Firms: Entrepreneurship versus Intrapreneurship in Mutual Funds. ***Administrative Science Quarterly***, 57(3): 484-521.

Koellinger, P., Minniti, M., & Schade, C. 2007. "I think I can, I think I can": Overconfidence and entrepreneurial behavior. ***Journal of Economic Psychology***, 28(4): 502-527.

Krabel, S., & Mueller, P. 2009. What drives scientists to start their own company?: An empirical investigation of Max Planck Society scientists. ***Research Policy***, 38(6): 947-956.

Kuratko, D. F., & Brown, T. J. 2010. Emerging life sciences ventures: The quest for legitimacy. ***Business Horizons***, 53(2): 211-220.

Lazear, E. P. 2004. Balanced Skills and Entrepreneurship. ***American Economic Review***, 94(2): 208-211.

Lazear, E. P. 2005. Entrepreneurship. ***Journal of Labor Economics***, 23(4): 649-680.

LeBrasseur, R., Zanibbi, L., & Zinger, T. J. 2003. Growth Momentum in the Early Stages of Small Business Start-Ups. ***International Small Business Journal***, 21(3): 315-330.

Leung, A., Foo, M. D., & Chaturvedi, S. 2013. Imprinting Effects of Founding Core Teams on HR Values in New Ventures. ***Entrepreneurship Theory and Practice***, 37(1): 87-106.

Marino, K. E., & De Noble, A. F. 1997. Growth and early returns in technology-based manufacturing ventures. ***The Journal of High Technology Management Research***, 8(2): 225-242.

Markman, G.D., Baron, R.A., & Balkin, D.B. 2005. Are perseverance and self-efficacy costless? Assessing entrepreneurs' regretful thinking. ***Journal of Organizational Behavior***, 26 (1): 1–19.

Marx, K., & Lechner, C. 2005. The Role of the Social Context for Strategy Making: Examining the impact of embeddedness on the performance of strategic initiatives. In S. W. Floyd, J. Roos, C. D. Jacobs, & F. W. Kellermanns (Eds.), ***Innovating strategy process***: 135-148. Oxford: Blackwell Publishing.

Matthews, C. H., Schenkel, M. T., Ford, M. W., & Human, S. E. 2009. Comparing Nascent Entrepreneurs and Intrapreneurs and Expectations of Firm Growth. ***Journal of Small Business Strategy***, 20(1): 53-80.

McDougall, P. P., Robinson Jr, R. B., & DeNisi, A. S. 1992. Modeling new venture performance: An analysis of new venture strategy, industry structure, and venture origin. ***Journal of Business Venturing***, 7(4): 267-289.

McGee, J. E., Dowling, M. J., & Megginson, W. L. 1995. Cooperative strategy and new venture performance: The role of business strategy and management experience. ***Strategic Management Journal***, 16(7): 565-580.

McMullen, J.S., Plummer, L.A., & Acs, Z.J. 2007. What is an entrepreneurial opportunity? ***Small Business Economics***, 28(4): 273-283.

Menzel, H. C., Aaltio, I., & Ulijn, J. M. 2007. On the way to creativity: Engineers as intrapreneurs in organizations. ***Technovation***, 27(12): 732-743.

Meyer, J. W., & Rowan, B. 1977. Institutionalized Organizations: Formal Structure as Myth and Ceremony. ***American Journal of Sociology***, 83(2): 340-363.

Milanov, H., & Fernhaber, S. A. 2009. The impact of early imprinting on the evolution of new venture networks. ***Journal of Business Venturing***, 24(1): 46-61.

Monsen, E., Patzelt, H., & Saxton, T. 2010. Beyond Simple Utility: Incentive Design and Trade-Offs for Corporate Employee-Entrepreneurs. ***Entrepreneurship Theory and Practice***, 34(1): 105-130.

Morse, E. A., Fowler, S. W., & Lawrence, T. B. 2007. The Impact of Virtual Embeddedness on New Venture Survival: Overcoming the Liabilities of Newness1. ***Entrepreneurship Theory and Practice***, 31(2): 139-159.

Müller, K. 2010. Academic spin-off's transfer speed—Analyzing the time from leaving university to venture. ***Research Policy***, 39(2): 189-199.

Murray, F., & O'Mahony, S. 2007. Exploring the Foundations of Cumulative Innovation: Implications for Organization Science. ***Organization Science***, 18(6): 1006-1021.

Nanda, R., & Sørensen, J. B. 2010. Workplace peers and entrepreneurship. ***Management Science***, 56(7): 1116-1126.

Palley, T. I. 1995. Safety in numbers: A model of managerial herd behavior. ***Journal of Economic Behavior & Organization***, 28(3): 443-450.

Park, S. H., Chen, R., & Gallagher, S. 2002. Firm Resources as Moderators of the Relationship between Market Growth and Strategic Alliances in Semiconductor Start-ups. ***The Academy of Management Journal***, 45(3): 527-545.

Parker, S. C. 2009a. ***The Economics of Entrepreneurship***. Cambridge: Cambridge University Press.

Parker, S. C. 2009b. Why do small firms produce the entrepreneurs? ***Journal of Socio-Economics***, 38(3): 484-494.

Parker, S. C. 2011. Intrapreneurship or entrepreneurship? ***Journal of Business Venturing***, 26(1): 19-34.

Parker, S. C., & Belghitar, Y. 2006. What Happens to Nascent Entrepreneurs? An Econometric Analysis of the PSED. ***Small Business Economics***, 27(1): 81-101.

Parker, S. C., & van Praag, C. M. 2012. The entrepreneur's mode of entry: Business takeover or new venture start? ***Journal of Business Venturing***, 27(1): 31-46.

Pinchot, G. I. 1985. ***Intrapreneuring***. New York: Harper & Row.

Pisano, G. 2006. Profiting from innovation and the intellectual property revolution. ***Research Policy***, 35(8): 1122-1130.

Powers, J. B., & McDougall, P. P. 2005. University start-up formation and technology licensing with firms that go public: a resource-based view of academic entrepreneurship. ***Journal of Business Venturing***, 20(3): 291-311.

Reynolds, P., & Miller, B. 1992. New firm gestation: Conception, birth, and implications for research. ***Journal of Business Venturing***, 7(5): 405-417.

Reynolds, P. D. 1997. Who Starts New Firms? – Preliminary Explorations of Firms-in-Gestation. ***Small Business Economics***, 9(5): 449-462.

Reynolds, P. D., & Curtin, R. T. 2008. Business Creation in the United States: Panel Study of Entrepreneurial Dynamics II Initial Assessment. ***Foundations and Trends in Entrepreneurship***, 4(3): 155-307.

Reynolds, P. D., & Curtin, R. T. 2011a. Introduction. In P. D. Reynolds, & R. T. Curtin (Eds.), ***New Business Creation***, Vol. 27: 1-25: Springer New York.

Reynolds, P. D., & Curtin, R. T. 2011b. PSED I, II Harmonized Transitions, Outcomes Data Set, ***International Counsil for Small Business (ICSB) George Washington***. Washington DC: International Counsil for Small Business.

Romanelli, E., & Tushman, M. L. 1986. Inertia, Environments, and Strategic Choice: A Quasi-Experimental Design for Comparative-Longitudinal Research. ***Management Science***, 32(5): 608-621.

Rotefoss, B., & Kolvereid, L. 2005. Aspiring, nascent and fledgling entrepreneurs: an investigation of the business start-up process. ***Entrepreneurship & Regional Development***, 17(2): 109-127.

Rothaermel, F. T., & Thursby, M. 2005. Incubator firm failure or graduation?: The role of university linkages. ***Research Policy***, 34(7): 1076-1090.

Shane, S., & Delmar, F. 2004. Planning for the market: business planning before marketing and the continuation of organizing efforts. ***Journal of Business Venturing***, 19(6): 767-785.

Shane, S., & Stuart, T. 2002. Organizational Endowments and the Performance of University Start-ups. ***Management Science***, 48(1): 154-170.

Sharma, P. & Irving, P.G. 2005. Four bases of family business successor commitment: Antecedents and consequences. ***Entrepreneurship Theory and Practice***, 29 (1): 13–33.

Shepherd, D. A., Douglas, E. J., & Shanley, M. 2000. New venture survival: Ignorance, external shocks, and risk reduction strategies. ***Journal of Business Venturing***, 15(5–6): 393-410.

Short, J.C., Ketchen, D.J., Shook, C.L., & Ireland, R.D. 2010. The concept of "opportunity" in entrepreneurship research: Past accomplishments and future challenges. ***Journal of Management***, 36: 40-65.

Shrader, R. C., & Simon, M. 1997. Corporate versus independent new ventures: Resource, strategy, and performance differences. ***Journal of Business Venturing***, 12(1): 47-66.

Sørensen, J. B. 2007. Bureaucracy and Entrepreneurship: Workplace Effects on Entrepreneurial Entry. ***Administrative Science Quarterly***, 52(3): 387-412.

Stinchcombe, A. L. 1965. Organizations and social structure. ***Handbook of organizations***, 44(2): 142-193.

Stuart, T. E., Hoang, H., & Hybels, R. C. 1999. Interorganizational Endorsements and the Performance of Entrepreneurial Ventures. ***Administrative Science Quarterly***, 44(2): 315-349.

Suchman, M. C. 1995. Managing Legitimacy: Strategic and Institutional Approaches. ***The Academy of Management Review***, 20(3): 571-610.

Sykes, H. B. 1986. The anatomy of a corporate venturing program: Factors influencing success. ***Journal of Business Venturing***, 1(3): 275-293.

Teece, D. J. 1986. Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy. ***Research Policy***, 15(6): 285-305.

Teng, B.-S. 2007. Corporate Entrepreneurship Activities through Strategic Alliances: A Resource-Based Approach toward Competitive Advantage*. ***Journal of Management Studies***, 44(1): 119-142.

Townsend, D. M., Busenitz, L. W., & Arthurs, J. D. 2010. To start or not to start: Outcome and ability expectations in the decision to start a new venture. ***Journal of Business Venturing***, 25(2): 192-202.

Tsai, W. 2001. Knowledge Transfer in Intraorganizational Networks: Effects of Network Position and Absorptive Capacity on Business Unit Innovation and Performance. ***The Academy of Management Journal***, 44(5): 996-1004.

Uzzi, B. 1997. Social Structure and Competition in Interfirm Networks: The Paradox of Embeddedness. ***Administrative Science Quarterly***, 42(1): 35-67.

Van de Ven, A. H., Hudson, R., & Schroeder, D. M. 1984. Designing New Business Startups: Entrepreneurial, Organizational, and Ecological Considerations. ***Journal of Management***, 10(1): 87-107.

Van Gelderen, M., Bosma, N., & Thurik, R. 2001. Setting up Business in the Netherlands: Who starts, who gives up, who is still trying. , ***ERIM Report Series Reference No. ERS-2001-15-STR***. Available at SSRN: http://ssrn.com/abstract=370874.

Van Gelderen, M., Thurik, R., & Bosma, N. 2005. Success and Risk Factors in the Pre-Startup Phase. ***Small Business Economics***, 24(4): 365-380.

van Gelderen, M., Thurik, R., & Patel, P. 2011. Encountered Problems and Outcome Status in Nascent Entrepreneurship. ***Journal of Small Business Management***, 49(1): 71-91.

van Praag, C., & Versloot, P. 2007. What is the value of entrepreneurship? A review of recent research. ***Small Business Economics***, 29(4): 351-382.

Weiss, L. A. 1981. Start-up Businesses: A Comparison of Performances. ***Sloan Management Review (pre-1986)***, 23(1): 37-37.

Zahra, S. A. 1993. Environment, corporate entrepreneurship, and financial performance: A taxonomic approach. ***Journal of Business Venturing***, 8(4): 319-340.

Zahra, S. A. 1996. Technology strategy and new venture performance: A study of corporate-sponsored and independent biotechnology ventures. ***Journal of Business Venturing***, 11(4): 289-321.

Zhao, Y. L., Song, M., & Storm, G. L. 2012. Founding Team Capabilities and New Venture Performance: The Mediating Role of Strategic Positional Advantages. ***Entrepreneurship Theory and Practice***: no-no.

Chapter 5 : General Conclusions

This dissertation proposed a differentiating analysis of the new venture creation mode, nascent intrapreneur or nascent entrepreneur. Theorizing and testing determinants and consequences of the venturing mode choice, this thesis explored the overarching research question "how do nascent intrapreneurs and nascent entrepreneurs differ from each other?" To address this question, this thesis presented three complementary essays. Each essay makes a unique contribution by answering one research question. Together the three essays contribute to the overall goal of a deeper understanding of the new venture creation mode. In this final chapter, I explain the contributions of each essay and how they inform the thesis as a whole. The thesis concludes by outlining the broader implications of its contributions, describing its overall limitations, and discussing possibilities for future research.

The first essay, chapter 2, focused on the theoretical differences between NIs and NEs. A review of the literature concluded that important contextual factors are under-theorized regarding their influence on individual intrapreneurs. The argument was twofold. First, I argued that unique contextual factors influence the individual venturing decision. In particular, differences in the organizational context between NIs and NEs influence how individuals try starting a new venture. Second, I argued that the corporate entrepreneurship literature predominantly applies an organizational perspective. Thus, it has not yet developed a sufficiently detailed account of the individual level, particularly the nascent intrapreneurs. To close this gap in the literature I built a theoretical model which explains how individual, opportunity, and organizational characteristics influence the venture mode choice. I termed the model the Individual-Opportunity-Organization-

Nexus (IOON) because it extends the established Individual-Opportunity Nexus (Shane, 2003) in two ways. First, the IOON includes contextual influences from the organizational level. Second, the IOON explains the impact of individual, opportunity, and organizational influencers on the venture mode choice as one particular aspect of new venture creation. I concluded the development of the propositions underlying the IOON by explaining the three-way interaction between the effects of individual, opportunity, and organizational influencers on the venture mode decision. In this way the configurational and multi-level perspective of the IOON may serve future research efforts.

The second essay, chapter 3, tested parts of the IOON empirically. We asked how NIs and NEs differ with respect to their motivation to start a new venture. Specifically, we analyzed how intrinsic and extrinsic motivation in form of financial, recognition, independence, and role model motivation influenced the general start-up decision and the venture mode choice. Essay two highlighted two types of selections on individual start-up motivations to become NIs or NEs. Our hypotheses development drew on theories of occupational choice (Kolvereid, 1996a, b; Lazear, 2005; Parker, 2004, 2008) and Human Resource Management Selection (Davis, 1999; Gerstein & Reisman, 1983; Hamel, 1999; Hayton, 2005; Schmelter, Mauer, Börsch, & Brettel, 2010). We argued first that individual start-up motivation affects self-selection into any type of nascent venturing efforts. Then we followed the IOON by including organizational determinants. We argued that organizational selection mechanisms with individual selection mechanisms co-determine whether a nascent venturer explores a new idea in the NI or NE mode. The essay demonstrated empirically that the organization, through selection mechanisms for

NIs, influences the venturing mode decision at the same time that individual venturing motivations play a role. We found that financial motivation and external recognition mattered more for the selection into intrapreneurship than for the selection into starting any type of nascent venture.

The third essay, chapter 4, explored the consequences of integrating contextual influences on the venture mode choice. This essay investigated differences in the start-up and abandonment rates of NIs and NEs. Several scholars had previously shown that the new venture creation process appears random and unstructured (Davidsson & Gordon, 2010; Liao, Welsch, & Tan, 2005). In response to gaps in the literature regarding our understanding of the persistence of NI and NE start-up efforts and the time required for nascent ventures to reach the market, essay three investigated differences in start-up and abandonment rates between NIs and NEs. Our empirical analysis did not provide "evidence that larger and more mature organizations increase an individual's propensity to start an internal venture" (Kacperczyk, 2012, pg. 514). Instead, our data showed that being a NI decreases the propensity to abandon the nascent venturing effort. This distinction is important because it can guide future research efforts into investigating the underlying mechanism why NIs are less likely to abandon their venturing efforts. This route promises more insights into nascent venturing, particularly because we found that NIs and NEs share similar likelihoods to bring their nascent venturing efforts to market.

Contributions

This dissertation contributed theoretical arguments as well as empirical evidence regarding the importance of venturing mode in understanding antecedents and consequences of new venture creation. My contributions include a differentiating analysis of NIs and NEs. The next two sections outline the theoretical and practical contributions of the three essays.

Theoretical Contributions

This thesis made five contributions to theory. First, throughout this thesis, we argued that analysis of the venturing process at the individual level is timely and important. Existing research emphasized the outcome of the venturing process in form of innovation or performance, particularly within companies (Antoncic & Hisrich, 2004; Baron & Tang, 2011). In order to understand the process of new venture creation comprehensively it was necessary to examine its beginnings on the individual NI and NE level. Individual NIs and NEs attempt to develop their ventures from the nascent stage to the startup stage. Their behaviors and idiosyncrasies within the contextual framework of organizations and opportunities inform and shape this process. The paper's comparison of NIs and NEs contributes to research on the individual intrapreneur at the beginning of the new venture creation process. This contribution extends research by Matthews and colleagues (2009), Parker (2011), Martiarena (2013), and others, who already started to fill the gap that previously neither research on nascent entrepreneurship, nor research on corporate entrepreneurship addressed.

Second, with the development and first empirical testing of the IOON, this thesis enabled both the individual and organizational perspectives on the study of new venture creation to continue a convergent path. Studies from the organizational perspective took place mostly in the CE literature. This thesis noted that some of the newest contributions to that literature explicitly considered individual level influences. While the CE literature still does not have a full account of the individual NIs, it does acknowledge the importance of individual actors (Burgelman, 1983; Kuratko, Ireland, Covin, & Hornsby, 2005). Likewise, individual level research on nascent venturing continues the inclusion of contextual factors and boundary conditions in its theorizing. This thesis strengthened both developments. The IOON argued for a joint perspective of individual, opportunity, and organizational influences on the nascent venturing process. It showed how these three perspectives exist as equally important next to each other. The IOON also highlighted their interactive nature. The interactive nature of the IOON requires that individual, opportunity, and organizational influences combine in any future theorizing of new venture creation and venturing mode. As mentioned at several points throughout the thesis, matched employee-employer data would allow empirical analysis to also consider individual, opportunity, and organizational characteristics jointly.

Third, this thesis contributed to partial reconciliation of two competing arguments concerning the start-up and abandonment rates of nascent ventures. One established position suggests the importance of initial resource endowments of the incumbent in the context of timely business start-up (Shrader & Simon, 1997; Teng, 2007). Another perspective stresses organizational hurdles to the development of corporate start-ups (Dobrev & Barnett, 2005; Sørensen, 2007). It was unclear which of

the two perspectives better explained the start-up and abandonment rates of nascent NI ventures relative to NE ventures. The thesis' contribution was to reconcile both perspectives by emphasizing the specific timing of early advantages that NIs enjoy over NEs during the nascent phase of venturing. With these time sensitive arguments, the thesis contributes to the study of venture mode and timing as important boundary conditions regarding outcome differences between independent and corporate ventures. Such reconciliation via the clear differentiation of NIs and NEs over time can help address other situations of competing explanations for phenomena observed in the process of new venture creation.

The fourth contribution is that the three essays together explain how combining structure and process studies can advance the CE literature. The literature to date has focused either on the structural dimensions of CE (Hornsby, Naffziger, Kuratko, & Montagno, 1993) or on process dimensions (Burgelman, 1983). The disconnect between structural and process studies (Phan, Wright, Ucbasaran, & Tan, 2009) comes at a cost. If process studies fail to build on structural studies, they can do little more than detect patterns. This thesis included both a structure study in essay two and a process study in essay three. The thesis then used the findings of the structure study about the venturing mode decision as input into the process study about differences in start-up and abandonment rates. The three-essay format enabled this connection. The thesis used the findings of essay two regarding the venture mode selection as input for essay three regarding start-up and abandonment rates over time. In combination, my three essays therefore addressed the call by Dess, Lumpkin, and McGee (1999) to link CE strategy, structure, and processes. These authors emphasized that researchers "need to consider the

links between these concepts, corporate entrepreneurship and performance" (pg. 97). In this light, this thesis exemplified how to make use of the complementary nature of structure and process studies.

With respect to the fifth and last proposed theoretical contribution, my thesis addressed the "heterogeneity problem" that Davidsson (2006) explained in his review of the nascent entrepreneurship literature. His argument concerns the low reliability of findings derived from the highly heterogeneous groups of business starters. Entrepreneurs and their activities are extremely diverse. What is true in one context and for one sample is not necessarily true in another context or another sample. To address this challenge, the thesis proposed three remedies. It suggested (1) a distinction that separates the group of business starters into two sizeable subgroups, NIs and NEs, which each propose distinct influences and consequences of the venturing task. The thesis then argued for (2) the focus on time as a differentiator to understand differences in venturing output. Finally, I made the argument for (3) the explicit inclusion of organizational and opportunity influences in theorizing efforts and empirical tests. With these clear and parsimonious distinctions of mode and time and the inclusion of organizational and opportunity influences, the thesis contributes a first step towards addressing the heterogeneity challenge.

Practical Contributions

The three essays collectively demonstrated through theoretical arguments and empirical evidence that it is important to consider the venturing mode and the influence it has on

new venture creation. My thesis explained that individual, opportunity, and organizational characteristics influence the venturing mode and that venturing mode itself influences the start-up process and outcome. My findings suggest that individual factors, such as individual venturing motivations influence the venture mode choice. These insights could encourage managers tasked with the selection of intrapreneurs to pay specific attention to their venturing motivation. If not preventable, it might be detectable if individuals have a tendency to leave the organization with their venturing idea to become independent NEs. This thesis showed some motivations, such as financial motivation or external recognition to matter more for selection into intrapreneurship than into entrepreneurship. This finding was not only significant, but also supported by the biggest size of coefficients amongst the tested motivation. Including all other tested determinants, individuals ranking financial motivation as important were still a full 10% more likely to start an NI venture. Social recognition improved such likelihood by 8%. This should give managers more knowledge and confidence about how to design attractive compensation packages. These should combine monetary rewards for NIs with the offer of external recognition. In addition, such insights might inspire smaller firms with fewer resources to encourage NI ventures based on providing the involved NIs with extensive internal and external recognition.

This dissertation also emphasized the influence of venturing mode on the abandonment rates of nascent ventures. The empirical evidence of this thesis showed that NIs are significantly less likely to abandon their nascent venturing efforts in the first 45 months since conception. This knowledge is important for entrepreneurial organizations in general. They carefully evaluate the venturing opportunity and decide whether to

support its exploitation inside the organization where chances are smaller that it becomes abandoned early on. On the other hand, our findings do not support that venturing together with an established organization increases the speed to market. For practitioners the lower likelihood of NIs' abandonment could suggest two things: (1) NIs could be less likely to give up, or (2) NIs do not give up quickly enough. Studying the performance of the started or abandoned ventures would make it possible to give further guidance. Still these findings might encourage managers to explore their possibilities in making use of the relatively longer survival period of NI ventures. Such characteristics of the NI venturing process might be particularly interesting for the exploration of currently unattractive but potentially later very attractive venturing propositions. Managers might want to keep the venture inside corporate boundaries for later exploitation.

Limitations

The contributions of this thesis are subject to some overaarching limitations affecting all three essays. They arise predominantly from our use of secondary data. First, data from the Panel Study of Entrepreneurial Dynamics hardly includes any information on the employers of NIs or former employers of NEs. As mentioned in the practical contributions, this limits our ability to check for more organizational effects that might affect start-up motivations or start-up and abandonment rates for nascent venturers. It further restricts our ability to compare NIs who have a very favorable organizational environment for their venturing efforts, to those who do not. It is possible that, even

within the group of NIs, a particular category of strongly supported NIs drives our findings regarding motivation and abandonment rates.

Second, the fact that we could not investigate the performance of the eventually started or abandoned ventures limits the applicability of results in essay three. Without information about such indicators as profitability and new jobs created by started ventures, it is impossible to determine whether there is any advantage to NIs being less likely to withdraw from the venturing effort. If NIs continued to develop new ventures that eventually result in significant improved corporate performance for the parent company, it might be helpful that they do not withdraw quickly. However, if NIs were not to abandon ventures that they should abandon, NIs potentially waste additional time and resources. Unfortunately, we lacked sufficient data to compare NIs and NEs new start-ups in that regard, so our contribution remains concentrated on the detection of differences in the persistence of nascent ventures.

Third, the IOON does not include important macro-level variables, such as economic climate and culture which would make it more comprehensive. For this study's focus on the US, this limitation might not be of high concern. To the extent that US states share similar cultural values and experience similar exogenous economic shocks, our results should remain robust to the inclusion of such variables. However, for the applicability of the IOON towards other countries or geographical regions it would be highly desirable to include potentially heterogeneous macro-level effects in its theorizing.

Fourth and relatedly, because the PSED facilitates the study of American NIs and NEs, our results might not be generalizable completely to nascent venturers and

companies in different regions and cultural contexts. This is particularly true with respect to the comparison of international studies on what happens to nascent entrepreneurs in chapter 3. These indicated the existence of differences across countries. Future research could test whether our findings hold in different contexts.

Fifths, this thesis used individual level data for its analysis. We can follow Baum and colleagues in claiming that venturing is fundamentally personal (Baum, Frese, Baron, & Katz, 2007). Yet other scholars recognize that individuals or teams initiate the venturing process (Shane, Locke, & Collins, 2003). We did not include research on entrepreneurial teams in our theorizing and empirical analysis. Due to the unique individual level data, it is possible that our findings are particularly relevant for single person NI and NE start-up attempts. Single person start-ups (NI or NE) comprise about 50% of our data. Our findings might not be as informative for ventures that since conception comprise a team of NIs or NEs.

Future Research

This thesis suggested at several points interesting avenues for future research. First, in essay one, I build theory that combined individual, opportunity, and organizational influences on the venturing mode choice. Although I explained and suggested the interaction of these three levels in a dedicated proposition, future research could empirically test the mechanisms underlying the IOON and its proposed three-way interactions. Configurational models are particularly useful for that endeavor.

Second, determining regional differences between NE and NI rates could prove to be an interesting avenue of future research. Scholars have already established the

connection between the prevalence of regional idiosyncrasies and entrepreneurship (Lee, Florida, & Acs, 2004; Tödtling & Wanzenböck, 2003). Well-known US examples are Silicon Valley and the Boston, Massachusetts Region. Scholars have been less forthcoming in determining the regional characteristics most favorable to intrapreneurship. For intrapreneurs, financing options might be less important compared to the business practices of large multinationals with the appetite for corporate venturing initiatives. If entrepreneurship and intrapreneurship flourished in similar or identical regions, maybe other unobserved characteristics positively influence both modes of new venture creation. Future scholarship could take our differentiation of NIs and NEs as a useful one to extend to studies of regional entrepreneurship.

Third, building on essay three, an interesting stream of future research could supplement our findings with additional analysis of matched employer-employee data. While we have theorized about the influence of organizational characteristics such as age and size, other organizational characteristics might likewise influence the venture mode choice and venturing in general. Such scholarship would not only buttress the generalizability of our findings, but could also investigate additional determinants from individual, opportunity, and organizational perspectives. For example, data on the existence and content of intrapreneurial contracts could inform questions about non-compete agreements, shared revenue agreements, anticipated or demanded rates of return, etc. These organizational characteristics could influence the decision to start a new venture together with an employer. Matched employer-employee data would enable scholars to explore the organizational selection mechanisms posited in this thesis. Other organizational characteristics, such as the money invested into the nascent venture, the

proximity of the venture to the core business of the parent company, or the relative growth rates of parent and industry might also affect the start-up and abandonment rates of nascent NI ventures. These questions will prove important to answer in order to deepen our understanding of intrapreneurial venturing efforts.

With the increasing popularity of research on new venture creation with scholars, practitioners and policy makers, many expectations arise concerning amongst others corporate renewal, job creation and performance improvement. Such hopes intensify with global unemployment rates increasing while worldwide economic output slows. Given such challenging trends in economies around the globe, individuals, corporations, and governments are interested in understanding the process of new venture creation in further detail. The community of entrepreneurship scholars can contribute to these challenging tasks by analyzing the mechanisms that lead to the creation of new ventures. This thesis contributes to these efforts with a dedicated analysis of the venturing mode, and how one mode of new venture creation differs from the other.

References

Antoncic, B., & Hisrich, R. D. 2004. Corporate entrepreneurship contingencies and organizational wealth creation. ***Journal of Management Development***, 23(6): 518-550.

Baron, R. A., & Tang, J. 2011. The role of entrepreneurs in firm-level innovation: Joint effects of positive affect, creativity, and environmental dynamism. ***Journal of Business Venturing***, 26(1): 49-60.

Baum, J. R., Frese, M., Baron, R. A., & Katz, J. A. 2007. Entrepreneurship as an area of psychology study: An introduction. In J. R. Baum, M. Frese, & R. A. Baron (Eds.), ***The psychology of entrepreneurship***. Mahwah, NJ: Lawrence Erlbaum Associates, Publishers.

Burgelman, R. A. 1983. Corporate Entrepreneurship and Strategic Management: Insights from a Process Study. ***Management Science***, 29(12): 1349-1364.

Davidsson, P. 2006. ***Nascent Entrepreneurship: Empirical Studies and Developments***. Hannover, MA: now Publishers.

Davidsson, P., & Gordon, S. R. 2010. ***Panel studies of new venture creation: a review and suggestions for future studies***. Paper presented at the Annual Meeting of the Academy of Management, Montréal, Canada.

Davis, K. S. 1999. Decision criteria in the evaluation of potential intrapreneurs. ***Journal of Engineering and Technology Management***, 16(3–4): 295-327.

Dess, G. G., Lumpkin, G. T., & McGee, J. E. 1999. Linking Corporate Entrepreneurship to Strategy, Structure, and Process: Suggested Research Directions. ***Entrepreneurship: Theory & Practice***, 23(3): 85-102.

Dobrev, S. D., & Barnett, W. P. 2005. Organizational Roles and Transition to Entrepreneurship. ***The Academy of Management Journal***, 48(3): 433-449.

Gerstein, H., & Reisman, H. 1983. Strategic Selection: Matching Executives to Business Conditions. ***Sloan Management Review***, 24(2): 33-49.

Hamel, G. 1999. Bringing Silicon Valley Inside. ***Harvard Business Review***, 77(5): 70-84.

Hayton, J. C. 2005. Promoting corporate entrepreneurship through human resource management practices: A review of empirical research. ***Human Resource Management Review***, 15(1): 21-41.

Hornsby, J. S., Naffziger, D. W., Kuratko, D. F., & Montagno, R. V. 1993. An Interactive Model of the Corporate Entrepreneurship Process. ***Entrepreneurship: Theory & Practice***, 17(2): 29-37.

Kacperczyk, A. J. 2012. Opportunity Structures in Established Firms: Entrepreneurship versus Intrapreneurship in Mutual Funds. ***Administrative Science Quarterly***, 57(3): 484-521.

Kolvereid, L. 1996a. Organizational Employment Versus Self-Employment: Reasons for Career Choice Intentions. ***Entrepreneurship: Theory & Practice***, 20(3): 23-31.

Kolvereid, L. 1996b. Prediction of employment status choice intentions. ***Entrepreneurship: Theory & Practice***, 21(1): 47-57.

Kuratko, D. F., Ireland, R. D., Covin, J. G., & Hornsby, J. S. 2005. A Model of Middle-Level Managers' Entrepreneurial Behavior. ***Entrepreneurship Theory and Practice***, 29(6): 699-716.

Lazear, E. P. 2005. Entrepreneurship. ***Journal of Labor Economics***, 23(4): 649-680.

Lee, S. Y., Florida, R., & Acs, Z. 2004. Creativity and Entrepreneurship: A Regional Analysis of New Firm Formation. ***Regional Studies***, 38(8): 879-891.

Liao, J., Welsch, H., & Tan, W.-L. 2005. Venture gestation paths of nascent entrepreneurs: Exploring the temporal patterns. ***The Journal of High Technology Management Research***, 16(1): 1-22.

Martiarena, A. 2013. What's so entrepreneurial about intrapreneurs? ***Small Business Economics***, 40(1): 27-39.

Matthews, C. H., Schenkel, M. T., Ford, M. W., & Human, S. E. 2009. Comparing Nascent Entrepreneurs and Intrapreneurs and Expectations of Firm Growth. ***Journal of Small Business Strategy***, 20(1): 53-80.

Parker, S. C. 2004. ***The Economics of Self-Employment and Entrepreneurship***. Cambridge: Cambridge Universtity Press.

Parker, S. C. 2008. Entrepreneurship among married couples in the United States: A simultaneous probit approach. ***Labour Economics***, 15(3): 459-481.

Parker, S. C. 2011. Intrapreneurship or entrepreneurship? ***Journal of Business Venturing***, 26(1): 19-34.

Phan, P. H., Wright, M., Ucbasaran, D., & Tan, W.-L. 2009. Corporate entrepreneurship: Current research and future directions. ***Journal of Business Venturing***, 24(3): 197-205.

Schmelter, R., Mauer, R., Börsch, C., & Brettel, M. 2010. Boosting corporate entrepreneurship through HRM practices: Evidence from German SMEs. ***Human Resource Management***, 49(4): 715-741.

Shane, S. 2003. ***A General Theory of Entrepreneurship: The Individual-Opportunity Nexus***. Cheltenham: Edward F. Elgar.

Shane, S., Locke, E. A., & Collins, C. J. 2003. Entrepreneurial motivation. ***Human Resource Management Review***, 13(2): 257-279.

Shrader, R. C., & Simon, M. 1997. Corporate versus independent new ventures: Resource, strategy, and performance differences. ***Journal of Business Venturing***, 12(1): 47-66.

Sørensen, J. B. 2007. Bureaucracy and Entrepreneurship: Workplace Effects on Entrepreneurial Entry. ***Administrative Science Quarterly***, 52(3): 387-412.

Teng, B.-S. 2007. Corporate Entrepreneurship Activities through Strategic Alliances: A Resource-Based Approach toward Competitive Advantage*. ***Journal of Management Studies***, 44(1): 119-142.

Tödtling, F., & Wanzenböck, H. 2003. Regional differences in structural characteristics of start-ups. ***Entrepreneurship & Regional Development***, 15(4): 351-370.

Curriculum Vitae

Name: **Matthias A. Tietz**

Post-secondary Education and Degrees:

Western University, London, Ontario, Canada
2009-2013 Ph.D.

Nanyang Technology University, Singapore
2008-2009 M.B.A.

University of St. Gallen, Switzerland
2007-2009 M.A.

University of St. Gallen, Switzerland
2004-2007 B.A.

Honors and Awards:

Pierre L. Morrissette Graduate Scholarship
2009-2013

Oustanding Student Paper Award, AOM 2012
(together with Simon C. Parker)

Al Mikalachki PhD Research Fund

PhD Fellowship Plan for Excellence at Western University
2009-2013

Related Work Experience

Instructor, Ivey LEADER Program
Skopje, Macedonia – Summer 2012

Teaching Assistant: New Venture Creation
Western University - 2009-2010

Publications:

Tietz, M.A. & Parker, S.C. (2012). How do Intrapreneurs and Entrepreneurs differ in their Motivation to start a New Venture?
Frontiers of Entrepreneurship Research

Conference Presentations:

Tietz, M.A., & Anderson, B.S. (2013). Who, What, and Where: Towards an Integrated Model of New Venture Creation and Venture Mode
Academy of Management, Buenavista, FL, Aug 8-13th

Tietz, M.A., & Parker, S.C. (2013). Make it or break it: Start-up and Abandonment Rates of Nascent Intrapreneurs compared to Nascent Entrepreneurs over time.
Great Lakes Entrepreneurship Network Conference, Columbus, OH, May 17-18th

Tietz, M.A., & Parker, S.C. (2012). A Closer look at New Venture Creation: How do Intrapreneurs and Entrepreneurs differ in Speed?
ICSBGW, Global Entrepreneurship Conference, Washington DC, Oct 11-13th

Tietz, M.A. & Parker, S.C. (2012) Charitable donations by self-employed small business owners
Academy of Management, Boston, MA, Aug 3-7th

Tietz, M.A. & Parker, S.C. (2012) Intrapreneurs' Motivation to start New Ventures
Academy of Management, Boston, MA, Aug 3-7th
Babson College Entrepreneurship Research Conference, Fort Worth, TX, Jun 6-9th

Tietz, M.A. & Parker, S.C. (2011). How do Intrapreneurs and Entrepreneurs differ in their Motivation to start a new Venture?
ICSBGW, Global Entrepreneurship Conference, Washington DC, Oct 6-8th

Tietz, M.A. (2011). How Philanthropy and Entrepreneurship interplay to create Wealth.
USASBE, Entrepreneurship Conference, Hilton Head Island, SC, Jan 13-15th

Case Studies

Tietz, M.A. Parker, S.C. (2011). Conflict over Leadership and Succession in a Successful Family Business: The Lakkard Leather Company. Case Study and Teaching Note with Simon C. Parker published with Ivey Publishing (9B11M043)

Tietz, M.A. (2009). Living Entrepreneurship at Brenner GmbH. Case Study for the Successful Transgenerational Entrepreneurial Practices(STEP) International Research Project at CFB-HSG, University of St.Gallen, Switzerland

Tietz, M.A. (2009). 100 years of Dahmen GmbH. Case Study for the Successful Transgenerational Entrepreneurial Practices (STEP) International Research Project at CFB-HSG, University of St.Gallen, Switzerland

Senn, C. & Tietz, M.A. (2008). Global Customer Solutions at DHL. Case Study for Executive Education at the Institute of International Management and the Account

Management Center, Zurich, Switzerland

Tietz, M.A. & Zellweger, T. (2008). Case Study Anton GmbH: Transgenerational Entrepreneurship. CFB-HSG, University of St.Gallen, Switzerland - prepared for Master Level seminar at Stockholm School of Economics

Tietz, M.A. & Napolitano, L. (2007). Driving Customer-Centricity at Henkel. Case Study for Executive MBA seminar at Columbia Business School and the Account Management Center, Zurich, Switzerland